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| <b>Institution:</b> University of East Anglia   |                                  |  |
| <b>Unit of Assessment:</b> 16 – Economics and Econometrics  |                                  |  |
| <b>Title of case study:</b> Helping Competition Authorities encourage growth and prosperity by targeted evaluation of the state of competition and success of their policies  |                                  |  |
| <b>Period when the underpinning research was undertaken:</b> 1.1.2000- 31.12.2020   |                                  |  |
| <b>Details of staff conducting the underpinning research from the submitting unit:</b>  |                                  |  |
| <b>Name(s):</b>   | <b>Role(s) (e.g. job title):</b> | <b>Period(s) employed by submitting HEI:</b> |
| Stephen Davies  | Professor of Economics           | 1980 - to present                            |
| <b>Period when the claimed impact occurred:</b> 1.8.2013 - 31.12.2020   |                                  |  |
| <b>Is this case study continued from a case study submitted in 2014?</b> No   |                                  |  |
| <b>1. Summary of the impact</b>   |                                  |  |
| <p>Competition among firms is a key driver of economic growth and greater prosperity. For its full potential to be unlocked, those in charge of agencies charged with market regulation need a clear understanding of how competition works in practice, and how best to monitor and measure the impacts of their policies. Historically, competition authorities (CA) in the UK and internationally have struggled to achieve that. UEA research, conducted by Davies, has given them an empirical basis and methodology to help them function more effectively, not least by enabling CAs around the world to evaluate the results of their policies, and then set priorities accordingly. This includes strengthening their approach to the hitherto often overlooked role of deterrence. UEA research provides crucial evidence to remind policymakers, in their allocation decisions, that good policy should discourage firms from behaving anti-competitively as well as penalising them if they do.</p>   |                                  |  |
| <b>2. Underpinning research</b>   |                                  |  |
| <p>Competition can be an elusive concept, and identifying the precise effects of any one policy intervention (e.g. prohibiting an anticompetitive practice or merger) requires a workable methodology that can isolate its effects from the multitude of other unrelated factors which will have a bearing in dynamic and unpredictable real-world markets. Those charged with setting and implementing competition policy face complex conceptual, methodological and operational challenges. For instance, arguably the most important effect of any competition policy is its success in deterring firms from behaving anti-competitively in the first instance. But, how can policymakers make firm judgements based on the measurement of events that did not happen?</p> <p>Davies' contribution to tackling these problems dates back to two publications in 2002 and 2004, in which he showed how the academic literature could be used to (i) assess the state of, and benefits from, competition in specific markets [R1], and to (ii) construct a methodology with which to evaluate the overall impact of competition policy [R2]. Then, more recently, with co-authors, he made two novel contributions to the sparse literature on deterrence and showed how this could be quantified in order to inform decisions to allocate resources within CAs [R5], [R6].</p> <p><b><i>Providing a Framework for the Evaluation of Competition Policy</i></b></p> <p>At the time when Davies was publishing [R1] and [R2], there was a growing imperative on the Office of Fair Trading (OFT), the main UK CA at that time, to justify and quantify the benefits to consumers from competition policy. HM Treasury was then setting out new targets, requiring that OFT should produce benefits for UK consumers which could be quantified to be worth 10 times as much as the OFT's cost to the exchequer.</p> <p>These ambitious new targets were introduced when there was no available methodology, either in the academic literature or in use by CAs elsewhere in the world, to quantify regulation impacts that precisely. Using the results of his own research and of others in the field of industrial organisation, Davies constructed the architecture for such a methodology, which could be applied to the various domains of competition policy, including anti-competitive mergers, cartels, excessive and exclusionary pricing. This was subsequently fleshed out and operationalised, under Davies' guidance, in OFT's annual published Positive Impact Evaluation. To this day, this</p> |                                  |  |

publication remains a cornerstone of the evaluation methodology used by the Competition and Markets Authority (CMA, the successor to OFT).

Two subsequent publications in 2012/2013 further widened the practical applicability of this work [R3], [R4]. First, Davies provided a critical review of the various techniques that could be used to quantify policy impact, and illustrated the circumstances when each was, or was not, fit for purpose. Then he constructed a stripped-down methodology, suitable for evaluating policy impact in countries less well-resourced and operating under strict time constraints.

#### ***Providing Methodologies for Quantifying the Deterrent Effect***

Although deterrence is probably the most important positive impact of competition law and policy is widely acknowledged, it is manifestly difficult to quantify. Using theoretical and empirical evidence from existing literatures, Davies and co-authors showed which type of cartels are most likely to be deterred: typically, it is the “extreme” cases, i.e. either those cartels with the greatest potential to raise price or those imposing very little potential harm on consumers [R5]. This is relevant to CAs in helping them determine where to concentrate their market surveillance. Davies et al also developed a conceptual framework, which identified the sort of information necessary for quantifying the overall benefits to consumers from successful deterrence [R6]. This was illustrated and calibrated by using evidence from legal cartels to approximate what would be observed without policy. The likely magnitudes are striking. UEA research found that, for every GBP1.00 of harm detected and removed by the CAs, there is at least seven times as much not observed because it has been deterred [R6]. This magnitude of multiplier strongly suggests that the benefits from active competition policy are far greater than is imputed by simply adding up the benefits from those cases that are detected and prosecuted.

#### ***Enabling Policymakers to Assess the State of Competition***

Within the last five years, alarm has been growing about an apparent growth of market power, in the form of monopolies or oligopolies, in the USA, and further throughout the Western world. Important contributions have been made by leading economists from macroeconomics, labour economics and development economics, working outside the traditional relatively narrow area of industrial organisation and competition economics. However, much of this work is contested because of its over-reliance on static structural measures of the concentration of market shares in the largest firms, such as the Hirschman-Herfindahl index (HHI), and crude accounting proxies for price-cost margins. These measures fail to capture the dynamic nature of competition and are open to alternative conflicting interpretations.

This has therefore raised once more the fundamental underlying issue, which also underpins the policy evaluation project: how to assess the state of competition in specific markets and the economy as a whole? UEA research by Davies et al had provided convincing case study evidence that competition is multifaceted and dynamic and is poorly captured by static concentration measures such as the HHI [R1]. In his early work in industrial organisation, Davies had also canvassed for more dynamic measures of concentration which better represent the cut and thrust of competition. More recently, another major result from his research suggests that, in spite of all the successes of policy in detecting and deterring harmful market power, there remains many cases which are not detected: there is more harm that goes undetected than is detected [R6].

### **3. References to the research**

UEA researchers in bold.

R.1 The Benefits from Competition: some illustrative UK cases

**Davies, S.**, Coles, H., Olzcak, M., Wilson, C, Pike, C.

*DTI Economics Paper No. 9, (DTI was the forerunner of BEIS), 2004.* Held on file at UEA.

R.2 The Development of Targets for Consumer Savings Arising from Competition Policy

**Davies, S.**, Majumdar, A.

*OFT Economic Discussion Paper No. 386, 2002.* Held on file at UEA.

R.3 A comparative assessment of methodologies used to evaluate competition policy

**Davies, S., Ormosi, P.**

*Journal of Competition Law and Economics, 2012, 8(4).* DOI: 10.1093/joclec/nhs025

## R.4 Assessment of the impact of competition Authorities' Activities

**Davies, S.***OECD Working Party No. 2 on Competition and Regulation*, Paris, **2013**. Held on file at UEA.

## R.5 Does enforcement deter cartels? A tale of two tails

**Davies, S.**, Bos, I., Harrington, J., and **Ormosi, P.L.***International Journal of Industrial Organization*, **2018**, 59, 372-405.

DOI: 10.1016/j.ijindorg.2018.04.005

## R.6 Quantifying the deterrent effect of anti-cartel enforcement

**Davies, S.**, **Mariuzzo, F.** and **Ormosi, P.L.***Economic Inquiry*, **2018**, 56 (4), 1933-1949. DOI: 10.1111/ecin.12574**Grants:**Project: Centre for Competition Policy. PIs: **Waddams, C.**, **Davies, S.**, **Hviid, M.** & **Lyons, B.**  
Funder: ESRC. Grant value: GBP3,110,099. Dates: 2004-09Project: CCP Centre for Competition Policy Phase 2. PIs: **Waddams, C.**, **Hviid, M.**, **Davies, S.**,  
**Harker, M.**, **Kassim, H.**, **Lyons, B.**

Funder: ESRC. Grant value: GBP4,552,018. Dates: 2009-14

**4. Details of the impact**

By 2013, Davies had established a reputation for his work on the evaluation of competition policy, and since 2013 his research has resulted in changes in the conduct and practices of many national and international agencies and government departments, in the UK and internationally. Much of this work and its impact has benefited from Davies' close collaboration with Ormosi, also from UEA.

**Wider Applications of the Policy Evaluation Framework: International Agencies**

The broad objective of the Organisation for Economic Co-operation and Development (OECD), is to help shape and diffuse, worldwide, evidence-based standards for improving economic performance. With the appearance of (the working paper version of) [R3], the Competition Division of the OECD decided to devote substantial resources to a strategic project assembling a best practice guide on evaluation of competition policy for its member and non-member countries. As [redacted] Head of the OECD Competition Division at the time, stated:

*"I discussed with the Committee a changed approach, under which we would focus our work for the next three years at least on no more than two 'strategic themes'. To obtain this agreement, I needed to motivate the Committee and to provide some ideas for outputs, and a project plan. One of the areas we thought to develop was measuring the impact of competition policy... [and] Davies and Ormosi's working paper "The Impact of Competition Policy: What are the Known Unknowns?" – [was] as its title suggests... perfectly suited to our needs. [...] As a result of this work, the Committee endorsed our proposal to devote about one quarter of its time to this topic..." [S.1].*

A central output of this programme was a Guide for National Competition Authorities [S.2] which closely follows the recommendations (and often wording) of [R4]. This exposure of UEA research generated further impacts on the practice of national CAs in a number of OECD member countries. Two examples in which this is publicly acknowledged, are:

**Spain:**

*"We have found the works of Professor Stephen Davies and Dr Peter Ormosi, and especially their publication...[R3] ...very useful in constructing these guidelines. Most specifically, we greatly benefited from their research, which also inspired the recommendations they made to the OECD... subsequently made part of the final OECD Impact Assessment Guide."*

( [redacted] Head of Cabinet and Chief Economic-Advisor of the President, Comisión Nacional de los Mercados la Competencia [S.3])

**And Hungary:**

*"...the works of Dr Ormosi and Professor Davies...have proven to be highly practitioner friendly for us, and... had significant and positive impact on the ex-ante impact assessment"*

*project of the GVH.*" (██████████ Chief Economist, Gazdasági Versenyhivatal (Hungarian Competition Authority [S.4]))

UEA's research was picked up by the World Bank in 2014, who invited Davies and Ormosi to develop an impact evaluation framework for the Competition Authority of Kenya. This was a perfect opportunity to directly disseminate their methodologies to enhance decision-making of stakeholders, and introducing advocacy of competition, in the developing world. As ██████████ (Global Competition Lead, Trade and Competitiveness, World Bank Group) writes: as a result of UEA's research,

*"...the CAK [Competition Authority of Kenya] is on course to adopt and systematically use the designed frameworks", and "... [their work] will contribute to the development of M&E [monitoring and evaluation] and evaluation frameworks for other competition authorities in the region and beyond."* [S.5]

The United Nations Conference on Trade and Development (UNCTAD) subsequently commissioned them to produce a similar report [S5].

### **Deepening CMA understanding on Deterrence and its Wider Impact**

Following the working paper versions of [R5] and [R6], Davies and Ormosi were invited to participate in a CMA workshop, in February 2016, dedicated to discussing how far their work could be implemented to estimate the deterrent effect of CMA's enforcement activities. In September 2017, the CMA published its own report on deterrence, referencing their work 24 times [S.6]. UEA research helped lead to changes in a number of CMA's working practices. At a high level, it underlines the belief that the savings to consumers from competition policy are far greater than just those identifiable from direct enforcement cases. In terms of setting priorities and resource allocations, these findings have led the CMA (i) not to neglect small cases if they have a potentially high deterrent effect, and (ii) to attach relatively more important weight to the enforcement of cartel law, which has a greater deterrent effect than do other areas of its enforcement. As ██████████ (Chief Economic Adviser, CMA) writes:

*"Historically we have not been able to say much about the deterrent effect of what we do and so have had to concentrate only on the direct measurable impact. This has the effect of skewing our priorities towards merger analysis and market studies and investigations, as these have large direct impacts but low deterrent effects. In this respect we have found the recent work by Davies and Ormosi into measuring deterrent effects extremely useful and timely. I am thinking here particularly of their papers published in the Economic Inquiry and the International Journal of Industrial Organization, which provide novel insights into measuring deterrence. These works, and subsequent discussions with the authors, significantly contributed to "The deterrent effect of competition authorities' work", which the CMA published in 2017. The findings of this research have influenced our work in a variety of ways. For example, it helps remind us not to deprioritise smaller enforcement cases (by demonstrating the important deterrent effect that these cases have, such as our estate agent cartel cases). It substantiates the belief that there is a large deterrent effect of cartel policy and that the positive impact figures for cartels that are detected are a significant underestimate of the overall impact of all our cartel work. In turn, this ensures that we do not concentrate proportionately too many of our resources on merger control and market investigations."* [S.7]

### **Helping Government (BEIS) assess and monitor competition in the UK**

There has been growing awareness across UK Government Departments that the increasing market power observed in the USA might also be occurring in the UK. On the basis of his reputation and work in the area, Davies was invited by the Cabinet Office in February 2018 to make a presentation based on his research to a small group in the Treasury on how to measure the state of competition in the UK. This led to an invitation to a select competition roundtable in early 2019, and then to advise a research team within the Department of Business, Energy and Industrial Strategy (BEIS) during March-June 2019, which was to prepare a paper on, *inter alia*, how to measure competition in the UK. As ██████████ Head of Digital Competition, BEIS, writes:

*"We appointed Steve as our key advisor for this programme of work based on his outstanding knowledge of the subject matter, academic reputation, publication track record and extensive*

*experience advising policymakers domestically and internationally in this field (including the CMA and OECD)” [S.8].*

Many of the ideas in the BEIS paper follow specific advice by Davies, based on his research. These include the urgent need to improve statistical indexes so that they measure the degree of dynamic, rather than static, competition; to avoid the inaccuracies involved in measuring structure at too aggregate a level; and to develop more theoretically-informed indicators of the role of import competition.

*“Steve’s advice concerned the empirical problems created by measures of concentration (which looks at the market share held by the largest firms in a market). For example, concentration measures typically rely on data that does not reflect competition from foreign domiciled firms, a substantial limitation in any modern economy. It also included the more fundamental conceptual issue that static measures of how concentrated a market is do not reflect the ease with which firms can enter, scale up and exit in markets, the true essence of dynamic competition” [S.8].*

As a result of this paper, in February 2020, Secretary of State for BEIS and the Chancellor of Exchequer jointly wrote a letter commissioning the CMA to publish a regular report on the state of competition in the UK [S.9]. As an aid to the CMA on the sort of evidence that was required, their commissioning letter included an annex which critically discusses existing imperfect competition indicators. At the start of this Report there is a single acknowledgement, explaining that the document:

*“...benefited greatly from the advice and peer review of academics at University of East Anglia’s Centre for Competition Policy [CCP]” [S.9].*

The CCP team was largely Davies, with support from Professors Ennis and Fletcher (also at UEA). It is anticipated that the CMA will regularly publish such a report and that Davies will be consulted regularly on its contents:

*“This work will also be used by Ministers to shape the Government’s economic strategy, as we recover from the impacts of covid-19. We would like to thank Steve again for his highly impactful advice on this area of work and very much look forward to continuing to engage with him in the future.” [S.8]*

## **5. Sources to corroborate the impact**

S.1 Endorsement letter from then Head of Competition Division, OECD (25.11.13).

S.2 OECD Guide for helping competition authorities assess the expected impact of their activities, April 2014 which forms part of OECD’s report on the evaluation programme. Both accessed on 27/10/2020.

S.3 (a) Testimonial from Spanish Competition Authority (CNMC), (13.4.20); (b) CNMC report on estimating the impact of competition enforcement, 2017 (accessed 27/10/2020).

S.4 (a) Testimonial from Hungarian Competition Authority (15.4.20); (b) Hungarian Competition Authority impact report (accessed 27/10/2020).

S.5 (a) Testimonial from the Global Competition Policy Lead for Trade and Competitiveness, World Bank (23.4.15); (b) UNCTAD commissioned report (2016): A methodological framework to capture the various economic impacts of competition enforcement, accessed on 27/10/2020.

S.6 CMA report on deterrence (7.9.17), accessed on 27/10/2020.

S.7 Testimonial from Chief Economic Adviser, Competition and Markets Authority (9.4.20).

S.8 Testimonial from the Head of Digital Competition, and the Economic Adviser (Consumer and Competition Policy), BEIS (e-mail confirming testimonial date as 22.5.20).

S.9 Letter from Secretary of State, BEIS, and Chancellor of Exchequer to CMA (5.2.20), and State of competition: Annex 2 – Existing competition indicators report, February 2020.