

ANNUAL REPORT

JANUARY 2018 – DECEMBER 2018



A consortium of



THE UNIVERSITY OF
MELBOURNE



Australian Government
The Treasury



Treasury
and Finance



CONTENTS

Foreword from the Chair	03
Director's Report	04
About the Centre for Market Design	05
Board members	06
Our team & highlights	07
Capability building	08
Fundamental research	10
Policy projects	12
Financial Statement	14
Research output	15

FOREWORD FROM THE CHAIR



Professor Paul Kofman

Dean of the Faculty of Business and Economics, The University of Melbourne



The Centre for Market Design (CMD) is a unique engagement platform that enables interactions and mutually beneficial cooperation between government, industry and academic economists.

The innovative project undertaken with the National Disability Insurance Agency and the impact it has made to disability and other human services is a perfect example of the important work underway at the CMD. The Centre shines as a leader in applying research to share knowledge and problem solve in the broader community for tangible, better outcomes for multiple stakeholders. I commend all who contributed to the excellent work undertaken in 2018.

As the CMD enters its third phase of operation with a vision of positive transformation and sustained excellence across its core objectives of capability building; the application of economic design to policy; and engaging in research, I wish the CMD team the very best.

DIRECTOR'S REPORT



Professor Simon Loertscher
Director



2018 sees the Centre for Market Design enter Phase Three of its operation, with a focus on Energy Markets, Environment and Urban Economics, Industrial Organization and Program Evaluation.

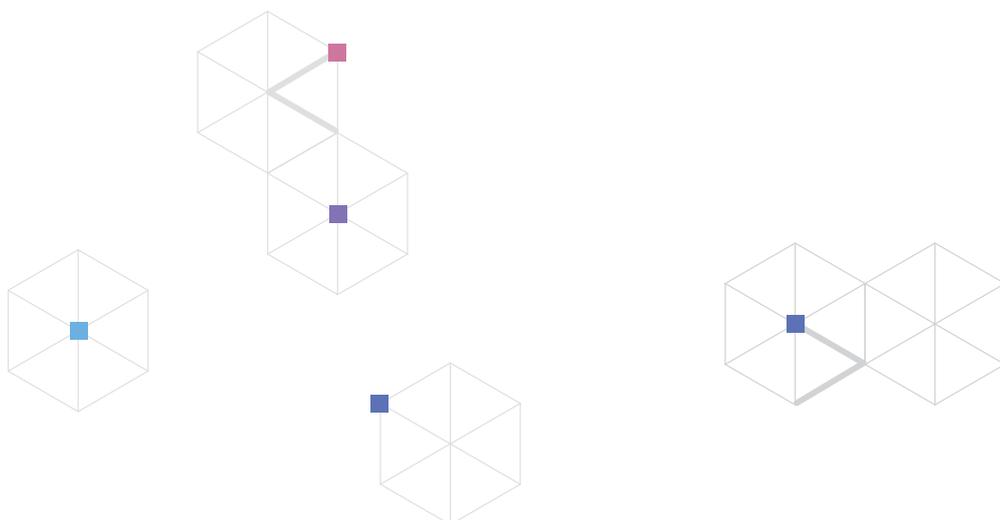
The Centre for Market Design's excellence in building capability; applying economic design to policy; and producing high quality research continues.

The CMD is committed to attracting high quality research students and post-doctoral fellows and providing them with top support to advance the Centre's research agenda. We congratulate Dr David Delacrétaz, former CMD PhD student, on obtaining a Postdoctoral Prize Research Fellow in Economics at the University of Oxford.

The Centre continues to provide fiscal, efficient and engagement outcomes for its stakeholders with its policy application projects. One of the CMD's outstanding projects this year is the reform to travel services for the Victorian Department of Education and Training, by Mr Gary Stoneham and Professor Charles Plott. More details on the project can be found on Page 13 of this report.

Looking ahead, the CMD plans to increase contractual work and improve policy design applications; build capability by hiring post-doctoral fellows and offer increased program offerings, conferences and workshops. We will deepen engagement with existing partners and develop new strategic partnerships.

I thank the Board for its expert guidance in recent years and acknowledge the commitment of the consortium of the Commonwealth and State Treasury departments. We look forward to forging a new growth and direction of the CMD as it continues to advance research in microeconomics and design innovative solutions to policy and market challenges.





ABOUT THE CENTRE FOR MARKET DESIGN

The Centre for Market Design is a research centre that partners with industry, government and university peers to produce leading, innovative economic research.

The Centre for Market Design, established in 2012, focuses on delivering value to the community and is hosted by the University of Melbourne's Department of Economics.

In its third phase of operation, 2018 to 2022, following the completion of the previous funding agreements, the CMD will strive to build upon its exceptional progress across its core operational areas: fundamental and applied microeconomic research, building economic capability, and informing policy and engagement.

Our Vision

To be recognised nationally and internationally as a leading centre for fundamental and applied microeconomic research. We will use our research as the foundation to build economic capability via education programs and collaborate with government and industry to design innovative solutions to policy and market challenges.

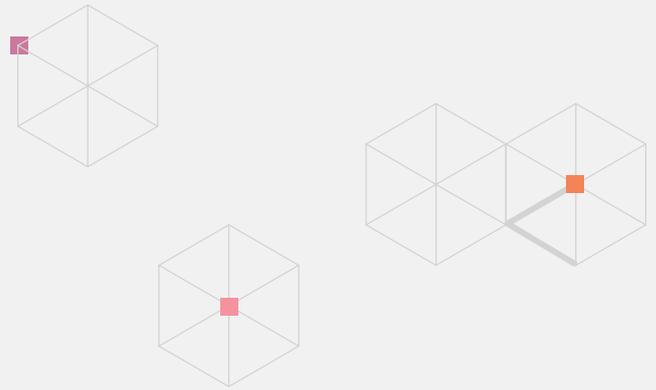
Our Mission

Our Mission to *produce leading, innovative economic research to deliver value to the community* is carried out through the following core activities:

- » An integrated research and research training program;
- » A suite of executive development programs and seminars for economists, government and industry to develop capability;
- » Collaboration with multiple and diverse government and industry partners;
- » Public policy fora and providing an interactive discussion platform, together with our strategic partners.

BOARD MEMBERS

as at 30 June, 2018



Founding Members



Professor Paul Kofman (Chair)
University of Melbourne



Mr Nigel Ray
Commonwealth Treasury

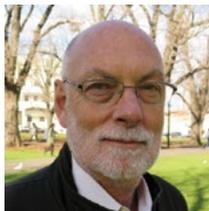


Mr Mark Rodrigues
Victorian Department of Treasury and Finance

Extended Board



Professor Simon Loertscher
University of Melbourne



Professor Peter Bardsley
University of Melbourne



Professor Juan Carlos Carbajal
UNSW Australia



Professor Deborah Cobb-Clark
University of Sydney



Professor Stephen Hanly
Macquarie University

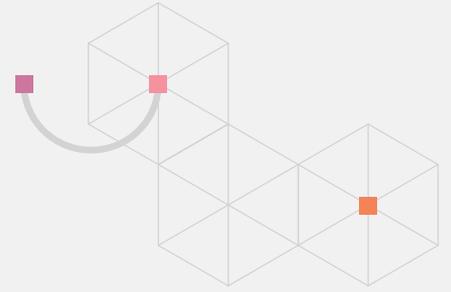


Professor Stephen King
Monash University



Professor Leslie Marx
Duke University

OUR TEAM



The Centre for Market Design team is an exceptional group of economists and professionals united in the optimism of making an impact in the community.

Professor Simon Loertscher
Director

Professor Steven Williams
Director - Research

Associate Professor David Byrne
Director - Capability Building

Mr Gary Stoneham
Director - Policy



CMD Directors L-R - Mr. Gary Stoneham, Professor Steven Williams, Professor Simon Loertscher and Associate Professor David Byrne.



HIGHLIGHTS

2018

Hosted the Asia Pacific Industrial Organization Conference

Partnered with Jemena and the Victorian Government to conduct Power Changers trial to incentivise householders to reduce power use

Teamed with Harvard Business School and the McDonough School of Business at Georgetown to develop the Marketplaces Design and Analytics Workshop

Partnered with the California Institute of Technology to reform travel services to students attending the Northern School for Autism in Melbourne

Commenced a pilot study for the Australian Government Department of Agriculture and Water Resources in Biosecurity Risk Insurance



CAPABILITY BUILDING

Associate Professor David Byrne
Director – Capability Building

Marketplaces Design and Analytics Workshop

Associate Professor David Byrne and Dr Alex Nichifor developed an industry-targeted training workshop focused on market design and the empirical analysis of markets. To develop the course, they teamed with Associate Professor Scott Kominers from Harvard Business School and Associate Professor Nate Miller from the McDonough School of Business at Georgetown. This resulted in world-class teaching expertise from leading business schools.

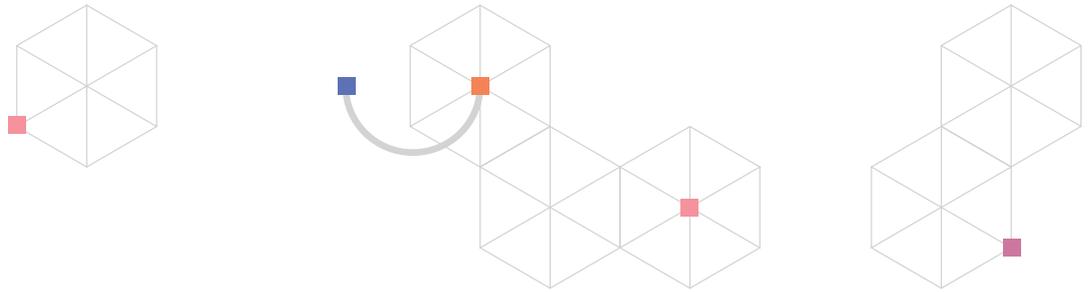
In developing the workshop, the CMD forged new relationships in-house with the Faculty of Business and Economics and the Melbourne School of Professional and Continuing Education to understand the University's capability to market new industry-based training courses, and to attract course participants.

The workshop represents an important pilot course for developing the Specialist Certificate in Economic Design – Industry, with new content developed around market design and analytics.

Power Changers

In 2018, the CMD was instrumental in the design and evaluation of a Power Changers large scale randomised controlled trial at Victorian energy distributor Jemena. The project won Digital Utility Innovation of the Year, was runner-up in Energy Network Australia's 2018 Innovation Award and is one of two international finalists in the Edison Electric Institute Award for leadership and innovation. The team looked at ways to use smart meter data to incentivise households to cut power use during peak periods to help create energy grid stability.

It was designed to create behavioural change to reduce the cost of running the energy grid as governments transition to a low-carbon grid in the long run. More than 600 households in Alphington, Craigieburn, Eaglemont, Ivanhoe and Ivanhoe East registered in the four-month trial, to reduce their electricity consumption during peak times on very hot days. The trial showed average peak electricity consumption on hot days down between 23 and 35 per cent.



CMD Public Seminar Series

Researchers from the CMD have been involved in public lectures aimed to translate frontier economic research for public discussion.

These included:

- » Retail Electricity Pricing in Australia
- » Nuclear Power in Australia
- » Future of Road Pricing in Australia

These lectures help build capability and awareness in the community about the University's economic research and help enable the CMD affiliates to partner with other organizations such as the Melbourne Energy Institute or the Grattan Institute, to run such events. They also help build the CMD profile within the University.

Lunchtime Q&A

The CMD hosted a lunch Questions & Answers session with two keynotes from the 2018 Asia Pacific Industrial Organization Conference (APIOC), Professor Liran Einav (Stanford) and Professor Volker Nocke (Mannheim), who hold senior editorial positions at journals such as the *American Economic Review*, *Journal of Economic Theory* and the *RAND Journal of Economics*. The session had more than 30 faculty and PhD students from the economics department attending and well exceeded the 60-minute scheduled time block. The free-flowing forum enabled academics to ask editors about the current state of the publication process within economics, and as such, represented a unique capability building opportunity for faculty and PhD students.

Asia Pacific Industrial Organization Conference (APIOC)

Between December 13-15, the CMD hosted more than 100 economists who research or practice, industrial organization (IO), which is the study of market power. Researchers came from the Asia-Pacific region, with 17 global speakers.

The CMD attracted major sponsorship from economic consultancies such as Bates White, Frontier Economics, and RBB Economics, and had numerous policy-based IO economists from the Australian Competition and Consumer Commission (ACCC) and the Productivity Commission participate and witness state-of-the-art IO research.

We had a 90-minute policy roundtable session entitled Market Power and Digital Platforms, in response to the ACCC's Digital Platforms Inquiry into Google and Facebook.

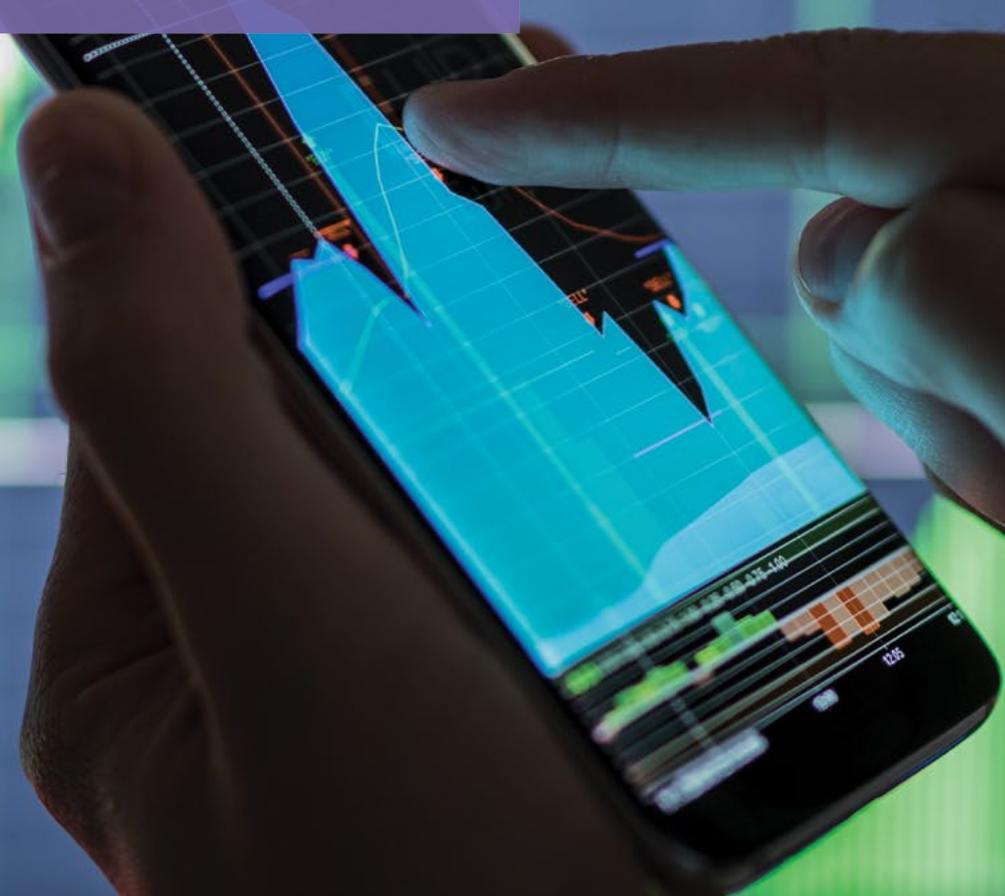
This roundtable represented direct engagement with CMD researchers into a live policy space with economists on the ground working on policy reform.

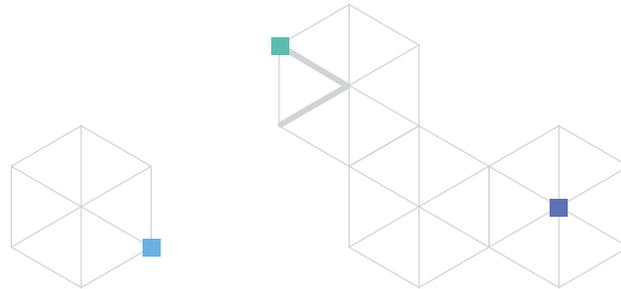
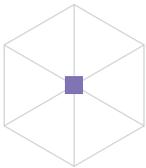
The APIOC was an important initiative for providing training to Australian-based economists in industry and government, and for creating a platform to discuss economic problems facing society. The APIOC represents an important capability initiative from 2018 that will continue to grow as it moves to Tokyo and Singapore in coming years.



FUNDAMENTAL RESEARCH

Professor Steven Williams
Director - Research





Publications

CMD affiliates had another successful year in publishing research. As a group, we published in 2018 articles in leading outlets such as the *Review of Economics and Statistics*, the *Harvard Business Review*, *Games and Economic Behavior*, the *Journal of Public Economics*, the *Journal of the European Economic Association*, and others. Additionally, the CMD affiliates have papers forthcoming in 2019 in the *American Economic Review*, the *Journal of Political Economy*, the *American Economic Journal: Microeconomics*, the *Review of Industrial Organization* and the *Journal of Economic Theory*.

See Appendix I for full details of publications for 2018.

Grants

CMD affiliate Dr Maria Recalde received a Discovery Early Career Research Award (DECRA) from the Australian Research Council (ARC), valued at approximately \$400,000 for the period 2019-2023. This is a prestigious research fellowship for early career researchers in Australia and provides Dr Recalde with the resources and time to intensively develop her research agenda in experimental and behavioural economics. Dr Recalde joins CMD affiliate Dr Alex Nichifor, who holds a DECRA, and former CMD affiliate, Dr Tim Moore, who also received a DECRA. Additionally, CMD affiliate,

Professor Tom Wilkening received an ARC Discovery Grant of \$174,000 in support of his research in mechanism design, experimental economics, and organizations.

Visitors, Workshops and Events

The CMD continues to have an active international visitor program. In the past year we hosted various high-profile international scholars including Professor Peter Cramton (Cologne and Maryland), Associate Professor Scott Kominers (Harvard), Professor Lise Vesterlund (Pittsburg), and Professor Vijay Krishna (Penn State). The visits of Professor Vesterlund and Professor Kominers were funded by the Eminent Research Scholar Scheme from the University of Melbourne, obtained respectively through the efforts of CMD affiliates Dr Maria Recalde and Dr Alex Nichifor. During their visits, Dr Vesterlund was the keynote speaker at the "Gender, Norms, and Economics Workshop 2018", co-organized by CMD affiliates Dr Maria Recalde and Dr Victoria Baranov, while Dr Kominers served as co-instructor with Dr Alex Nichifor in a CMD certificate program for business executives.

Through the leadership of CMD Director, Associate Professor David Byrne, the CMD also organized and co-sponsored the Asia-Pacific Industrial Organization Society's 2018 annual meeting. The conference and

society were initiated by CMD affiliates in 2016. Invited speakers included Professor Volker Nocke (Mannheim), Professor Liran Einav (Stanford), Professor Claudio Mezzetti (Queensland), Professor John Asker (UCLA) and Professor Steven Tadelis (Berkeley).

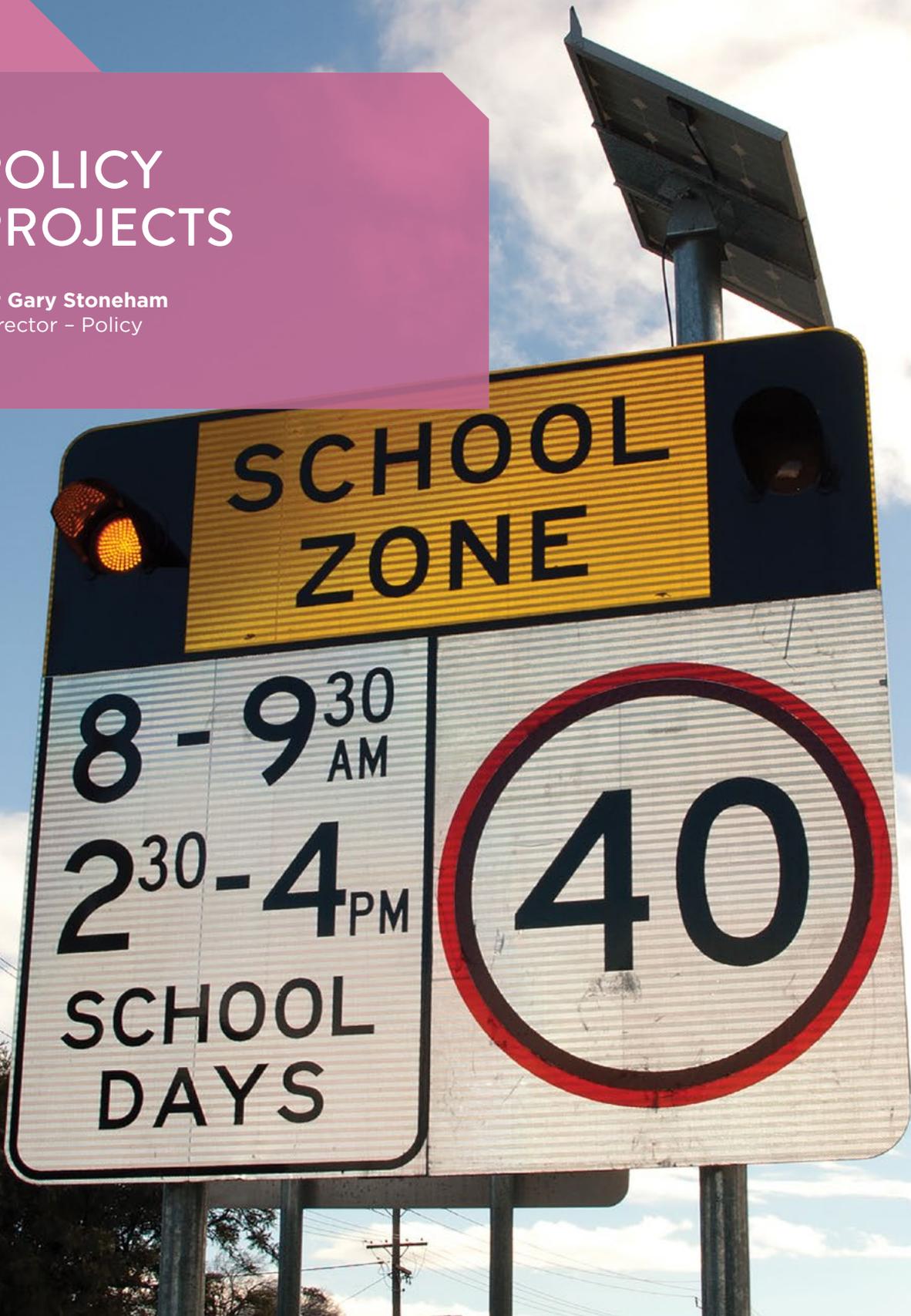
Recruitment

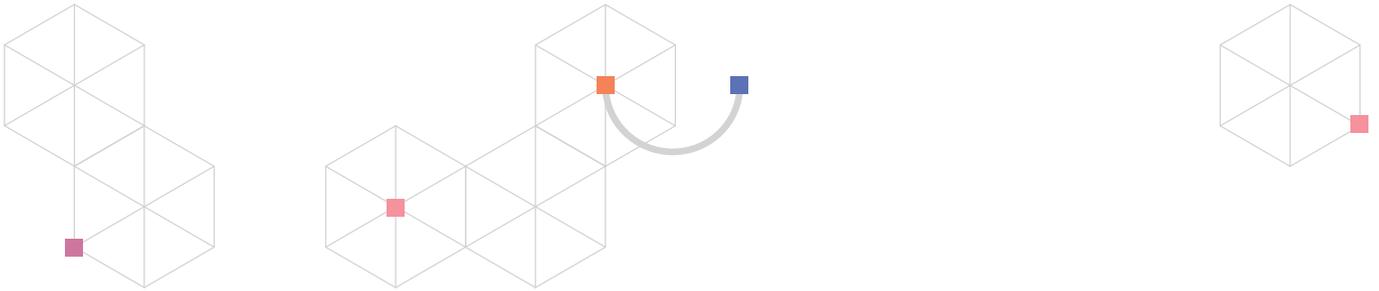
In late 2018, the CMD started the process of recruiting up to three postdoctoral fellows, each of whom may serve at the CMD for up to three years. Interest in the program is high with over 140 applications received, mainly from students who are completing doctoral studies at universities in North America and in Europe. We have two goals with the post-doctoral program: (i) expanding our research pool will enable us to take on applied projects; (ii) the post-doctoral fellows will develop their own research agendas in collaboration with our affiliates, thereby expanding both the scope of our research and facilitating their growth as researchers. We will report on the progress of this initiative in the next annual report.



POLICY PROJECTS

Mr Gary Stoneham
Director - Policy





Disability services

The CMD, in partnership with the California Institute of Technology was engaged by the Victorian Department of Education and Training to reform travel services provided to students attending the Northern School for Autism (NSA) in Melbourne. The pilot was motivated by demands from parents and school staff to improve the current service to: reduce travel time on buses; remove the need for multiple-leg routes; and ensure timely arrival of services. The CMD formulated a mechanism in which new travel service specifications were developed, new bus routes created, and an auction was designed to allocate routes to private transport operators. Three key outcomes were achieved from this pilot.

» Improved travel services for students attending the NSA

Computational techniques were developed to define bus routes that conform with the new travel service specification. The improvements include: a significant reduction in travel times (the maximum travel time for all students was reduced from 2 hours to 1 hour, the average travel times for continuing students is estimated to be reduced from 66 minutes to around 29 minutes); single-leg travel service (all students travel directly to the senior campus of the NSA, avoiding the double-leg experienced under the previous service); and an increase in education time by around 200 hours per student per year because of timely arrival of buses at school.

» Cost-effective travel services were procured

An open, simultaneous, multi-unit, descending auction was designed to allocate the defined routes to private transport operators. Despite a thin market (or a small number of buyers and sellers), the auction stimulated aggressive competition for routes. It achieved contract prices that are revealed from the “market” rather than through a negotiation process. The significant improvement in service quality was achieved at prices that are not significantly different to existing contracts. The auction revealed prices that fairly reward commercial operators according to the characteristics of each route.

» Efficient allocation of transport routes

Analysis of auction data suggests that bidding behaviour was consistent with economic theory and mimicked patterns of strategic behavior observed from laboratory sessions where outcomes are known to be efficient.

This policy project demonstrated a practical application of economic theory in the human services domain. It is an example of how fit-for-purpose mechanisms can make a material difference to the quality and cost-effectiveness of services provided by government.

Biosecurity risk insurance

The CMD developed a policy project in 2018 to examine the feasibility and impact of creating a biosecurity risk market as an alternative to the current

regulation-based model to manage Australia’s exposure to imported pest and disease threats. The project is funded by the Australian Government and is being completed in partnership with the Centre for Actuarial Studies at the University of Melbourne and the Centre of Excellence for Biosecurity Risk Assessment. Following the development of an actuarial biosecurity risk insurance model, a field pilot has been proposed to determine whether the theoretical information and incentive benefits translate to the real-world.

Youth Justice

The CMD is in the final stages of reporting on a joint field experiment to evaluate the effectiveness of a range of non-custodial interventions being piloted for young offenders in Victoria. The incidence and management of criminal offences by young people is a pressing problem for most governments. The CMD in partnership with Court Services Victoria, the Children’s Court of Victoria, RMIT University and the Department of Justice and Regulation have systematically recorded recidivism rates for different interventions over the past two years and have completed over 450 interviews with young offenders appearing in court. Data analysis will help determine the types of interventions that influence rates of recidivism and the longer-term costs and benefits of diversion programs.

FINANCIAL STATEMENT

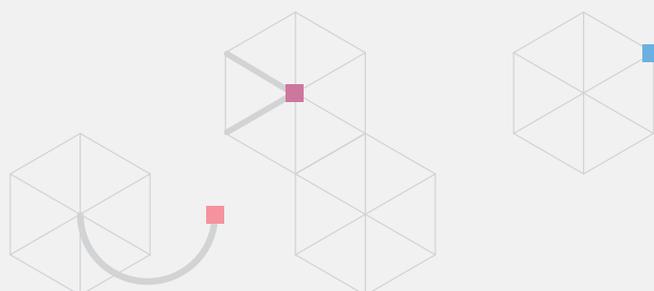
January - December 2018



GRANT FUNDING	\$ (EXCL. GST)
INCOME	
Grants received from Department of Treasury - Commonwealth	-129,583.00
Grants received from Department of Treasury & Finance - Victoria	-49,743.00
Consultancy Projects	872,054.00
Interest Earned	377.00
University Contribution	302,425.00
Total Income for the reporting period	995,530.00
EXPENDITURE	
Fundamental research: academic positions and expert services	487,569.00
Fundamental research: support for workshops and visitor program	41,773.00
Fundamental research: other research support	1,154.00
Policy projects: contracted services	216,006.00
Policy projects: other project costs	92,622.00
Building capability: executive education teaching costs	49,346.00
Building capability: visitors, scholarships and position support	120,728.00
Governance and management: administration salaries	243,575.00
Governance and management: supplies & admin. costs	40,024.00
Total Expenditure for the reporting period	1,292,797.00
Surplus/(Deficit) Balance for the reporting period	-297,268.00
Surplus / (Deficit) from previous reporting period	1,999,356.00
Centre for Market Design balance as at 31 December 2018	1,702,089.00

RESEARCH OUTPUT

Appendix I – Journal Articles
CMD Staff and Affiliates
2018



- Baranov, V.**, Kohler, H-P. 2018. The Impact of AIDS Treatment on Savings and Human Capital Investment in Malawi. *American Economic Journal: Applied Economics*. 10(1). 266-306.
- Byrne, D.P.**, Nah, J.S, Xue, P. 2018. Australia Has the World's Best Petrol Price Data: FuelWatch and FuelCheck. *Australian Economic Review*. 51
- Byrne, D.P., La Nauze, A., Martin, L.** 2018. Tell Me Something I Don't Already Know: Informedness and the Impact of Information Programs. *The Review of Economics and Statistics*. 100.
- Chan, M.**, Kwok, S. 2018. Connecting the markets? Recent evidence on China's capital account liberalization. *Economic Modelling*. 70.
- Chan, M.**, Liu, K. 2018. Life-cycle and intergenerational effects of child care reforms. *Quantitative Economics*. 9 (2).
- Chan, M.** 2018. Measuring the Effects of Welfare Time Limits. *Journal of Human Resources*. 53(1).
- Chan, M.**, Zeng, G. 2018. Unintended consequences of supply-side cost control? Evidence from China's new cooperative medical scheme. *Journal of Health Economics*. 61.
- Aghion, P., **Chan, M.**, Moffitt, R., Rey, H. 2018. Welfare Reform and the Labor Market. *Annual Review of Economics*. 10.
- Coulomb R.**, Henriet, F. 2018. The Grey Paradox: How fossil-fuels owners can benefit from carbon taxation. *Journal of Environmental Economics and Management*. 87(c), 206-223.
- de Fontenay, C.** 2018. Is microfinance raising village income? The issue of excess entry. *Economics Letters*. 165. 17-20.
- Erkal, N.**, Gangadharan, L., Han Koh, B. 2018. Monetary and non-monetary incentives in real-effort tournaments. *European Economic Review*. 101, 528-545.
- Pan, S.** 2018. Exploding offers and unravelling in two-sided matching markets. *International Journal of Game Theory*. 47(1).
- Gong, Q., **Pan, S.**, Yang, H. 2018. Targeted Advertising on Competing Platforms. *The BE. Journal of Theoretical Economics*.
- Pan, S.** 2018. The instability of matching with overconfident agents. *Games and Economic Behavior*.
- Recalde, M.**, Riedl, A., Vesterlund, L. 2018. Error-prone inference from response time: The case of intuitive generosity in public-good games. *Journal of Public Economics*. 160.
- Burfurd, I., Wilkening, T.** 2018. Experimental guidance for eliciting beliefs with the Stochastic Becker-DeGroot-Marschak mechanism. *Journal of the Economic Science Association*. 4(1).
- Aghion, P., Fehr, E., Holden, R., **Wilkening, T.** 2018. The Role of Bounded Rationality and Imperfect Information in Subgame Perfect Implementation-An Empirical Investigation. *Journal of the European Economic Association*. 16 (1). 232-274.
- Xiao, J.** 2018. All-pay contests with performance spillovers. *Mathematical Social Sciences*. 92.
- Xiao, J.** 2018. Equilibrium analysis of the all-pay contest with two nonidentical prizes: Complete results. *Journal of Mathematical Economics*. 74.



Contact us

Centre for Market Design

The University of Melbourne
Level 4, 111 Barry Street
Carlton Victoria 3010
Australia

T: + 61 3 8344 8805

E: enquiries@cmd.org.au

cmd.org.au

ABN 84 002 705 224

© The University of Melbourne

Enquiries regarding this publication should be made through the Centre for Market Design.

Views expressed are not necessarily endorsed or approved by The University of Melbourne. The information in this publication was correct at the time of printing. The University reserves the right to make changes as appropriate.

Photo credits:
iStock by Getty Images on pages
01, 02-03, 05, 10, 16.



cmd CENTRE FOR
MARKET DESIGN