STUDENT ECONOMIC REVIEW 2022

UNIVERSITY OF DUBLIN
TRINITY COLLEGE

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Prize-Winning Essays of the Student Economic Review 2022

Best Overall Essay: Dermot Mcaleese Medal

The Rent is Too Damn High: Affordability in the Dublin Housing Market

Elana Kiley

Best Applied Economics Essay: John O' Hagan Medal

The Carry Trade and Global Imbalances

Robert Tolan, Jemima Owens, and Vlad-Florian Lica

Best Fresh Essay Prize:

Reinforcement Learning, Cognitive Scarcity and Behavioural Band-Aids

Rachel Kane

Editors and General Managers of the Student Economic Review, 1987-2022

Year	Editor	General Manager
1987 (Vol. I)	John Fingleton	Paddy Waldron
1988 (Vol. II)	Kevin Carey	Finbar McDonnell
1989 (Vol. III)	Johnathan Wright	Joe Denehy
1990 (Vol. IV)	Philip Lane	C. J. O'Neill
1991 (Vol. V)	Paul O'Connell	Billy Stamp
1992 (Vol. VI)	Alan White	Addo C. Barrows III
1993 (Vol. VII)	Gareth Davis	David Butler
1994 (Vol. VIII)	Alan Dunne	Donagh Lynch
1995 (Vol. IX)	Fergal Shortall	Myles H. Clarke
1996 (Vol. X)	Geoffrey Gill	Suzanne O'Neill
1997 (Vol. XI)	Sarah Rowell	Carol Newman
1998 (Vol. XII)	Richard Doyle	Charlotte Hess
1999 (Vol. XIII)	Michael Mc Mahon	Niamh McDonagh
2000 (Vol. XIV)	Ana Carrie	Collette Murphy
2001 (Vol. XV)	Ronan Lyons	Charles Larkin
2002 (Vol. XVI)	Ivan McAdam	Janine Boyd O'Carroll
2003 (Vol. XVII)	Rowena Gray	Elaine Doyle
2004 (Vol. XVIII)	Denis Tkatchenko	Tara McInhoe
2005 (Vol. XIX)	Cormac O'Dea	Paul Sammon
2006 (Vol. XX)	Deirdre Reilly	Melinda Simonffy
2007 (Vol. XXI)	Niamh Crilly	Charlie Nolan
2008 (Vol. XXII)	Nathalie Ennis	Kieran Curtis
2009 (Vol. XXIII)	Jean Acheson	James Walsh
2010 (Vol. XXIV)	Jason Somerville	Amandine Lobelle
2011 (Vol. XXV)	Robert Farhat	Áine Ni Shúilleabháin

Year	Editor	General Manager
2012 (Vol. XXVI)	Tony O'Connor	Debbie Blair
2013 (Vol. XXVII)	Brian Higgins	Marielle Grigsby-Rocca
2014 (Vol. XXVIII)	Féidhlim Mc Gowan	Cián Mc Leod
2015 (Vol. XXIX)	Gearóid Gibbs	Michael Mahony
2016 (Vol. XXX)	Gillian O'Connell	Kate Hayes
2017 (Vol. XXXI)	Míde Ní Ghríofa	Alexandru Radu Puiu
2018 (Vol. XXXII)	Keelan Beirne	Aditya Garg
2019 (Vol. XXXIII)	John (Charlie) Walsh	Luisa Mostarda
2020 (Vol. XXXIV)	Harry Humes	Kevin Loftus
2021 (Vol. XXXV)	Ronan Dunne	Yvonne O'Kiersey
2022 (Vol. XXXVI)	Sarah Clavin	Cian Brennan

Guest Speakers at the Launch of the Student Economic Review, 1990-2022

Year	Speaker	Organisation
1990 (Vol. IV)	Richard Lipsey	Simon Fraser University
1991 (Vol. V)	Charles Goodhart	London School of Economics
1992 (Vol. VI)	Peter Sinclair	Brasenose College, Oxford
1993 (Vol. VII)	David Greenway	Nottingham University
1994 (Vol. VIII)	Hamish Mc Rae	The Independent, London
1995 (Vol. IX)	John Sutton	London School of Economics
1996 (Vol. X)	John Martin	OECD
1997 (Vol. XI)	Alan Tait	IMF
1998 (Vol. XII)	David O'Sullivan	European Commission
1999 (Vol. XIII)	Paula Donovan	World Bank
2000 (Vol. XIV)	Dermot McCarthy	Department of an Taoiseach
2001 (Vol. XV)	Donal Donovan	IMF
2002 (Vol. XVI)	Margaret Doyle	The Economist
2003 (Vol. XVII)	Tomy Healy	Irish Stock Exchange
2004 (Vol. XVIII)	Gerry Foley	ITV PLC.
2005 (Vol. XIX)	John Fingleton	Competition Authority
2006 (Vol. XX)	Marius Brülhart	HEC University of Lausanne
2007 (Vol. XXI)	Cliff Taylor	Sunday Business Post
2008 (Vol. XXII)	Alan Barrett	ESRI
2009 (Vol. XXIII)	Patricia Callan	Small Firms Association
2010 (Vol. XXIV)	Jane Williams	Forfás
2011 (Vol. XXV)	Tom O'Mahony	Department of Transport
2012 (Vol. XXVI)	Kyran McStay	Key Capital Limited
2013 (Vol. XXVII)	Alan Gray	Indecon Economic Group
2014 (Vol. XXVIII)	Anke Heydenreich	Attestor Capital LLP

2015 (Vol. XXIX)	Declan Sheehan	JP Morgan
2016 (Vol. XXX)	Various Speakers	Past Committee Members
2017 (Vol. XXXI)	Kevin O'Rourke	All Souls College, Oxford
2018 (Vol. XXXII)	Liam Delaney	U.C.D.
2019 (Vol. XXXIII)	Carmel Crimmins	Reuters
2019 (Vol. XXXIII)	Seán Barrett	Dáil Éireann
2020 (Vol. XXXIV)	Eithne Fitzgerald	Former Minister of State
2021 (Vol. XXXV)	John Fitzgerald	ESRI
2021 (Vol. XXXV)	David McWilliams	Irish Economist
2022 (Vol. XXXVI)	Andrea Linehan	Currency Fair

Student Economic Review Debates , 1990-2022

Year	Opposition	Topic	Victor
1996	U.C.D.	Third Level Fees	Trinity
1998	U.C.D.	EMU Without Britain	Trinity
1999	Oxford	The Euro: The Way Forward	Oxford
2002	Oxford	Boston or Berlin?	Trinity
2003	Cambridge	The Euro is a Success	Cambridge
2004	U.C.D.	Free Trade and Development	U.C.D.
2005	Oxford	Third World Debt	Trinity
2006	Cambridge	Common Agricultural Policy	Trinity
2007	Oxford	Environmental Responsibility	Trinity
2007	Yale	Boston or Berlin?	Trinity
2008	Harvard	Mass Emigration and Labour	Trinity
2008	Cambridge	Britain's Place in Europe	Cambridge
2009	Yale	Boston or Berlin?	Yale
2009	Oxford	Bank Nationalisation	Trinity
2010	Cambridge	Should Ireland have Joined the Euro?	Trinity
2010	Harvard	The Decline of US Economic Dominance	Harvard
2011	Oxford	Ireland Owes a Debt of Gratitude to Britain	Oxford
2011	Yale	It's all America's Fault	Trinity
2012	Cambridge	Ireland Should Rejoin the Sterling	Trinity
2012	Harvard	The US State Does Not Care for it's Sick	Harvard
2013	Oxford	Deserting the Euro	Trinity
2013	Yale	Tax is Theft	Trinity
2014	Cambridge	United States of Europe?	Cambridge
2014	Harvard	US Education System	Trinity
2015	Oxford	100% Inheritance Tax	Trinity

Year	Opposition	Topic	Victor
2015	Yale	Opening the Mexican Border	Yale
2016	Cambridge	Will the EU Benefit from Brexit?	Cambridge
2016	Harvard	Should we be afraid of Cheap Oil?	Harvard
2017	Oxford	The EU is Unsustainable	Oxford
2017	Yale	Globalisation is Doomed	Yale
2018	Cambridge	Britiain Should Pay Reperation to Former Colonies	Cambridge
2018	Harvard	The American Dream is Dead	Trinity
2018	Oxford	This House would unite Ireland post-Brexit	Yale
2019	Yale	Protectionsim is Failing America	Cambridge
2019	Cambridge	Open All Borders	Cambridge
2021	Oxford	Break-up the UK	Oxford
2021	Yale	Implement Universal Basic Income	Trinity
2022	Cambridge	Derelict Properties Should be Surrenderd to the State	Cambridge
2022	Harvard	Economic Warfare Does More Harm than Good	Harvard

Endorsements

"The Student Economic Review gives many students their first opportunity to publish a piece of academic written work. It thus supports and promotes the rigorous analysis, excellence in learning and persuasion that are essential building blocks for future careers and broader intellectual contribution. The collected contributions, now reaching into a third decade, constitute an elegant contribution to scholarship and erudition of which Trinity College can be proud."

John Fingleton
Trading London
Editor, Ser 1987

"My involvement in the SER was an important defining point in my undergraduate experience at Trinity. It introduced me to the world of academia, the role and importance of academic publishing and the range of questions and depth of research possibilities in the discipline of economics. It has stood the test of time and grows stronger every year attracting the highest calibre of students."

Carol Newman
PhD TCD, Associate Professor TCD
General Manager, 1997 SER

"Ever since leafing through a copy of the SER in my JF year, my ambition to become involved in this prestigious student society could not be curbed. Leading the committee through the year from the first workshop to the launch was an experience dotted along the way with enduring memories. From a three-day discussion about which tablecloth should be used for the workshop, to finally holding a copy of the review at the launch evening. I'm sure our friendships will last as long as the memory of my scrupulous organisation!"

Cián McLeod
Strategic Operations Specialist, Google Ireland
General Manager, SER 2014

Student Economic Review Welcomes

Welcome from the General Manager

On behalf of the committee for the 36th edition, I am delighted to welcome you to the 2022 Trinity Student Economic Review. Ever since its inception in 1987, the entirely student-run Review has served as a platform for Trinity's finest Economics students to showcase the expectational work they have undertaken during the course of their studies. Now more than ever, an outlet that fosters academic excellence and promotes innovative and rigorous research in the discipline of economics is vital. Indeed, for many students, the SER serves as the first opportunity to see the publication of their research. Moreover, for many past contributors to the SER, being published in the Review marked the starting post of prolific careers in the areas of economic research, business and academia. This year, we are sure, is no different.

We have been hugely impressed by the extraordinary quality of this year's contributors and we thank them for the commitment, passion and dedication with which they wrote their essays. There is no doubt in our minds that the remarkable quality of the submissions this year is indicative of an ever-improving Review – a trend we hope will continue for many years to come.

Over the years the SER has broadened its horizons beyond the publication to include events and workshops intended to reflect and build upon the values exhibited in the Review itself. Of these, the international debates held each year with universities across the UK and the US have come to form a fundamental element of the Review.

This year we were delighted to welcome teams from the universities of Cambridge and Harvard for our first in-person debates since the COVID-19 pandemic. In collaboration with the University Philosophical Society and the College Historical Society, the two debates saw the teams battle it out over the pressing subject matters of responsible housing policy and the efficacy of economic warfare. The exceptional standard of the arguments and the exploration of nuanced ideas by individuals from diverse backgrounds are reflective of the values that define the Review.

I would like to say a huge thank you to all of those who helped make the debates as great a success as they were. From our judges who kindly gave their time, to the debaters from Cambridge, Harvard and Trinity. Given the uncertainty that surrounded holding in-person events at the backend of the pandemic, the planning for these debates was not simple. However, thanks to the tireless work by our Debates Manager Odran Farrell and the representatives from the Hist and the Phil, the two events were overwhelming successes.

I must extend my thanks too to our Workshops Manager, Gillian Fritz. In the face of a collective weariness towards Zoom calls Gillian organised a fantastic virtual event for Trinity's Senior Fresh students preparing to sit the Foundation Scholarship Examinations. The workshop saw current Scholars discussing their experience studying and taking the exams whilst providing unique insights for the audience. In Hilary Term the SER saw its first collaborative workshop with The Environmental Society and LawSoc. The panel event which brought together experts from the fields of environmental finance, economics and law saw the discussion of the legal and economic implications of an ever-increasing environmental crisis. A thoroughly important and enjoyable event, I look forward to attending another instalment next year!

Given the tumultuous period of the last two years, the committee this year was determined to oversee a movement back towards the normal, in-person, running of the Review which has served it so well over the past 36 years. This was easier said than done. However, I can safely say that thanks to the boundless commitment and unwavering enthusiasm of this year's committee, the process was a thoroughly enjoyable one. I would like to thank every member of the 2022 committee for the time and effort that have been put into making the Review the success it has been this year.

I must give special thanks to the outstanding work of our Editorial Team of Sarah Clavin, Conor Maher and Conor O'Brien, along with our Production Manager Cian Hennigan without all of whom the 36th edition of the Review would simply not exist. A special thanks too to our Launch Manager Joseph Kilcoyne for your efforts in putting together a fantastic launch as well as to our Finance Manager, Isha Neurgaonkar, for ensuring the cheque book never went out of control!

The Review has also been made possible by the extraordinary generosity of our sponsors who continue to believe in and see the immense value of the SER. We sincerely thank Matheson, our chief sponsors, for coming on board this year as well as the past SER alumni who continue to support the Review after all these years.

Finally, the committee and I must extend our immense thanks to Professors Ronan Lyons, Michael Wycherley and all those in the Economics Department. The SER would cease to be the invaluable resource and opportunity that it is without the strong and consistent commitment from those in the Economics Department. We massively appreciate the endless time and guidance you have given us over the course of this year. I must also give a personal thank-you to the Patrons for allowing me to be General Manager of the Review, an experience I will undoubtedly look back on as a personal highlight of my time at Trinity.

Now, without further ado, I invite you to delve into the 36th edition of the Student Economic Review. We hope the works contained in this journal will inspire you, engage you and enlighten you to questions you never before considered.

Cian Brennan,

General Manager, SER Vol. XXXVI

Letter from the Editor

It is my pleasure to welcome you to the 36th edition of the Student Economic Review. In this edition of the Review, we hope we have provided the students at Trinity College Dublin the opportunity to display their engagement with economics and the high quality of their writing. It is noteworthy that these exceptional students continue to maintain the high standard of the Review despite their extraordinary experience of the university throughout the Covid-19 pandemic.

The Review enables and empowers students to discover and research economics beyond the scope of their courses. This facilitates innovation and independent thinking that benefits students in their future academic pursuits and careers. Many world-renowned economists began their prolific portfolio of published work in the Review. I have no doubts that many of those published in this year's Review will excel into the future in the field of economics. The standard of the essays submitted to the Review this year set a significant challenge for myself and the editorial team to select which authors to publish. I would like to congratulate every student who submitted to the Review this year. While we could not publish every submission, I greatly enjoyed reading the diverse and innovative essays that comprised this year's submission pool. There was vigorous debate amongst the editors while selecting the essays which comprise the 2022 Review. The essays are divided into three categories which are discussed below.

The first section in this edition of the Review is Economic Policy. Many of these essays illustrate topics of great importance to students and the broader economy. The opening essay of this section by Elana Kiley outlines the issues in the Dublin housing market and possible recommendations to improve the market. This detailed topical discussion is the winner of the Best Essay Prize this year. Following on from this, Rocco Balestrieri illustrates the pitfalls of 'institutional monocropping' in the context of international policy. Brian Coady provides an insightful discussion on the introduction of minimum unit pricing policy on alcohol in Ireland. In the context of the changes in healthcare in recent years, Thomas Fleming outlines the existing labour problems in the National Health Service in the UK and provides a detailed analysis of possible solutions. This is followed by a topical outline of the effect of trade wars as an international policy by Cian Hennigan. This section is concluded by Jennifer Waters' in-depth outline of the laissez faire state and the free market in the United States.

The second section is Applied Economics in which students apply economic logic and regression analysis to domestic and international affairs. This section opens with this year's winner of the best applied economics essay, Robert Tolan, Jemima Owens, and Vlad-Florian Lica's discussion of the carry trade and global imbalances. This is followed by this year's winner of the Best Fresher Essay Prize: Rachel Kane, a Senior Fresher, outlines the behavioural economics theory of 'nudge' and how it can be applied to obesity. After this we have Ronan Dunne's difference-in-difference analysis of gun control legislation in the United States. In continuation of the theme of American policy, Thomas Fleming discusses the impact of the Community Advantage Program in North Carolina on black homeownership levels. This section concludes with an analysis of the impact of the removal of quotas on the domestic dairy industry by Robert Tolan.

The final section of the Review this year is European Economics. This category is comprised of two essays. Firstly, Liam Brady describes the impact, both positive and negative, on the Spanish economy of joining the eurozone. In the context of labour markets, Ella Hensey examines unpaid labour as a barrier to the female labour market integrations; she highlights the impact on non-EU female migrants.

The 36th edition of the Review would not be here without the continued exceptional effort and commitment of the entire committee. I would like to take this opportunity to thank my fellow editors, Conor O'Brien and Conor Maher, for their hard work in selecting and editing the essays. Cian Brennan, our General Manager, was infinitely helpful in ensuring that the editorial process ran smoothly. Furthermore, the Review could not have existed without the dedication of our production manager, Cian Hennigan. I would like to give a special word of thanks to Joseph Kilcoyne, our launch manager, for all of his hard work in ensuring the success of our launch event. I have thoroughly enjoyed working with every member of the committee throughout the year. Finally, I would like to thank the Economics Department for their support of this publication. In particular, I would like to give my personal thanks to our patrons, Dr Ronan Lyons and Dr Michael Wycherley, for their support and indispensable guidance throughout the process of publishing this journal.

I now invite you to turn the page and begin reading the exceptional essays that comprise the 2022 Student Economic Review. We hope you enjoy these papers as much as we have.

Sarah Clavin
Editor, SER Vol. XXXVI

SER Debates 2021/22

Since their introduction in 1996, the SER debates have had a long and illustrious history. The SER's U.K. and U.S. debates are a highlight of the academic year and produce interesting, topical, and often contentious conversation around key economic issues. The real highlight of these debates, in my opinion, is how they involve the wider college community in the discussion around these topics. Many of the students who attend these debates have little prior knowledge of the field of economics and therefore, one of my key focal points when organising the two debates, was that they be as accessible, topical, and compelling as possible. This year was a special one, for both the SER as a whole and for the debates in particular, as it is the first time in three years that we have been able to host the debates in person.

There are a number of parties whom I must thank, as without their assistance the debates would not have been possible. Firstly, the entirety of the SER committee; they tirelessly worked alongside me to ensure that everything was organised on time. Next, I have to thank Trinity's two debating societies: the University Philosophical Society and the College Historical Society. They are some of the oldest and best debating societies in the country and they demonstrated this with the class and knowledge they displayed when helping me to organise these two debates. Specifically I would like to thank the Phil's secretary Tom Hegarty, and their President Eleanor Moreland for their assistance in organising the Cambridge debate. For the Harvard debate I wish to thank the Hist's Correspondence Secretary Eva O'Beirne, and their Auditor Maggie Larson. I would also like to thank our Patrons Professor Ronan Lyons and Professor Michael Wycherly for their support and assistance all year with everything related to the SER. Finally, a special thanks goes to Matheson whose financial support allowed these debates to be as successful as they were.

Trinity vs. Cambridge

Thursday, February 3rd, 2022

The first SER debate took place at the beginning of the second term. The motion was "This House would require that any houses or apartments left vacant for six months or more be surrendered to the State". I selected this motion because it is so relevant to life today in both the United Kingdom and Ireland, especially Dublin. We believed that this motion would draw a great crowd as it is so pertinent to student life and we were not wrong. The GMB was packed full of students and college staff alike when the debate kicked off at 7.30.

The Trinity team consisted of Oisin Browne, Martha McKinney-Perry, and Jack Palmer. The Cambridge delegation consisted of Darina Andryichenko, Teodor Grama, and Zahari Nikolaev. The debate was chaired by the President of the Phil Eleanor Moreland and adjudicated by a panel of three judges. The judges for this debate were Assistant Professor of Finance in Queen's University Belfast, Lisa Sheenan, Professor in the School of Architecture, Planning and Environmental Policy in University College Dublin, Brendan Williams, and Business Affairs Correspondent with The Irish Times, Mark Paul.

The Trinity team's argument was made up of three main points: firstly, the impact this new law would have on homelessness, secondly, the refocusing of new housing projects and finally, the resultant increase in housing supply. The argument that this new law would refocus housing projects was that construction companies and investors would stop building projects to hold on to them and would instead be forced to build projects with immediate need, or else risk losing all of their investment. Their other main point was that the seized property would be returned to the market or put to good use by the government. Either way it will cause rent rates to fall in the area as supply has increased.

The Cambridge team's speech was centred around applying real-world logic to this rather outlandish motion. They argued that while in theory this motion and the results of its implementation sound wonderful, in reality it causes far more issues than it solves. Firstly, they argued that in the long term it would actually reduce housing supply as fewer people and institutions would be willing to invest in property when there is an incredibly high chance of all that investment being lost. Secondly, they argued that this is not really a practical solution to the issues surrounding housing and homelessness as the number of people moving to urban centres is increasing rapidly while the amount of vacant property in these areas is negligible in comparison. Finally, they argued that the vast majority of housing left unused is unfit for purpose due to being in poor condition or undesirable areas and, therefore, this law would not even increase housing supply in the short term.

With both sides having presented very strong arguments, the panel of judges left the chamber to decide on both the winning team and best speaker. Students were free to chat and mingle while we awaited the result. The judges returned and Mark Paul explained that while both sides presented strong arguments, the Cambridge side had presented a more realistic view of the world than that of Trinity and that they had, therefore, won the debate. However, Trinity's Jack Palmer was presented with the best speaker medal.

Trinity vs. Harvard

Wednesday, March 16th, 2022

The Harvard debaters arrived in Dublin on the evening of the 16th of March. The city was bustling as it prepared for the first in person Saint Patrick's day in three years. The debate took place the following evening as a thought provoking preamble to a long celebratory weekend. The motion I chose for this debate was "This House believes that economic warfare does more harm than good". This motion was chosen due to its topical nature as well as economic warfare being such an interesting part of the subject. As the war in Ukraine continued to escalate and an increasing number of sanctions were applied to Russia by the West, interest in this motion continued to rise until the night of the debate. This resulted in a bustling GMB, full of excited Trinity students.

The Trinity team was captained by Caoimhín Hamill, an SER debating veteran having debated in both the 2018 and 2019 debates. He was joined by Molly Carroll, Anna Kollar, and Sinziana Stanciu. On the Harvard side, we had Rasmee Ky, Maya Razmi, Delaney Hurley, and Matej Cerman. The debate was chaired and judged by Sharon Donnery (Deputy Governor of the Irish Central Bank). Sharon was joined in her judicial duties by former President of the SER and current Professor Emeritus at Trinity College Dublin, Professor John O'Hagan.

The Trinity team's speeches covered a lot of ground around this topic, including the history of economic warfare, its use in practice, and how successful it has been in the past. They pointed numerous times to a study done by the University of Chicago which found that only 5 out of 115 cases where economic warfare was employed, was it a determining factor in the resolution of that conflict. They also illustrated numerous examples where military intervention resulted in a quick conclusion to international conflicts and they argued that economic warfare has not proven successful in the past. The Trinity team also argued that not only does economic warfare hurt the most vulnerable in these states, it can also result in regimes growing worse and a further weakening of diplomatic ties.

The Harvard side's main points were that economic warfare forces regimes to come to the table to allow diplomacy to take place, and that economic warfare is automatically superior as the alternative is military warfare. Their argument around military warfare is that it hurts civilians to an even greater extent than limiting supplies through economic warfare does. The Harvard delegation presented one final argument, that economic warfare, even if it does not work as the Trinity team were suggesting, still does more good than bad as it reduces these nations ability to invade other territories and commit human rights abuses due to having fewer resources.

Both sides presented strong arguments and while the judges went off to adjudicate we heard two floor speeches from the audience. These were shorter and more lighthearted than the main speeches from the competitive teams. The judges returned and Sharon Donnery announced that Harvard had won the debate, and Sinziana Stanciu had been awarded the best speaker medal.

While Trinity were disheartened to lose both debates, both events were a massive success. It was great to bring about the return of in person events and I feel very honoured to have played my part in it.

Ódran Farrell

Debates Manager, SER Vol. XXXVI

SER Workshops
2021/22

One of the ways the Student Economic Review engages with students is with workshops. These workshops expand the reach of the review and generate excitement about economics and the review in general. During the 2021-2022 school year, two workshops were hosted. The first was a ‘schols’ workshop helping primarily Senior Fresh economics students in their preparation for the Foundation Scholarship exams. The second workshop partnered with a number of societies including the Environmental Society, Law Society and FLAC (Free Legal Advice Centre) to open up a dialogue about the intersection of economics, law and the environment.

SER Foundation Scholarship Workshop
8th November 2021

The schols workshop is an annual workshop put on by the Student Economic Review which provides information and guidance to Senior Fresh students interested in pursuing the Foundation Scholarship. Following government guidelines, this workshop was held online via zoom.

2020 economics and social sciences scholars presented summaries about the exams they took, expectations for each exam, and advice on how to best prepare. The scholars provided great insight into approaching the daunting levels of studying needed to do well in the exams and encouraged students to maintain a balance in their lives while they prepared for exams. This presentation was followed by a Q&A session.

Participants left the workshop with a greater understanding of what the schols examinations entail, information on who to contact, and provided the students with a clear starting point. As the first workshop of the year, the schols workshop also served the purpose of kicking off the Review’s year and began spreading the word about what the Student Economic Review is.

Intersections of Economics, Law and the Environment Panel with EnviroSoc, LawSoc, FLAC and SER
21 February 2022

The second and final workshop was set up with the intention of expanding the reach of the SER to increase engagement beyond purely economics students, while also highlighting how economics skills can be translated into other research areas. Climate change is one of the most prevalent issues facing students today, and many are becoming involved in protests and movements across all subjects. As a key area of interest, this workshop focused on how students can have a positive impact in their fields of economics or law. The panel explored how economics and law can be used to address environmental issues and actions economists and lawyers can take to support environmental issues from their own fields. The workshop, which took place over Trinity Green Week, was hosted by Anne Spillane, Auditor of the Law Society. The panel was comprised of three professors: the first was Dr. Martha O'Hagan Luff, a Trinity professor of finance with current projects including work on the risk reduction benefits of green bonds and a forest and biodiversity project, with her role being financial incentives; the second panellist was Dr. Suryapratim Roy, a Trinity professor of law, with a speciality in environmental law; and the final panellist was Dr. Andrew Jackson, a UCD professor of law, who worked as an environmental and planning lawyer.

The panellists spoke about their own career paths and what inspired them to integrate an environmental focus into their work. Topics ranged from transparency and greenwashing to behavioural incentives and ESG investing.

I would like to thank the panellists first and foremost for donating their time and providing excellent insights, and to Anne Spillane for hosting. I would also like to thank all those who helped organize and promote the workshop to a variety of disciplines, particularly Rebecca Payling, the chair of the Environmental Society, Georgia Dillon, the Secretary at FLAC, and Ruth Brady, the Secretary of Law Society. I would also like to thank my fellow SER committee members for their continued support accross both events.

Gillian Fritz
Workshops Manager, SER Vol. XXXVI

THE RENT IS TOO DAMN HIGH: AFFORDABILITY IN THE DUBLIN HOUSING MARKET

ELANA KILEY
SENIOR SOPHISTER

"The Dublin housing crisis is a problem that needs no introduction but there is less familiarity and understanding of the solutions to the problem. In this paper, Elana Kiley provides an overview of the state of the housing market in Dublin and reviews the policies that have been proposed to increase supply and improve affordability. By assessing the effects of policies introduced in other countries, Kiley concludes that a joint strategy involving developer- and state-led housing supply is the most efficient solution. Easing unnecessary regulation on private developments will provide short-term amelioration, which combined with counter-cyclical social housing development and government subsidies, should produce a lasting remedy to the housing crisis."

Introduction: The State of the Dublin Housing Market

The Dublin housing market is becoming increasingly unaffordable. Many are spending significant portions of their take-home pay on housing-related costs and many more are unable to form households, are delaying moving out of parental homes, or simply are not able to live in Dublin. This is an issue in terms of equity as well as economic efficiency; Ireland as a nation is losing potential economic growth if a restricted housing market is not allowing individuals to live in cities and access productive, high-paying jobs.

Statistics on the affordability of Dublin show that increasing demand and lack of supply has driven Dublin housing to unaffordable levels. The Daft.ie housing report finds the average rent in Dublin city centre is €2,032 and the cost of renting a double bedroom in a shared house is €833 (Daft, 2021). Overall, Dublin rents are 105% higher than the rest of the country (ibid). The median Dublin resident spends 40% of their post-tax income on rent, and this is higher for those under 25 and over 65 (RTB, 2021), which places an excessive burden on the Dublin residents with the lowest-income.

While 2/3 of new households since 1996 are 1-2 people, only 21% of new builds added in that time have been of a suitable size (Department of Housing, 2018). This lack of suitably sized housing stock means many young people are house sharing later in life or continuing to live with their parents. The number of 25–29-year-olds living with their parents increased from 36% in 2007 to 47.2% in 2019, compared to the EU average of 37%. This indicates that young adults are living at home for financial reasons rather than generational preference. Young adults who live with parents feel a lower sense of life satisfaction after controlling for all variables (-0.2%), especially among those who are aged 25-29 and employed (-0.3%) (Eurofound, 2019). This is despite the financial security benefits of living with parents compared with renting privately. Crucially, therefore, we must note that any statistics on vacancy rates and households will necessarily underestimate the true demand for housing, since many young people who would otherwise be living alone or with a partner are instead living with parents due to affordability.

Very little housing stock has been built recently in Dublin; the Central Statistics Office found that 45% of the national rental stock was built between 2001-2010, but only 4.9% between 2011-2021 (CSO, 2021), indicating a severe lack of housing being built in the country to meet increasing levels of demand, and inevitably driving up prices. An increase in supply would therefore lower housing costs. This could be done through simplification and streamlining of the application and development process, allowing greater density in the city centre, and direct government involvement in increasing supply by building more cost-rental housing.

The Economics of Housing Markets

The urban spatial equilibrium model predicts that density will be greater closer to a city centre, and that if housing prices exceed construction costs, developers will increase the supply of housing (with caveats due to market imperfections, the time taken in construction, etc). However, if supply does not increase, the market is not functioning correctly; data from the US shows that the most expensive (i.e., productive) cities also have the least housing being built. While ~20% of this is due to differences in construction costs across the US, most differences in housing prices are due to regulatory barriers (Glaeser, 2007; Glaeser, Gyorko, and Saks, 2005). Housing regulations are therefore an implicit tax on development that may outweigh any negative externalities, and lead to rising housing prices which make renters poorer in real terms (Glaeser and Gyourko, 2018). Reducing construction costs and unnecessary regulations, where possible, are therefore important for improving housing affordability, encouraging urban growth, and improving the national economy.

Given the positive externalities of human capital, identical workers will be more productive and have higher wages in cities with more human capital; increased demand and wages will then increase land and housing costs (Rauch, 1993). Spatial misallocation occurs when highly productive urban areas have a restricted housing supply which limits worker access to dynamic, productive regions and higher wages, and so restrictions on housing supply have a negative externality on the national economy due to lost productivity. Spatial misallocation in the US due to low housing supply in New York, San Francisco, and San Jose alone reduced US aggregate welfare growth by 50% from 1964-2009, leading to national GDP 8.9% lower than if these regions had median levels of restrictions – or $8,775 per worker. Strict zoning laws and high levels of planning objections were particularly limiting to development, meaning that labour productivity gains in these regions did not increase employment but instead increased both nominal wages and housing prices (Hsieh and Moretti, 2019). Rising housing prices in productive areas discourages migration and slows urban-rural income convergence (Ganong and Shoag, 2017), and so spatial misallocation of workers is also damaging to people in rural areas.

Implications for Dublin Housing Policy

Since the Dublin housing supply is also restricted, Ireland as a nation would benefit economically if that supply were increased, allowing more productive workers to live there. Therefore, this paper recommends several policies aimed at achieving sufficient housing supply in Dublin to meet growing demand. Simplification of the planning process and incentives for developers would be quick to implement and slow the growth of rent prices. A longer-term plan of Government building would bring new cost-price housing onto the market and increase affordability.

Rent Controls and Vacancy Taxes

While rent control and vacancy taxes are both politically popular, the economic literature on their efficacy is underwhelming. Rent control in San Francisco reduced displacement of current residents into cheaper areas by 20%, however it also reduced housing supply by 15% and increased rents in the long run (Diamond et al. 2019). Likewise, in Massachusetts, rent control reduced rents but also decreased supply (Sims, 2007). It is likely that rent controls in Dublin have their place in providing stability and benefitting current residents but may be restricting future supply. Many urban areas with expensive housing markets have recently implemented vacancy taxes (Paris, Vancouver, Melbourne, etc), however the data is limited as to their effectiveness. Housing markets have a natural vacancy rate due to frictions – moving, repairs, temporary owner absence, etc (Hagen and Hansen, 2010). Variations in the actual vacancy rate are significant in determining the percentage change in real prices (Rosen and Smith, 1983); if the actual vacancy rate is above the natural rate, it is a renter's market and renters can make additional demands for lower rent or increased maintenance (Miceli and Sirmans, 2013). A healthy rental vacancy rate is generally given as 3% (Brewsters, 2021 and Hawes, 2020) up to 4-4.5% (Gabriel and Nothaft, 2001). The Dublin vacancy rate is 1.6%, vs 4.6% nationally (Ernst and Young, 2021), with vacancy rates of 0.86% in North Inner Dublin and 0.24% in Clontarf (O'Donnell, 2021), indicating that a lack of stock is a greater issue than habitable properties standing vacant. Any vacancy tax would have to be very high to have a noticeable effect in a tight market, as seen recently when Paris increased the vacancy surcharge from 20% to 60%, because a 20% tax was unable to shift supply (Indecon, 2018). With so few habitable vacancies, the administrative costs may outweigh any benefits. The effectiveness of any legislation depends on data-gathering and enforcement. In 2020, Irish councils collected just €375,000 out of €12.5 million owed in Derelict Site Duty (O'Donnell, 2021), indicating this may be a difficult undertaking. For these reasons, affordability is more likely to come from building more supply, rather than vacancy taxes or any increases in rent controls.

Regulations

Simplification and streamlining of the development process in Dublin would allow more housing supply to come onto the market. Restrictions impose additional burdens on developers, through explicit costs, time delays, and project uncertainty. US metropolitan areas with more extensive housing regulation in 1985-1996 had 45% less development and the price elasticity of housing was 20% lower; a large part of this decrease in supply was due to time delays exacerbating the effects of demand shocks (Mayer and Somerville, 2000). While safety-related restrictions such as fire certs are clearly necessary, reducing other barriers to development in Dublin could allow housing to be built more rapidly.

To simplify planning and reduce development costs, the first proposal is to begin gathering data on construction costs in Dublin, to compare with other countries and target areas for reducing costs. While this data is not currently collected in a detailed and comprehensive manner, we do know that per-square-metre construction costs are higher in Ireland than most of the EU, and this could in part be due to inefficient regulations. For example, currently architects must self-certify a development as meeting regulations which costs €25,000, while in Northern Ireland developments have a standardised official certification process which costs only €250 (Lyons, 2015). Minimum standards on car parking availability could also be relaxed for areas well-serviced by accessible public transport. Current Dublin planning regulations mandate one car parking space per apartment. However, lower-income individuals are more likely to live in city centres rather than suburbs, as public transit is cheaper than owning a car (Glaeser et al., 2008), and so parking minimums could be eased in areas near public transit, as is the case in South Korea (McKinsey, 2014). Currently, minimum requirements are not linked with how much cost they add to development and are effectively pricing out the lowest-income households from Dublin – addressing construction costs will allow supply to respond to increasing demand (Lyons, 2015). Additionally, Dublin has a relatively low density, and giving planning permission for more mid-rise apartment blocks could see a decrease in costs per unit.

Easing regulations would be rapid to implement. Gathering of high-quality data on construction costs may take longer, but once completed, further areas of savings may well be identified. These would reduce the costs of any developments and so increase housing supply and reduce rents for the average Dublin resident. Additionally, by reducing costs, developers can use their cost savings to increase the number of units built. Therefore, reductions in construction costs and inefficient regulations would benefit residents and housing developers alike.

State-led Development

Private development follows a cyclical pattern which can reduce the elasticity of housing supply. State-led housing developments could smooth this cycle through a Keynesian counter-cyclical building pattern. Since private landowners choose the type and timing of any development, they do so with consideration of expected future construction costs as well as future profits. They then attempt to time the market, viewing current high prices as predictors of higher future prices, resulting in delayed development. This reduces housing supply elasticity, particularly during booms (Murphy, 2018). Since Ireland is in a housing boom with rapidly increasing rents and housing prices, landowners are incentivised to delay building and wait for future price rises, which reduces housing supply from the private market.

A state-led housing programme could therefore run on a counter-cyclical pattern. Marquardt and Glaser (2020) argue that state-led involvement in Vienna has been more successful than market-led housing in Berlin, due to a long-term outlook of ongoing housing provision and economies of scale. 60% of Vienna residents live in subsidised housing (Ball, 2019), paying an average rent of €575.90 (Statistics Austria, 2021). Berlin has means-tested rent subsidies for low-income households, much like Ireland's HAP scheme. However, Austria has a blend of public and private housing development to keep housing affordable and decommodified with municipally built housing, limited-profit housing, and privately built housing all present in Vienna. Limited-profit and privately built housing both receive subsidies towards construction, reducing financing costs, in exchange for 1/3 of the development set aside for social housing and rent limits on the first several years after completion (Marquadt and Glaser, 2020). Government development can reduce costs through economies of scale, as can private development with an industrial building approach. Standardization of development, manufacturing components off-site, and improved purchasing processes may reduce construction costs by up to 30% (McKinsey, 2014). Uncertainty also incurs costs on developers, so financing costs can also be reduced through State guarantees of development occupancy (ibid). Overall, this planned approach to housing provides stable and reliable conditions for market activity and is also more efficient – Vienna delivers more social housing at affordable rents and at a lower cost per unit (Marquadt and Glaser, 2020).

Implementation Challenges

Any significant interventions in the housing market of a major city will have significant challenges in implementation, both in cost and logistics. Financing the necessary investment in public housing will have large up-front costs and reaching a level of public or subsidized housing comparable with the supply and prices in Vienna will take many years to achieve - there is an element of path-dependence, in that Vienna has been building housing for years. However, interest rates are at historic lows, with the European Central Bank lending at 0.25% interest (Europa, 2021). Any spending, therefore, that delivers economic growth above 0.25% is a net benefit, and in a housing market as tight as Dublin's this is highly likely. As shown earlier, increasing housing supply in the 3 most productive US cities would have grown their economy by 8.9% per year (Hsieh and Moretti, 2019). The economies of scale available to industrial housing development will reduce costs (McKinsey, 2014). However, to ensure that housing meets the needs of residents any developments must be carefully designed with a mix of housing, amenities, and public transportation links. Vienna has little anti-social behaviour in public housing, due to the wide uptake, including amongst middle-class residents. Private developments are often a mixture of social housing for low-income residents and market-rate rents for higher-income residents in the same block, ensuring a mixture of social classes (Marquardt and Glaser, 2020). Any Dublin state-led housing developments should also ensure that a mixture of rents is available in developments to prevent ghettoization and anti-social behaviour.

In the short-term, housing supply could be increased through measures to increase private development, and this would be significantly easier and cheaper to implement. One challenge in bringing regulatory costs down is the lack of good data on construction costs (Lyons, 2015), and so high-quality data should be gathered from current developments. Standardized inspections could save €25,000 per development and would be easy to implement. Once full data is available, further areas to reduce costs could be easily identified, and this would increase supply from private developers with few additional challenges for the government.

A final challenge lies in evaluating the outcomes of affordability policies. Demand increases due to average households declining in size over time, requiring more dwellings for the same amount of population, as well as labour migration to a city from suburban or rural areas. Many young people in Ireland live with parents rather than alone due to lack of affordable housing. Any increases in supply of affordable housing will therefore also increase demand, and this may confound any evaluation of affordability. A policy may be successful if housing costs remain the same after an increase in both supply and demand, as this would still constitute an increase in migration to productive regions and will benefit the national economy through increased GDP per capita.

Conclusion

In summary, this review of the literature has outlined several policy proposals that may be effective at increasing affordability in the Dublin housing market. Rent controls and vacancy taxes have limited data showing positive long-term effects at increasing supply and so are not recommended, although rent controls may have a place in stabilising rents for current residents while other policies aimed at increasing housing development are undertaken. On the other hand, both liberalization and state-led housing policy are effective at reducing costs.

Regulations can work as an implicit tax and increase the costs of development. While some regulations are necessary, others may be liberalized with few costs. High standards on safety are clearly necessary, and high-quality soundproofing is likely necessary to convince renters to live in apartment blocks. Minimum quality standards can be beneficial in reducing adverse selection in a market, where one party is disadvantaged by having less information about the product being sold. Preventing adverse selection both reduces frictions and ensures bank's willingness to lend mortgages, as the housing will meet a defined standard. However, there are other regulations which could potentially be liberalized. As shown earlier, the largest increase in Dublin households has been singles and couples needing one- and two-bedroom apartments, and so minimum floor space requirements could potentially be decreased to increase the supply of housing targeted towards those demographics. Additionally, minimum parking requirements could be reduced, especially in apartment block developments close to public transit. Streamlining of the planning and development process, standardisation of construction inspections, and reduction in the consideration given to planning objections, would all decrease explicit costs, delays, and uncertainty that make housing development more costly. This would increase supply with little additional expenditure or logistical planning on the part of the government.

The Vienna case study demonstrated the benefits of long-term investment in subsidised housing. A blend of municipal building and incentives to private developers has been highly effective at increasing housing supply and keeping rents affordable for residents. Subsidies to construction costs and occupancy guarantees reduced financing costs and decreased uncertainty for private developers. Additionally, economies of scale from state-led development as well as industrial building policy can reduce construction costs further. Finally, since private development runs on a business cycle and reduces housing elasticity during booms, a state-led housing development policy could run counter-cyclically to smooth this cycle and take advantage of cheaper inputs and labour. While this would be a significant investment and take many years to implement, the data shows these policies have been highly effective in other countries. A significant expansion in housing supply would not only benefit private developers and the construction sector but would also benefit the Irish economy as a whole as it enables workers to move to more productive employment.

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DELIBERATION: AN EFFECTIVE ALTERNATIVE TO INSTITUTIONAL MONOCROPPING?

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"With international relations becoming a dominating political concern around the world, Rocco Balestrieri explores the pitfalls of "institutional monocropping." The importance of exploring the way in which Western institutions are exported to developing countries cannot be overstated especially considering the failures of Western-backed governments. Balestrieri advocates a new method of administration – "deliberative development." Reinstating local, collective decision-making could change the paradigm in developing countries. Referencing concrete examples, Balestrieri presents a piece of the blueprint to closing the income gap between rich and poor countries."

Introduction

This paper discusses whether increasing deliberation in institutional and decision-making processes should be considered a valid alternative to "institutional monocropping" in developing countries. As Evans (2004) argues, imposing Anglo-American institutional frameworks on Less Developed Countries (LDCs) has proved to be a questionable method to raise living standards and stimulate economic growth. Therefore, it might be time to explore the potential of collective debate and citizen participation in public procedures.

After a brief background analysis of the role of institutions and institutional change in LDCs' economies, the concepts of "institutional monocropping" and "deliberative development" will be introduced and investigated. Adopting Western-type institutions has some attractive features as well as many practical limitations. The cases of Latin American Countries (LAC) and some Asian countries in the 1990s will be concisely outlined to back this assumption with empirical evidence.

Successively, Evan's argument will be presented and enriched with other experts' opinions and case studies (ibid). Firstly, this paper aims at demonstrating that citizen participation in institutional processes and decentralized policymaking can be enforced in LDCs. Secondly, it investigates the validity of "deliberative development" as a growth theory, questioning the implications and outcomes of deliberative initiatives.

The case studies show that the deliberative processes are indeed enforceable in practice and can result in positive outcomes for the population. However, looking at empirical evidence, the "deliberative development" theory seems to be growth neutral.

Background: Institutions and Growth Theory in LDCs

A new wave of scholarship focusing on the role of institutions in growth theory moved the spotlight away from capital accumulation theories. Many economic models such as the Harrod-Domar model portray savings and capital as the main effective inputs to stimulate economic development, ignoring the quality of institutions (1964; Evans,2004). Although capital is an important driver of economic growth, we need to evaluate many other factors (King and Levine,1994). According to Evans (2004), it might be time to focus on institutions, how they can change, and their role in fostering growth.

The importance of institutions in stimulating economic growth has been discussed by many experts. North (2003), for example, assesses the role of institutions starting from a basic and societal point of view then, narrows it down to an economic perspective. Institutional frameworks play a central role in policymaking and economic development. According to Rodrick et al.(2002), the quality of these frameworks usually has a greater impact on income levels than geographical and trade components.

Analysing the history of institutional composition and change in many LDCs, the process of "institutional monocropping" has been widely considered the recipe for economic growth. This process consisted in the adoption of "blueprints based on idealised versions of Anglo-American institutions" (Evans, 2004, pp. 30). These institutions vary from representative democracies to private property rights including structured bureaucratic systems and market-oriented financial institutions. Not surprisingly, the adoption of this institutional framework is generally expected to be followed by the implementation of Western laissez-faire policies. The adoption in LA of the Washington Consensus during the 1990s might be one of the prime examples of this occurrence; a one-size-fits-all process that, according to some authors, proved to be ineffective or limited in many cases (Chang, 2002). For this reason, the extent to which institutional reforms can be effective has been questioned. Meanwhile, other possible frameworks better suited to developing countries with diverse cultures and socio-economic conditions have been proposed.

Institutional change can be a laborious and painful process while presenting an obstacle to the implementation of effective administration. When pre-existent formal and informal institutions are rooted in a system, broad reforms are unlikely to occur (Evans, 2004). The most flexible components of LDCs' institutions are the formal rules of a framework. Informal rules and constraints require much more effort and resources to change (North, 2003). In addition, it's likely to encounter the opposition of elites and powerholders (Evans, 2004).

An alternative to "institutional monocropping" has been examined by many authors, such as Evans and Sen (2004, pp. 30; 1999). What they refer to as "deliberative development" might be the key to the adoption of effective ad-hoc institutional frameworks in LDCs (Evans, 2004, pp. 30). The idea of "deliberative development" relies on the hope that increased civilians' participation in policy-making processes and public resources allocation might have "intrinsic benefits" and facilitate an effective resource allocation. This theory emphasises the importance of democratic and deliberative components in institutions.

It might be then interesting to discuss in detail the doubts regarding the effectiveness of "institutional monocropping" as well as "deliberative development." Are deliberative ideals applicable in practice? Could they have an impact on long-term economic growth?

Instituional Monocropping

Analysis and Critique

"Institutional monocropping" assumes that the Anglo-American institutional structure is strongly effective in stimulating economic growth, despite being adopted in different environments and contexts. In other words, a winning formula for growth. As Evans (2004) argues, there are many attractive characteristics in this theory as well as practical failures.

On one hand, Western countries represent a significant example of economic development over the last century, which resulted in higher living standards. The attraction LDCs have towards adopting western institutional frameworks and policies to boost economic growth is understandable. Having a similar institutional structure might also facilitate foreign investment and ease coordination between Southern countries and Western governments as well as other institutions such as NGOs and international organisations. Trade can benefit and foreign aid is usually expected to be more effective if received by a recipient country with institutions like the donor's ones.

On the other hand, replicating foreign institutions presents many drawbacks. Reforms are usually imposed on the most superficial and formal stratum of LDCs' public frameworks - that is, the public sector organisation. This process might create a "disjunction between formal structures and the underlying informal structures of power and practice," resulting in the inefficiency of those new formal structures (Evans, 2004, pp. 34). When carrying out institutional reforms, prior power equilibria and institutional schemes should be explored and properly rearranged. The cultural and social components that regulate formal and informal relationships should be considered as well. Developing countries can present different institutional systems and cultural constraints that may not align with the Anglo-American model.

A further critique of "institutional monocropping" is carried out by Chang (2002). He argues that developing countries have been pushed to adopt Western institutions and policies that are different from those that characterised the past western growth. The US and UK grew under protectionist institutions and policies; however, liberalism and laissez-faire tendencies have been promoted in Southern economies over the 1990s. This process could damage LDCs' development by hampering their freedom and capability to self-discover the apparatus that better fits their characteristics.

Empirical Evidence

Analysing data from different developing countries, we can notice an overall slowdown in income per capita growth in Southern countries over the 1980s and 1990s (Easterly,2010). Some countries, such as Argentina and Russia in the late 1990s, represent an evident failure of "institutional monocropping". Other LA countries adhering to the Washington Consensus, apart from Chile, recorded a modest increase in GDP per capital; although poverty levels and inequality followed the opposite trend (Birdsall et al,2010).

Some Asian LDCs preferred local political choices compared to western models. China experienced significant economic growth without basic Western-type institutions like secure property rights (Evans, 2004). Consider Malasia, in response to the late 1990s Asian crisis, the country adopted a capital control strategy that likely helped the country to fasten its recovery compared to Korea and Thailand, which adopted IMF and orthodox programs (Rodrick, 2001).

Overall, many experts considered the performance of Washington Consensus policies quite limited compared to the size of the reforms. Among the various causes of this "failure," Birdsall et al. (2010) argue the importance of institutions in sustaining policy reforms has been omitted by the Consensus. However, the success of macroeconomic stabilisation institutions in controlling LA countries' inflation should be highlighted, pointing out that adopting western models can be beneficial under some circumstances.

Deliberative Process and Development

Institutional change and policy-making schemes could be influenced by deliberative processes that aim at stimulating popular participation in solving social, political, and economic issues. This idea holds on the assumption that the "power of choice" and collective debate could result in a well-designed set of institutions and policies. This set, ideally, is tailored to the diverse cultures and pre-existing conditions that characterise different developing countries and reflect the population's needs (Evans, 2004). Rodrick (1999) highlights the importance of LDCs' "participatory political meta-institutions" in creating an effective institutional framework. Similarly, Sen (1999) describes deliberative processes as essential in establishing development goals.

After assessing the theoretical value of this thesis, we need to evaluate whether deliberative processes are enforceable in practice and the efficacy of their outcomes. If they are indeed enforceable and capable of influencing macro trajectories of development, rather than being limited to community-based results, we can then talk about "deliberative development" as a real alternative to "institutional monocropping" (Evans, 2004).

Pursuing deliberative initiatives in LDCs is not an easy job. It appears to be predicated on the presence of a "thin democracy" from which civil participation at the micro-level can be built on. This democratic apparatus should be composed of institutions that favour an unbiased flow of inputs (e.g., specific knowledge) to citizens. Once the deliberative process is carried out, institutions are then expected to be accountable and able to implement the policies and suggestions that emerged from the process.

Moreover, we can identify three key issues related to "deliberative development." Firstly, deliberative institutions should be "socially self-sustaining." Citizens are expected to invest their time in deliberative processes and back the political parties that propose such initiatives. Secondly, the "political economy problem" should be fixed to allow institutional changes and decentralised policymaking. Powerholders and dominating elites are likely to oppose collective decision-making to maintain the status quo. Lastly, the "growth problem" should be overcome. The intrinsic benefits of deliberative processes cannot be diminished by economic inefficiency. We need to prove income growth to increase the validity of this development theory (Evans, 2004).

Economists differ significantly in how this economic efficiency can be achieved. On one side, redistributive tendencies and collective decision-making processes have been considered a threat to economic growth by liberal economists. The likelihood of chaotic and ineffective allocation of resources and the risk of repelling FDI are high (Evans, 2004). In the same vein, there are doubts as to the capability of developing countries' citizens to bring useful knowledge to the table, considering the low average literacy rate in those countries (approx. 65%) and the lower amount of leisure time they possess compared to developed countries (World Population Review, 2021; Ortiz-Ospina et al., 2020).

On the other side, greater participation in public debate and resource allocation can present positive outcomes. Transparency is likely to increase while predatory behaviours by rulers are discouraged by wider scrutiny. Consequently, a larger part of public budgets might be employed. Provided that deliberative processes give civilians greater influence on policy implementation, we might expect a more egalitarian distribution of resources. This can decrease inequality and increase overall living standards (Evans, 2004).

Recent Cases of Deliberative Processes in LDCs and Further Analysis

Tamale, Ghana

In 2015 the community of Tamale, Ghana, carried out a two-day Deliberative Poll in the attempt to increase popular participation in environmental, agricultural, and sanity issues. Two hundred citizens were randomly selected, ensuring inclusiveness, and provided with information material from experts. Successively, they were divided into small groups where a debate was encouraged by unbiased moderators. Since one-third of the citizens selected were illiterate, informational inputs were shared through 15-20 mins videos.

Chen (2020) evaluated the initiative's results. He conducted pre and post deliberation surveys to the population and analysed deliberation transcripts. To evaluate the quality of the arguments expressed by the participants, that is, "their level of reasoning", the author employed the Discourse Quality Index. Comparing pre- and post-survey results, we notice an increasing awareness in agriculture-related issues, such as the importance of employing clean water when cultivating while healthcare proposals seemed to be the most rated. However, no real opinion changes occurred when discussing loans and saving associations. This phenomenon might reflect the lack of financial and economic knowledge that characterise poor populations.

Kelara, India

The region of Kerala, India, has been characterised in the last century by a great history of public mobilisation and participation in public matters. Deliberative tendencies started to increase in the 1960s and, by the end of the 1980s, deliberative reforms had been significantly implemented in the region (YRIS, 2013). This case represents an interesting example of deliberation on large scale and over an extended period. The region experienced a process of "Democratic Decentralisation," which resulted in village councils being appointed the management of more than 40% of the state's public budget (Evans, 2004).

The results of these political and institutional choices have been considerably positive over time. Firstly, the "political economy power" was overcome, as the political party pursuing the campaign was itself largely composed of state bureaucrats and public sector unions. Secondly, the greater popular involvement in the administration of public resources resulted in efficient public service, and developments in living standards were achieved. The literacy rate of the region exceeded 90%, while the rest of the country rested on an average of 50%. At the same time, infancy mortality significantly decreased (Evans, 2004). Manufacturing and overall investment levels performed above the national average in the late 1990s. However, on average, the region's economic growth was aligned with the average growth rates of the whole country.

Further Analysis

As previously stated, both cases demonstrate that developing countries might be able to enforce deliberative processes efficiently. The initiatives present different designs and methodologies, enforcing the idea that developing countries should be encouraged to self-adopt the institutional and policy-making frameworks that better suit their context.

The Tamale case is the most recent one, therefore, further research might be required to evaluate the economic effects of the Deliberative Poll in the long run. Nonetheless, the case demonstrates that poorly educated civilians can effectively engage in deliberative processes and discuss complex issues. When informational inputs are well designed and the topics discussed affect citizens' everyday life, civil engagement is more likely to be successful (Chen, 2020). The post-deliberation surveys, however, show a threatening absence of inclination towards the flourishing of micro-financial institutions (e.g., Village savings and Loan Associations (VSLA)). As Dawuni et al, (2020) demonstrate, VSLAs heightened agricultural value productivity in different regions of Ghana and can "serve as a tool for financial inclusion and economic development".

Differentially, Kerala's case permits us to evaluate the economic outcomes of deliberative initiatives. The region achieved a more effective public resource allocation, which resulted in remarkable developments in education, healthcare, and other public infrastructures. However, major concerns remain when assessing the validity of the "deliberative development" theory on a macro level, as we struggle to find proof of higher long-term economic growth compared to other regions in the same countries.

On one side, improvements at a micro level, if appropriately replicated, can stimulate economic growth. Increased literacy and education, for example, can result in higher human capital. As Mankiw, Romer, and Weil (1992) argue in their augmented Solow model, human capital is a significant driver of economic growth. In line with this assumption, Vinod and Kaushik (2007), demonstrate how education can influence GDP growth. In Kerala's example, collective and decentralised decision-making resulted in a higher number of schools or increase literacy rate.

On the other side, some experts, such as Chakraborty (1997), argue that greater direct public participation can be effective in improving developing countries' living conditions in the short-run, while, in the long run, growth-based strategies are necessary to foster sustainable growth.

Conclusion

This paper explored the idea of "deliberative development" as an alternative to "institutional monocropping" in developing countries. Duplicating Anglo-American institutions might not be the most effective formula for economic growth - contrary to policy in the 1990s. Developing countries present different socio-cultural characteristics and pre-existent formal and informal institutions that inhibit one-size-fits-all approaches in making institutional change and policymaking. Despite this, it would be erroneous to claim that developing countries should always refuse to adopt developed countries' institutional frameworks. Western-type democratic institutions themselves can promote deliberative processes and facilitate foreign investment, aid, and trade. Besides, macroeconomic stabilisation institutions proved to be an important instrument when dealing with high inflation in LA.

Analysing different opinions, we might conclude that increased collective participation in institutional procedures is possible and can result in a more effective and population-oriented public resource allocation. The cases presented show that poorly educated civilians can actively engage in collective debates on complex social issues if encouraged and assisted by local institutions. Moreover, the deliberative processes proved to be "socially self-sustainable," strengthening the idea that deliberative economic theories should be considered when discussing valid alternatives to blueprinting Anglo-American institutional frameworks.

The data gathered, however, cannot overcome the doubts surrounding long-run economic growth. What Evans (2004) refers to as the "growth problem" is difficult to address in the cases examined. Although the local populations' living conditions seemed to benefit from the initiatives, deeper research is needed to investigate how these processes can be pursued on a larger scale and whether they can influence economic development over time.

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A Discussion of Minimum Unit Alcohol Pricing in Ireland

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"In January 2022, the Irish government introduced a Minimum Unit Pricing policy on the sale of alcohol. The intention of the policymakers is to combat alcohol related harm in the community. Brian Coady discusses the regressive nature of the policy and whether this may surprisingly improve the efficiency of the policy. Coady goes on to outline the stakeholders in the industry that may benefit from this policy and those that will be disadvantaged. The success of government policies is often determined by their efficiency in achieving their objective. Coady illustrates how minimum unit pricing is more effective than alternative policies in tackling harmful alcohol consumption."

Introduction

In 2013, there were three alcohol related deaths a day in Ireland and over €1.5B spent on hospital discharges*, while excise duty receipts on alcohol only totalled €1.2B (Health Research Board, 2016; OECD, 2022). Tackling harmful alcohol consumption and its accompanying issues has been a key objective of Irish policymakers for some time, and the most recent initiative was taken in January of 2022 with the introduction of Minimum Unit Pricing (MUP). The policy is relatively simple, the introduction of a price floor on all retail sales of alcohol in Ireland, but its ramifications are wider reaching and more complex, with impacts on retailers, consumers, manufacturers, and the exchequer; as well as spatial considerations to be noted.

Equity/Efficiency Trade-off

Overview

Central to the discussion of the Minimum Unity Pricing Policy is the concept of the

*This excludes emergency cases, GP visits and treatment services.

equity/efficiency trade off when choosing policies. An effective policy should be efficient: it achieves its stated and intended goals using the least amount of resources; it is should also be equitable: it maximises the welfare of the individuals affected by the policy (O'Hagan and O'Toole, 2017). Minimum unit pricing is not a sophisticated policy and requires very little resources to implement, and research shows it is at least somewhat effective at achieving its goals (Smith et al, 2020). However, where the policy requires more discussion is on the equity side of the equation. The pricing policy utilised is regressive in nature, disproportionately impacting individuals with low income, while also creating uncompetitive markets and reducing exchequer revenue (Smith et al, 2020). Furthermore, responsible drinkers are subject to the same price measures as harmful drinkers, despite not being the target demographic of the policy; in 2013 a consultation ran for the UK government did not find enough evidence to show that Minimum unit pricing did not unfairly penalise responsible drinkers (Jones and Sumnall, 2022).

Regressive Policy

Although the stated aim of the policy is to reduce harmful alcohol consumption, the policy is not targeted and will impact all consumers of alcohol, regardless of consumption levels. Furthermore, as this is a one price fits all policy, working in similar vein to how a consumption tax such as VAT does, we find that consumers with lower incomes pay a higher proportional rate relative to their income than their high-income counterparts. This implies that MUP is a regressive policy, and disproportionately impacts individuals with lower incomes.

Before discussing the regressive nature of MUP, we first note that there exists much heterogeneity regarding alcohol consumption patterns and risks across society. Lower educated men and women are less likely to report consequences of alcohol consumption than their higher educated counterparts, increasing their risk of harm from alcohol use (Bloomfield et al, 2012). This may be related to the fact those on lower incomes are less protected from deprivation and the impact of a stressful life event (Bloomfield et al, 2012). This could have the effect of exacerbating the effects of harmful alcohol consumption and its accompanying risks. However, in developed countries, professional and highly educated women are at an increased risk of heavy drinking and alcohol issues (Marmot, 1997). Further studies in India also found illiterate and less educated individuals consumed the most spirits (Kumar, 2017). The diversity of consumption habits across society and their accompanying health risk factors should be accounted for when formulating a policy such as MUP.

As we are most concerned with the equity of MUP across individual income, we will look at consumption patterns of different socioeconomic groups (SEGs). Lower incomes are associated with higher rates of alcohol abuse, but also higher rates of abstinence and are thus less likely to engage in any alcohol consumption, but those who are engaging in alcohol consumption are more likely to engage in harmful consumption. Interestingly, both previous studies found that those with higher incomes drink more often but consume less on each occasion, so on average are not participating in harmful consumption at the same rate as individuals with lower incomes. This would imply that lower income SEGs contain a higher proportion of harmful drinkers than higher income groups. So, the argument that this policy is regressive and disproportionately affects individuals with lower income may be an argument in favour of the policy, not against it. Price effects will affect those in lower SEGs more, but those in lower SEGs are more likely to engage in harmful alcohol consumption, and the stated goal of this policy is to reduce harmful alcohol consumption. People in higher SEGs will be proportionally less impacted by the price floor but are also less likely to engage in the harmful alcohol consumption this policy seeks to reduce in the first place. Unfortunately, there are few studies that investigate the differing responses to price increases across consumption patterns (Jones and Sumnall, 2022). In summary, given the nature of consumption patterns across SEGs, the regressive nature of MUP may be advantageous to achieving its stated policy goals.

Market Competition

With the introduction of minimum unit pricing, there has been a limit placed on the extent to which retailers can participate in price competition (Smith et al, 2020). The introduction of a price floor has allowed retailers to fix prices for all alcoholic goods which fall below the price floor, subsequently selling above the equilibrium price for many alcoholic products and generating supernormal profits. This of course is a foreign concept to "perfect" markets and is a practice reserved for monopolies and collusive oligopolies, a practice which is tightly regulated to protect consumers (European Commission B, 2022). Central to this discussion is consumer elasticity of demand for alcohol. Studies in the UK market, which is very similar to Ireland in terms of consumption habits and social norms surrounding alcohol, have shown the elasticity of spirits to be as low as -0.082, and wine as low as -0.384* (Meng et al., 2014). Income elasticities of demand for alcohol have also been calculated as inelastic (Nelson, 2013). These low elasticities indicate that price increases will only result in marginal decreases in consumption. The inelastic nature of alcohol ensures that retailers stand to make windfall profits at the expense of consumers.

This policy will not just adversely affect consumers, however, but also manufacturers in the alcohol industry. Demand for alcohol will decrease, as is the goal of the

* Off License Sales. On License sales showed higher elasticities indicating more price sensitivity (Meng et al., 2014). However, on license sales are typically unaffected by Minimum Unit Pricing and not the target of the policy. For this discussion, we are only concerned with off license sales.

policy, subsequently reducing quantities sold by manufacturers. Moreover, the incidence of minimum unit price falls on the consumer, not the retailer, so manufacturers will still compete on price for *all* alcoholic products when supplying retailers and will not be able to take advantage of any price floors, whereas retailers can when supplying consumers. The implications of this are that manufacturers will see a reduction in sales while not generating any excessive profits like the retailers are, leading to a potential for an overall welfare loss for the manufacturers as a result of this policy.

In summary, MUP benefits retailers at the expense of both the manufacturers and the consumers. Manufacturers of alcohol will record lower sales and still need to compete on price when selling to retailers, while consumers will be exploited for price on the lowest quality alcoholic products.

Loss for Border Retailers

The supernormal profits that retailers are set to make are dependent upon the assumption that there are no cheaper alternatives, which is not the case across all of Ireland (ROI). Alcohol in Northern Ireland was already considerably cheaper due to the lower cost of living there, and the minimum unit pricing policy will only enlarge these price differences (NISRA, 2021). The Irish government had intended to wait until the policy could be put in place in tandem with Northern Irish policymakers, but political deadlock in Northern Ireland led to ROI pursuing the policy independently (RTE, 2022). Now, retailers in border counties are likely to suffer because of the lack of synchronisation of pricing policy between the two jurisdictions. Consumers in the border counties will seek the cheaper alternatives in Northern Ireland, rather than paying premium prices in ROI for the same product. There will be little impact on the welfare of Irish consumers in these regions, while Irish retailers in the region will likely lose more business to their cheaper counterparts in the North. This represents a gross inefficiency for the policy; its stated goal of reducing harmful alcohol consumption is unlikely to be met in the border counties. Regions farther from the border are less likely to be impacted in the same manner as consumers there account for both temporal and transport costs in their consumption decisions i.e., Northern Ireland is too far away. Despite the existence of cheaper alcohol in a neighbouring jurisdiction representing a severe flaw in this policy, this cheaper option existed previously to the implementation of MUP and is a circumstance which is out of the control of Irish policymakers. MUP may not reduce harmful drinking in the region, but it will certainly not increase harm nor decrease overall welfare*.

*Referring to individual welfare, as the policy of MUP seeks to address. The welfare of the retailers in the region will be negatively impacted.

Policy Alternatives

The main issues MUP presents are hindrance to retail competition and a loss of revenue for the exchequer. Not forgetting the goal of the policy, which is to reduce *harmful* alcohol consumption, we analyse how MUP compares with two other potential policy options: An increase in excise duty and a unit surcharge on off-license sales.

An increase in excise duty would increase the cost of all sales of alcohol, including on licensed premises. This simplistic and easy to implement policy would also target harmful drinking in the same manner as minimum unit pricing, through a price effect. Competition would remain unhindered, and exchequer revenue would very likely increase. However, every consumer, including those who do not engage in harmful drinking, would be faced with higher prices. This is quite an inequitable outcome considering most drinkers are not engaging in harmful drinking (Health Research Board, 2016). What is of particular interest about this approach is its inequitable impact on on-licensed premises. The cross-price elasticity between on-licensed alcohol and off-licensed alcohol is positive in many cases, implying that the increased price in licensed premises could lead to higher off-license consumption, contrary to the goals of the policy (although off-license prices will also increase, so the results are potentially ambiguous) (Meng et al., 2014).

A surcharge per unit of alcohol on all off-license sales would result in the same decrease in consumption through a price effect as MUP does. However, consumer welfare is decreased as all off-license alcohol will increase in price. The impact of the surcharge could be either on the manufacturer or the retailer, while the incidence falls upon the consumer. In either case, competition in the market is retained. On-license consumption would increase due to the positive cross-price elasticity between on and off-license alcohol consumption (Meng et al., 2014). In line with the goal of reducing harmful alcohol consumption, revenue from the surcharge could be hypothecated towards alcohol-harm reduction initiatives etc.

Discussion

Developing a policy to discourage harmful alcohol consumption is a complex issue. The trade-offs between equity and efficiency can be significant, but it is the role of the policymaker to decide where on the scale between efficiency and equity they will place themselves. Minimum unit pricing has its criticisms and downfalls, but so too do the alternative policies of surcharges and hikes in excise duties. As discussed, the main drawbacks of minimum unit pricing are its anti-competitive market inefficiencies, the loss of revenue to the exchequer, and the unfair penalisation of responsible drinkers. The issue of unfair penalisation of responsible drinkers will be omnipresent across all policies however, as it is unfortunately not feasible to discriminate between harmful and responsible drinkers. But the solution to the first two drawbacks could be as simple as a windfall gains tax placed upon retailers, reclaiming lost revenue for the exchequer. The availability of cheaper alcohol in Northern Ireland will be an uncontrollable factor for the time being, no matter what policy is chosen.

Finally, the question should be asked, are price measures the best policy for reducing harmful alcohol consumption? Ireland already boasts some of the highest alcohol prices in Europe, imposing the highest excise duties on alcohol of any EU state (European Commission A, 2022). This begs the discussion as to whether price controls are effective in the long run. Consumers may adjust their expectations and preferences for alcohol to prices in the long run, and demand side policies such as education and support systems could prove more effective in this time frame.

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Analysis of the NHS Staffing Crisis

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"A 2019 Guardian report found the National Health Service to be short by over 40,000 nurses. This presents an unmistakable policy issue in dire need of addressing. The pandemic has highlighted and exacerbated the problem with catastrophic consequences. Thomas Fleming will establish goals for the UK government in the period beyond the recovery from the pandemic. After evaluating existing policies and alternatives provided by the relevant literature on the matter, Fleming will conclude with a number of recommendations from which the British government can begin to find a sustainable resolution to the NHS's nurse staffing crisis."

Introduction

The National Health Service (NHS) is the public healthcare system of the United Kingdom. Presently, the NHS provides critical healthcare to over 1 million patients every 36 hours (Emmett, 2020). It is therefore imperative that the NHS be functioning to the best of its capabilities. In 2019, senior NHS leaders reported that "hospitals are so short of nurses that patients' safety and quality of care is under threat" (Guardian, 2019). In the context of the staff shortages, patients face increasing difficulties to access NHS services while waiting times are growing. Combined with an increasingly ageing population (ONS, 2018), the implications of these added difficulties really are a matter of life or death.

The COVID-19 pandemic has devastated the NHS in the UK. As well as taking the lives of over 880 health and social care workers (ONS, 2021), COVID-19 has seen nurses on the frontlines across the NHS relentlessly overworked. As a result of the burnout and exhaustion faced in this period, a third of nurses are now considering leaving the profession (Sky, 2020). Given that the NHS had been suffering from a shortage of over 43,000 nurses (Guardian, 2019) in the year before the coronavirus pandemic took hold, it is evident that the country faces a dire situation.

With the NHS facing a growing shortage, the resolution must be twofold - through increasing recruitment of new nurses as well as by improving retention of existing nurses. If NHS nurses cannot be maintained, no sustainable advancement can be achieved by recruiting new nurses.

Addressing the shortage of NHS nursing staff will lead to improved health outcomes for the country. Until the crisis is resolved, there will be damaging implications for many members of the British population. It is therefore fundamental that this crisis is addressed imminently.

Establishing Goals

The goal then is to increase the nursing workforce to a safe level of staffing. UNISON (2014) defines a safe level of nursing as a "nurse-to-patient ratio of one registered nurse to every four patients." A survey by the Royal College of Nursing (RCN, 2020) found the nurse patient ratio of the UK was roughly 8.8 in 2009 - however it is probable that this figure has improved since then as the nursing workforce has risen. Nonetheless, despite this increase in the workforce, the ratio of 1:4 has remained far out of reach. Until policies are introduced to make a more significant impact on increasing the nursing workforce, this ratio will remain a distant aim and patient care will continue to be "regularly compromised" by understaffing (ibid).

Not only must a safe level of staffing be achieved, the solution must also be sustainable. What this means is that the nurse-patient ratio must be improved for both the immediate term and more distant future. As mentioned earlier, the UK's population is ageing. Therefore, it is clear that a one off increase in the NHS staff is not enough: the number of NHS nurses must adapt with the population.

Stakeholders

To best understand the policy context of recent times, it is critical to understand the stakeholders present in the decision-making process, predominantly the government and nursing unions. The stakeholders have differing objectives and constraints. The government's objective is to provide a well-functioning health service but they are constrained by budgeting issues as they might seek to limit taxes or use their budget for alternative means. They therefore seek to maximise the efficiency of the health service. For unions, the objective is to improve working conditions while they are constrained by their political power in influencing decisions. At present, poor working conditions are largely as a result of the staff shortages (RCN, 2020). It is important to note that both of these stakeholder groups are willing to see an improved NHS with staffing shortages resolved. However, for the government, this is only the case if the constrained budget allows it.

Overview

A 2013 public inquiry into care provided at the Mid Staffordshire Hospital found that nurse staffing decisions had been made with a focus placed on limiting expenditure rather than care quality or public safety (Lawless et al, 2019). This shifted the issue of nursing shortages to the forefront of the political scene. The government response to the issue acknowledged failure in allowing this to happen before committing to address the recommendations the report from the inquiry gave. However, the government chose to reject the recommendation by the inquiry to consider mandating minimum nurse patient ratios (ibid). This outlined what has since become a common theme in the stance of the government in 'prioritising workforce productivity and service efficiency to achieve a balanced NHS budget' (ibid) over committing to meeting safe standards.

The policy instruments deployed by the government in the last 4 years have centred on recruitment and training. In response to the pandemic, the government has introduced the Health and Care Visa (gov.uk, 2020). The visa, which has a reduced application fee, includes an exemption from the Immigration Health Surcharge. Through offering these reduced fees, it is the government's hope that prospective nurses will find jobs in the NHS to be more accessible, thus employment can be increased. Additionally, the reduction in fees presents a relatively low cost measure to address the staffing shortage. The extent to which this will be effective may however be limited without appropriate active recruitment policies to incentivise nurses to immigrate into the UK from abroad.

With regard to training, the government has dedicated funding to develop 10,000 additional nursing training places (Marangozov et al, 2016). With there presently being fewer nursing university degree places available than applicants (Goddard, 2020), an increase in the number of places on these courses presents a pragmatic instrument to expand domestic recruitment. This will have a more substantial cost to the government. The extent to which this presents a sustainable solution might be limited if, as in governments past (Charlesworth, 2021), this funding is susceptible to austerity cuts in the next recession.

These two recent policies represent just two of a wealth of policy instruments available to the government to avail of in their pursuit of reducing the shortage.

According to Kingdon and Stano (1984), "for a policy to gain traction and to be successfully implemented, there must be recognition that there is a significant problem to be addressed; a deliverable solution congruent with public and policymaker values needs to be available" and a conducive political climate must exist. COVID-19 has made the damaging impact of the nursing shortage abundantly clear. The Conservative party in power has promised an extra £33.9 billion to improve the NHS by 2023-24 (Conservatives, 2020). Finally, opinion surveys show strong current support for the NHS (Barclay & Tallack, 2021) - demonstrating that today's political climate is conducive to finding a sustainable solution. Therefore, all that remains is for a deliverable solution to be found.

Literature Review

Literature on the matter has discussed the viability of the available policy instruments.

Buchan and O'May (1999) explore some of the issues regarding international recruitment of nurses. The authors outline the trend of "batch" international recruitment - sporadic immigration of a group of nurses. The cost of international recruitment is apparent in previous projects. In 1998 the NHS recruited 50 nurses from the Philippines at a cost of around £1700 per nurse. They were recruited by NHS Trusts rather than third party agencies; these would have been some of the less expensive immigrant nurses recruited that year. Therefore, both time and money present significant limitations to international recruitment.

Crawford et al (2015) investigated the responsiveness of NHS nurses' labour supply to changes in their wages relative to outside options of employment. The authors found that increasing national NHS nurses' pay rates would increase the short run numbers seeking employment. However, this relationship is relatively inelastic. With regard to London specifically however - the number of NHS nurses is more responsive to pay levels. The authors estimated that "a 7% increase in nurse numbers could be expected to be achieved in a year through a boost to the relative pay of NHS nurses of about 10%". This finding has significant potential for improving both retention and recruitment. This presents one means to address the country's most severe (Campbell, 2018) regional nursing shortage.

Charlesworth (2021) outlines the value in domestic solutions. The author points out that the UK is below both the OECD average and EU-14 average in the number of graduates with a nursing qualification per capita (ibid). She claims that the lack of investment in training as the root cause of staff shortages. While the author frames this as a failure by the government, this might in fact present an opportunity. With rising numbers of applicants to nursing courses in 2020 (ibid), enhancing training could offer a viable solution to the nursing shortage of the NHS.

Methodology

Beginning with the literature review offering policy recommendations, this paper will then continue by regarding interviews from NHS managers and staff unions. On top of this, the elasticity of labour supply will be interpreted further to try and understand the extent to which changes in pay present an option. This will all be done so that the interests of all stakeholders will be accounted for before the most appropriate policy to recommend is determined.

Policy Options

The two most prevalent routes to consider in resolving this crisis are: expanding international recruitment and investment into training. Other policy options are also considered, however on review of their feasibility and value, they are not as worthwhile of such comprehensive evaluation as the two more prevalent prospects.

International Recruitment

Building on the expansion to foreign health immigration induced by the Health and Care Visa presents one option available to the government to resolve the crisis. In 2018, only 4,611 qualified/registered nurses from overseas were offered positions in the NHS (NHS Confederation, 2019). This number can be built on to fill the present vacancies in the NHS. The UK's decision to leave the European Union might make this matter difficult to undertake. While the 6% of existing nurses that are from the EU (ibid) will likely be able to stay in the NHS, in the coming years not having the ease of the European employment pool will make recruitment even more difficult. In the past, the UK government has negotiated contracts with foreign nations, notably Ghana, for the recruitment of nurses for a given period of time. This was done in exchange for professional development of the nurses involved (Kingma, 2001). Without the constraints of the EU, the UK might benefit from negotiating more of these contracts with foreign states. This could present a sustainable solution to understaffing as a contractual relationship would establish a continuous flow of nurses entering the UK. The key advantage of this proposal is that nurses would enter the NHS ready to work immediately.

Evaluation Criteria

Effect	If nurses can be recruited to directly fill vacancies in the NHS the shortage of staff could be somewhat filled. Given the temporary nature of international nurses' tenures (Buchan and O'May, 1999), it is unlikely that this policy would lead to an increase in permanent staffing in the NHS. This would mean working conditions and thus retention of nurses would not be improved if shortages are not sustainably addressed.

Equity	This method might be seen as inequitable for two reasons. Firstly, there were 11,500 applicants to undergraduate nursing who were not given a place on a course in 2018 (ibid). Domestic students may be frustrated by NHS outsourcing recruitment to foreign nationals. Secondly, international recruitment depletes the nursing resources of heavily recruited foreign countries (Kingma, 2001). In the past the damage has been so bad that foreign countries have lobbied the UK government to halt recruitment from their countries (ibid).
Feasibility	This proposal is only feasible as a short-term strategy to alleviate local shortages in emergency situations. This is because in the long-term, in-flows of nurses cannot be guaranteed to last. Meanwhile the significant cost of each nurse (Buchan and O'May, 1999) is excessive when compared with the alternative proposals.
Acceptability	NHS manager interviews have highlighted that overseas recruitment tends only to be considered "after other home-based alternatives" (ibid). To both the government and NHS unions, this strategy presents value only in emergency situations - for which 'batch recruitment' is desired.

Investment in Training

With fewer nursing university degree places available than applicants (Goddard, 2020), it is clear that there are individuals willing to fill the nursing vacancies in the NHS. Continuing on from their creation of 10,000 course places, the government could address the staffing shortage by looking to expand alternative training methods. The associate and apprenticeship route presents a popular pathway into nursing (Glasper, 2019). This is because trainees receive an annual wage and do not pay tuition fees. Presently there are only slightly more than 1000 nursing associates on the register. Increasing this number presents a viable strategy by offering more prospective nurses an accessible and affordable means to enter the profession. In 2019, the government made a commitment to investing in 7,500 new associate places (Hancock, 2021). However, when assessing the progress of the NHS's long-term plan one year later, this aspect was labelled as 'no longer viable' as a result of COVID-19. Now, in the dawn of the pandemic recovery, it is the time to reintroduce this measure. As Charlesworth (2021) has pointed out, there has been a substantial increase in the number of applicants to nursing courses as a result of COVID 19. If the government can increase places on the apprenticeship course soon, it will be able to avail of this growing demand to increase the number of nurses employed in the NHS.

Evaluation Criteria

Effect	An increase in nursing apprenticeship places would directly lead to an increase in the number of nurses employed in the NHS. This is because the number of prospective nurses awaiting courses like this is substantial. If shortages can be sustainably addressed, existing nurses will be able to derive more satisfaction from their work- leading to better retention.
Equity	This strategy can be regarded as equitable. This is because it would provide prospective nursing students with the opportunities they desire to build a career from. More opportunities are created for this group without expense to any other specific group.
Feasibility	This solution can be regarded as feasible considering the relatively low cost of this method of training. With trainee nursing associates conducting their courses between online study at the Open University and placement work (Hartje, 2020), the cost to expanding this program will not be too deterring - especially considering these associates would offer value to the NHS for their work in hospitals.
Acceptability	This strategy is likely to be regarded as highly acceptable to the government considering their previous willingness to implement the policy prior to the pandemic. Nursing unions like the RCN (2018) also previously welcomed the expansion of paths into the profession.

Increasing Pay

An increase in pay also presents an option that the government might consider. Crawford et al (2015) have identified that an increase in pay for NHS nurses in London could lead to a substantial increase in employment in that area. If an increase in pay can incentivise former nurses to re-enter the profession and disincentive existing nurses to leave the profession, both retention and recruitment might be improved. However, it is unlikely that there are enough former nurses available to return to resolve the crisis. It is likely that pay would need to be increased substantially in order to improve retention respect to changes in the wage rate is just 0.15 (Phillips, 1995), meaning that a 10% increase in pay would only lead to a 1.5% increase in hours worked. The significant size of pay rise required to do this would likely make this proposal unacceptable to the government.

Improving Working Conditions

There is significant value in acknowledging the demands of the nurses themselves in gauging how to address this crisis. Two recurring demands by the RCN (2018) are for an end to 12-hour shifts and for mandatory safe staffing ratios. These proposals would improve the daily work of nurses across the UK and would likely lead to an increase in retention. However, since there exists a significant shortage of nurses at present, the feasibility of these proposals is lacking. As 12-hour shifts have become necessary to fill the gaps left by vacancies, these measures alone would do little to resolve the crisis.

Recommendation and Conculsion

In conclusion the most appropriate policy to tackle the nursing shortage is to bolster the NHS associate and apprenticeship program. As a result of COVID-19, the UK has witnessed a sharp reduction in new registrations from nurses abroad (Charlesworth, 2021). When this is considered on top of the factors of greater expense and the temporary nature of employment, international recruitment must be seen as a flawed solution. Investing in training presents the most appropriate solution to the crisis. This proposal would take advantage of the present oversupply of prospective nurses- the size of which is over 10,000 (and has been since 2010). The fact that this policy proposal has already been endorsed by both the government and nursing unions is testament to its value. When compared to international recruitment, investing in training presents a cheaper, simpler and more acceptable strategy to tackle this shortage. If this pathway can establish its value as a route into nursing, it will be less at risk of austerity cuts in the future.

For this policy to work best, it should be implemented alongside measures to improve working conditions. If this policy increases employment in nursing, the need for 12 hour shifts will be depleted. Together these actions would lead to an improvement in working life for nurses, which could create a positive feedback loop if nursing becomes relatively more attractive. If this cycle can be achieved, there is hope that this proposal could sustainably resolve the NHS nursing crisis and achieve the 1:4 nurse to patient ratio.

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THE US-CHINA TRADE WAR: IMPLICATIONS FOR EU TRADE POLICY

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"The US trade war with China caused disruption to the long-lasting economic consensus on the mutual benefits of free trade and the devastation of tariffs. Cian Hennigan explores the fallout of this trade war and the motivations behind it, in an effort to establish whether the economic consensus on trade is still applicable in today's globalised economy. Hennigan looks at the issue from an EU perspective and discusses the implications for the future of EU trade relations with China, the US, and the UK, as they attempt to balance economic welfare with the goals of sustainability and justice."

Introduction

What originally began as the European Coal and Steel Community, the EU has now become a fully-fledged area of economic cooperation. A founding principle of this economic cooperation entails that member states cannot impose technical or non-technical trade barriers between each other. As a result of this trade liberalisation, the notion of tariffs and other protectionist measures have not existed between member states since the commencement of their membership. In the backdrop of the enlargement of the EU, many other developed nations also moved towards open trade policies in search of increased economic growth and the WTO was established accordingly (Haugh et al., 2016). Consequently, there were no major trade wars in this period. A trade war is a scenario in which two countries continuously impose tariffs on each other in a retaliatory response to an initial tariff by one country. The rise in populism in recent years has led to trade policy being used as a political tool to enforce anti-globalisation agendas, a key pillar of many recent populist platforms (Fajgelbaum & Khandelwal, 2021).

In 2018, the long period of uninterrupted trade liberalisation in the world economy was abruptly ended when Donald Trump decided to place tariffs on some imports into the US market, which mainly targeted China. Examining evidence from this trade war allows us to analyse what trade theory still holds in a modern-day setting and ultimately how this evidence can be incorporated into the goals of EU trade policy.

The Economic Impact of the US-China Trade War

Trade wars stem from protectionist trade policies, which are pursued by placing tariffs on goods from other countries, in order to make domestically produced goods more competitive. There is overwhelming evidence that increased trade liberalisation is more effective in increasing economic growth and that protectionist policies should be avoided (Haugh et al., 2016). However, this research has failed to thwart the move of some governments towards protectionist trade policies. Additionally, it was still not fully clear how well previous research would apply to a modern-day trade war between two major trading economies.

Trump's protectionist policies were influenced by a number of factors. A key part of his presidential campaign was to protect domestic manufacturing industries that had lost out to China's comparative advantages, mainly in the form of cheaper labour. There was also a belief that Chinese imports of steel and aluminium were a threat to national security (Bown & Kolb, 2021). The initial tariffs led to retaliation from China, and a trade war ensued. High tariffs have mainly been placed on aluminium, steel, and electrical goods such as semiconductors (ibid). China and the US entered a phase one trade deal in 2020, but data shows that China has failed to meet the conditions of the deal (Bown, 2022). There is no certainty when the remaining tariffs will be removed, or whether the current trade deal will hold in the future.

As this trade war is still young, we can only analyse its short-term impacts. Studies by Fajgelbaum et al. (2020) and Cavallo et al. (2021) have found that during the trade war, there has been a complete pass-through of tariffs onto producer prices for both countries, which has implications for tariff welfare calculations. This was in contrast to classical trade theory, which hypothesised that there would be an incomplete pass-through of tariffs for major trading nations. Kreinin (1961) studied tariff pass-through in the US after the Reciprocal Trade Agreements Act* and found an incomplete pass-through of tariffs for a variety of industries. Globalisation has possibly eroded the trade power of large economies and their ability to affect the global market.

There is compelling preliminary evidence that US manufacturing industries experienced a negative impact on employment and wages as a result of the trade war. An econometric analysis by Flaaen and Pierce (2019) studied the initial effects of the trade war by using rigorous tariff timing data and matching it with US labour statistics to assess

* The Reciprocal Trade Agreements Act (RTAA), which passed in 1934, gave the US president the power to adjust tariffs and negotiate bilateral trade deals.

any changes to the US manufacturing economy. They found that even though the original tariff protection helped US manufacturing employment marginally, this was offset by the increase in input costs from retaliatory tariffs. Analysing producer prices, they also find that rising input costs caused a significant increase which supports the complete pass-through of tariffs to producers. This negative impact is in contrast with one of the original reasons for placing the protectionist tariffs in the first place. As one would expect, the trade war has also had substantial distributional effects, mainly due to Republican counties experiencing the largest welfare losses (Fajgelbaum et al., 2020). The econometric results can be seen in the table below.

Table 4: Point Estimates of Cumulative Effect by Channel:

Variable	Employment	Industrial Production	Producer Prices
Import Protection	0.080*	-0.042	-0.053
	(0.049)	(0.165)	(0.069)
Rising Input Costs	-0.463***	-0.357	1.780***
	(0.122)	(0.330)	(0.486)
Foreign Retaliation	-0.506**	0.180	0.341
	(0.249)	(0.657)	(0.538)
Industry Fixed Effects	yes	yes	yes
Number of Industries	76	84	81
Observations	2,440	2,688	2,586

Sources: Federal Reserve Board (FRB), U.S. Department of Labor, Bureau of Labor Statistics; authors' calculations.
Notes: See equations (7) and (8) in the text. Robust standard errors in parentheses. $* \ p < 0.10$, $** \ p < 0.05$, $*** \ p < 0.01$.

Source: (Flaaen & Pierce, 2019)

It is also important to analyse the indirect effects of the tariffs applied. It is reasonable to assume that a trade war creates instability for industries and freezes investment prospects. A study by Caldara et al. (2020) found that trade policy uncertainty increased dramatically in 2018, and this may have reduced US investment by around 1 percent. Analysis of the impact of the trade war estimate welfare losses that range between 0 and 1 percent of GDP for the US and China (P. Fajgelbaum & Khandelwal, 2021). To summarise, initial statistical analysis shows that the trade war negatively impacted growth, which can be seen through the fall in employment and increase in prices for US manufacturing firms. Further study is needed to assess the long run impact, which will be determined by the future trade relations between the two countries.

Insights for the EU

The recent trade war has brought trade policy into a much more focal discussion. It should be stated that as part of the US-China trade war, the US also placed tariffs on steel and aluminium for the majority of major trading nations, including the EU (Bown & Kolb, 2021). The Commission retaliated by placing tariffs on iconic American goods. On October 31st 2021, the EU and US government agreed to drop most of the tariffs in place between the unions and brought an end to the cycle of retaliation (EU Commission, 2021a). From the evidence shown, this trade policy will benefit manufacturing industries by helping to lower the prices of intermediate goods. The Commission stated that the deal "should reduce costs for steel and aluminium exporters, helping to support the sustainability of two industries that together employ 3.6 million people in the EU" (ibid). It is clear that protecting the employment and output of these industries, as well as political change in the US, were important factors in reaching a deal. More generally, the importance of robust trade agreements with other trading nations is important for economic growth in the EU as a whole. The move to reduce tariffs on steel and aluminium supports the claim that using trade policy to protect manufacturing employment "is complicated by the presence of globally interconnected supply chains" (Flaaen & Pierce, 2019). Although tariffs can be initially used to protect domestic employment, it is clear that in a highly globalised world this is not an effective policy for increasing economic growth.

From an intra-EU perspective, the free trade area prevents trade wars between EU members and subsequently helps to improve economic growth in the EU. The benefits derived from this arrangement are often taken for granted by EU nations, but the emergence of the US-China trade war serves as a reminder of the importance of economic cooperation to protect economic growth in the union.

In February 2021, the Commission released a communication regarding the EU's trade policy objectives in the coming years. The communication stated the importance of keeping European trade open while also emphasising the importance of sustainability and rule-based cooperation (EU Commission, 2021b). Sustainability has become an important part of the EU framework, but there are international differences in the importance of climate change and its urgency. The EU may also find it difficult to maintain rule-based relationships with countries like China and the US, who have both struggled to align their trade practices with WTO guidelines (Bown, 2009). The EU has proposed a reform of the WTO, but one would wonder what policy concessions it will have to make in order to get all major trading nations on board.

How do the EU Approach the UK and China?

There are many current and potential difficulties facing EU trade. The EU is protected from protectionism due to its democratic structure and has committed to remaining an open trading economic area. The UK and China provide interesting case studies summarising the diplomatic issues the EU will face as they attempt to complete their trade objectives.

In recent months, the UK have increasingly threatened the EU that they may decide to trigger Article 16. This may force the Commission to revoke the post–Brexit Trade and Cooperation Agreement (Webber et al., 2021). Although scrapping the agreement is not guaranteed, it may be needed in order to maintain a harder stance on the UK post-Brexit. From an EU growth perspective, it would be damaging to instigate a trade war with the UK. Around 15% of the EU's total exports go to the UK, and 10% of its imports come from the UK (Eurostat, 2021). This makes the UK a significant trading partner for the EU, especially in the areas of food, drink, and certain manufacturing industries. Using input-output trade data and economic shock models, researchers have estimated the economic impacts of trade barriers between the UK and the EU. A study by Hans-Ulrich and Oliver (2021) found that a reduction in UK import demand would have the biggest relative effect on Irish agricultural and German automotive industries. With a similar model, Wenz et al. (2020) estimate that there would be long run negative output growth for both the UK and the EU, with Ireland being the most exposed due to the use of the UK as a land bridge to access EU markets.

Based on the findings above, it would not be surprising if the Commission approach the issue of the current trade agreement with the UK cautiously. If the current agreement abruptly falls through, it will lead to economic uncertainty and instability in the EU area. However, the discovery of a complete pass-through of tariffs for major economies will give some hope to the EU that there may be a high elasticity of supply and new trading partners could be found quite easily to offset the reduction in demand.

The EU's trade relations with China have worsened over the last two years, due to numerous disagreements and policy differences. They brokered a ground-breaking investment deal called the EU China Comprehensive Agreement on Investment (CAI), however, the ratification of this deal has been delayed due to a dispute between China and the EU over the mistreatment of Muslim Uyghurs in northwest China (Emmott, 2021). The purpose of the CAI is to establish a framework of rules that make investments between the two economic areas fairer, and to open parts of China's economy to EU FDI (EU Commission, 2020). The CAI would have been an effective deal at committing the EU to openness while also having China agree to multiple sustainability goals such as peaking their carbon emissions by 2030. However, the issue of human rights is clearly important for the Parliament, and it will not be foregone for increased economic growth.

China is an extreme economic player internationally, and the country is still growing at a rapid rate. Their GDP grew by 8.1% in 2021 and is forecasted by the OECD to consistently grow at a rate of close to 5% over the next couple of years (OECD, 2021). The sheer growth of the Chinese economy makes it an important ally for increasing economic growth in the EU and helping to reduce prices for EU consumers. However, China still remains restless when it comes to cooperation and discipline in the WTO. Most recently, China blocked the majority of its trade with Lithuania after it deepened its ties with Taiwan (Lau, 2022). This forced EU Trade Commissioner Valdis Dombrovskis to launch a WTO trade dispute. Disputes with China are common in the WTO, which is likely to continue into the future. Although openness with China is economically enticing, the EU's rule-based approach to trade will be tested by a nation that historically has struggled with discipline on an international level.

Conclusion

There is a vast amount of evidence on how trade policy affects economies, but a lack of modern-day trade wars has left questions about whether the theory would still hold. In essence, the US-China trade war provides fresh evidence on the applicability of trade policy in the modern-world. The EU can also learn from the US-China trade war that engaging in a tariff war on manufacturing products has a negative impact on growth in the short run at least. It is likely that the impact on growth in the long run will also be negative, but more data is needed before this can be examined. It is clear that globalisation has led to a world where protectionist measures are still economically punished, and possibly more than before.

The intra-EU free trade area has prevented trade wars and harnessed consistent growth in many sectors that rely heavily on imports and exports. It has also led to sustained employment in the areas that suffer the most from tariffs. In order to sustain growth into the future, the EU should focus on minimising tariffs where possible between the EU and other trading nations and maintaining economic cooperation within the EU. The Commission should avoid any abrupt trade policy changes with the UK to avoid unsettling industries that rely heavily on the UK as a trading market. China also provides a huge diplomatic headache for the EU, and it is difficult to predict how cooperative the nation will be as it becomes economically more powerful in the future. As many governments dabble in rogue protectionist trade policies, it is important that the EU continues to implement open trade policies where possible to boost the economic welfare of its citizenry. Nonetheless, the Commission has a responsibility that this should not come with the concession of other important proponents of welfare such as climate and justice. This balance will most likely guide EU trade in the next decade and beyond.

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The Laissez-Faire State, and Thomas Philippon's 'The Great Reversal'

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"Since the 'father' of modern economics, Adam Smith, developed his theory of free market exchange, the question of the role of the government in protecting or interfering with the free market has kept economists busy. Jennifer Waters contributes to this debate in an analysis of EU and US governmental attitudes towards corporate influence in policy making. In contrasting the union versus state organisations, Waters gives insight into how different free-market interpretations lead to stark disparities in spending and power of corporations at the legislative level."

Introduction

In this essay I will argue against Thomas Philippon's conclusion in *The Great Reversal: How America Gave Up on the Free Market* and instead affirm America did not 'give up' on the free market but became a full-fledged laissez-faire state - with all the anti-competitive consequences it entails (2019). I will argue that a laissez-faire state is placed in an impossible position, to be both hands-off, as well as ensure that appropriate conditions of competition remain in place. I hold that the American laissez-faire state cannot appeal to independent standards of competition despite being required to perpetuate the invisible hand, making corporate lobbying and campaign finance the only way to legitimise its economic interventions. This then blurs the distinction between state and market and reveals the susceptibility of corporate influence consequently undermining the values of a laissez-faire state philosophy by its own criteria.

The Laissez-Faire Philosophy

Adam Smith's *Theory of Moral Sentiments* claimed that human morality is consequential to social interaction. Smith claimed that, humans are social creatures and that our tendencies for self-preservation work in conjunction with sympathy – what we would now consider 'empathy'- towards others. Smith claimed that human 'self-interest' was sympathetic in nature and that our judgements and assessments of values incorporate the standards of 'justice' and 'conscience' we attain from social interaction. Because human self-interest assumes sympathy, our interactions and decisions inherently consider other people's conditions, making our decisions and values 'beneficent.' (Smith, 1759).

Smith's view of 'beneficence' and sympathetic self-interest characterise his perspective towards market exchange, as well as the market competition underlying his invisible hand thesis made in his book on political economy, *Wealth of Nations*. The invisible hand thesis states;

> 'Every individual necessarily labours to render the annual revenue of the society as great as he can... he intends only his own gain, and he is in this... led by an invisible hand to promote an end which was not part of his intention.' (Smith, 1776)

The values of two individuals engaged in an exchange, acting in their own self-interest, would promote the beneficence of society by nature of their own self-interest. The integrity of that exchange, however, rests on it being uninterrupted by outside forces - like governmental restrictions. For Smith, exchanges on an individual scale ensured a mutually beneficial interaction, and the understanding of value was not through money, but through labour. Smith distinguished between real and nominal value, claiming that money was only a speculative price, where labour was the root purpose of money. While silver and gold varied,

> 'Labour alone, therefore, never varying in its own value, is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared. It is their real price.' (ibid)

Labour, although the true value of commodities, had no metric, making any exchange highly relative and highly individualised in value, demanding unrestricted decision-making processes between both parties in order to retain its being 'mutually beneficial.' The integrity of exchange between corporation and customer was considered axiomatic in nature. Market competition in this sense would be dictated by what is mutually beneficial for society. Any dominance of a particular corporation would be by its own merit and the benefits it provides to individuals and, therefore, society as a whole.

In this way, corporate decisions could be considered representative of their customers. Discipline to corporations was disavowed as the actual nature of a corporation was considered to be composed of the needs of its customers and adjusted to accommodate new needs. Outlined by Smith; 'the real and effectual discipline which is exercised over a workman is not that of his corporation, but that of his customers.'(ibid). Further, any advantage a corporation had in the marketplace was because of the value it provided for its customers.

Smith's invisible hand and its assumptions of 'exchange' and 'competition' epitomises Smith's underlying philosophy about humanity's social nature and moral character. Patterns of exchange in a broader, social scale by this interpretation can be seen as the manifestation of social convention borne from beneficial social values. In this way un-patterned distributions can be defended due to the axiomatic integrity of 'exchange' and governmental intervention can be seen as disrupting not just the merits behind competitive advantage in the marketplace, but social values and social norms.

Laissez-Faire Legitimacy

Smith's invisible hand thesis and the market's symbolic value of citizens made the state's legitimacy contingent on its non-interference of exchange and competition, the 'hands-off' laissez-faire state. The social removal of the state from the exchanges themselves meant a state's management and restrictions of the localised transfer of money was detached from the ultimate understanding of value: sympathy. Despite the marketplace being considered the manifestation of social values, it could only be so when its emergence is regarded as having axiomatic integrity, namely the beneficence of sympathetic exchange – to regulate the market was to regulate the values of citizens. Any efforts for the state to ultimately regulate labour in Smith's morally derived economic system would be 'a manifest violation of that natural liberty which it is the proper business of law not to infringe but to support. Such regulations may, no doubt, be considered as… a violation of natural liberty.'(ibid).

Now a legitimate state could only be defined through its preservation of its market, as it could only legitimately 'support' the 'effort of every man to better his condition… powerful enough to maintain the natural progress of things towards improvement'(ibid). However, for a laissez-faire state to legitimately 'support' an invisible hand mechanism and 'maintain' the natural progress, it must be put into a conflicting position. Inherent to supporting the invisible hand is perpetuating an emergent phenomenon - the state cannot be 'hands off' and 'maintain.'

It is because of Smith's views on human nature and sympathy underlying market exchange and corporate competition that his politico-economic ideology conflicts. To ensure there is an evolution of competition guided by the invisible hand, the healthy entry and exit of new and old businesses must be held to a standard of efficiency and dictated by the popularity derived from the benefits of its consumers. The government must intervene on companies acquiring too much market power or even monopolistic tendencies. However, by doing so, it risks its legitimacy as a distinct laissez-faire state. For the laissez-faire state to do its duty, the state would be required to abstain from doing its duty.

The Solution and its Consequences

How then could a laissez-faire state legitimately perpetuate the invisible hand? The only way it seems for a laissez-faire state to do its duty and perpetuate an invisible hand mechanism would be for the distinction between a political entity and economic entity to blur. In other words, the state must incorporate lobbying and campaign financing.

The state cannot appeal to any standards of its own to justify intervening in the marketplace. Therefore, the only way a laissez-faire state could properly support the free-market and legitimately take action to preserve the invisible hand's integrity is to intervene by the standards set by the marketplace and encourage incumbent corporations who have competitive advantage. Competitive advantage in the invisible hand model is symbolic of the social value that corporations provide. If the laissez-faire state's standards are absorbed into the needs and values of large corporations, any intervention justified by the demands of corporations cannot be considered a transgression against the personal liberty of their consumers.

Lobbying is essentially corporate petitioning to inform economic regulations and governmental policies on issues they consider to be of interest. Inherent to the interests of the corporations, adhering to Smith's philosophy, is the values of the consumers. Frequent discussions of lobbying pertain to the revision of existing laws or policies, taxation, and addressing whether a particular industry is subject to economic 'shocks' and requires protection through tariffs or subsidies. Lobbying provides corporations direct influence over the state and in turn, legitimises a laissez-faire state's interference with the market.

Campaign finance is an indirect way corporations can influence the state and its policies. By funding particular candidates, corporations ensure that their voices are heard, and taken into consideration in the debate surrounding new policies being drafted, or current policies being enforced.

Although lobbying and campaign finance enable the laissez-faire state to do its duty, their political influence may provide them the opportunity to stifle competition and work against the interests of their consumers. Rather than corporations modifying and enhancing their practices and products to best suit the needs and demands of society and consumers, they can instead focus their efforts towards preventing competitive pressures from arising. They can promote the political establishment of higher barriers for entry for new corporations; increase their profits by way of tax breaks rather than efficiency; and stifle competition by merging with potential companies they consider to be threatening.

If a corporation leverages their political influence to circumvent fair competition, the nature or philosophy underlying the value of a laissez-faire state in the first place is threatened by the very thing Smith reviled - monopolies. Put another way, the laissez-faire state's legitimate intervention leaves it susceptible to its own subversion.

The 'Reversal'

Thomas Philippon in his book *The Great Reversal: How America Gave Up on the Free Market,* provided evidence that in the past 50 years, corporations in America were using their political influence to circumvent and stifle fair competition, concluding that America 'gave up' on the free market (2019). The shift of corporate priorities is evidenced by the proportion of corporate expenditures designated to lobbying, and the current concentration of marketplace power. Philippon found,

> 'Lobbying expenditures are three times more concentrated than revenues, which are themselves already fairly concentrated. This means that large firms play an even more outsized role in the political system than they do in the economy itself.'(ibid)

Philippon is wrong in describing the end of the free market in America. Instead, America became a truly laissez-faire state. Corporate political influence in America is not a rejection of the invisible hand ideology. The state is incorporated into the market and a political free market emerges. This incorporation, however, entails ideologically conflicting consequences.

State versus Union

The following sections will analyse Philippon's comparative analysis between lobbying in the United States and the European Union. These entities are examples of laissez-faire *states* and laissez-faire *unions*, respectively. The disparity between lobbying in the EU and the US can be traced to the differing standards governments are able to appeal to and justify economic intervention. Laissez-faire *states* are bound to the standards dictated by the market to retain legitimacy, as their regulation agencies must be centralised and federal. Whereas a laissez-faire *union* can appeal to independent standards of ideal competition and remain legitimate, as its regulation agencies can be decentralised and independent from its member states. Philippon argues that the EU is less corrupted by the political interference of corporations because its regulating agencies are supranational and independent. Following this logic while investigating the structure that makes independent standards of competition possible for legitimate intervention, the variable we need to consider is not how 'free' the free-market is, but how the structure of government seeks to 'maintain' competition. A laissez-faire *union* makes regulation agencies less dependent on corporate lobbying and campaign finance to justify economic intervention, which then leads me to disagree with Philippon that the degree of freeness does not change between the EU and the US, but the EU upholds competitive standards differently as a result of its *union* organisation. America 'giving up' implies the state could make the choice. Philippon attributes this shift in competition to an agency the state does not, and cannot, possess when adhering to Smith's politico-economic ideology.

The European Union is a union between 27 Member States. One of the main priorities of the EU was to establish the Single Market, or a free trade agreement between the 27 Member States, as well as Iceland, Lichtenstein, Norway, and Switzerland. The Single Market eliminated border tariffs and facilitated the unrestricted movement of goods and services between the participating members. The presence of the Single Market establishes a broader domestic market with more diverse resources in each state, and consequently forces each of its member states to relinquish a portion of their 'sovereignty' when regulating imports and exports. This means that within the EU, corporate and industry regulation is not undertaken at a state, or federal level, but at an independent, supranational level. The political independence of regulatory agencies seeks to limit partisanships - tax breaks, corporate influence, favourable policy, etc. - between other member states with the regulation agency. The result of this non-partisanship is that MEPs in any Member State have a far reduced influence on the investigations of the regulation agencies.

Philippon's comparison between US and EU lobbying can be considered to follow a 'follow the money,' quantitative approach. Regarding US lobbying, Philippon (2019: 169) finds, 'total lobbying expenditures for only twenty states in the US (which account for 58 percent of US GDP) totalled $1.43 billion in 2016—nearly as much as total lobbying to the EU.' Upon further investigation, Philippon (2019: 173) argued that lobbying did in fact carry heavy impact on industry and economic regulation, favouring corporations. He found that; 'If our estimates are correct, increases in lobbying can thus account for most of the decrease in enforcement in the US.'

Regarding the condonement of the corporation's political influence in the US, Philippon mentions the 2010 case of Citizens United vs Federal Election Commission (FEC). This case symbolises the tensions inherent to a laissez-faire *state* with respect to Smith's moral and political philosophy. The Supreme Court referenced the free-speech clause of the First Amendment in order to claim that restricting expenditures of non-profit, for-profit, labour unions, and other associations for political endorsements and partisan advertisements was a transgression against business communications, therefore the *individual liberty* of free-speech. The case was controversial, winning 5-4 in the Supreme Court. As said by Philippon (2019), 'for its proponents, [the Citizens United case] was a defence of the First Amendment. For its critics, it basically legalised corruption'.

This ruling is not an early indicator of 'reversal,' or 'giving up,' by the requirements of a laissez-faire *state*, it is the continuance of Smith's philosophical criteria. Smith's state is charged with 'maintaining' competition itself, meaning the US's regulation agencies are federal. The Federal Trade Commission, or FTC is a commission composed of political appointees from both the Republican and Democratic party which monitors business practices and settles disputes involving corporate mergers, acquisitions, and cases accusing corporations of anti-competitive behaviour. The FTC's position in a laissez-faire *state* means it is subject to the wills of elected officials who are influenced by the corporations it is investigating. Elected officials, whose campaigns were financed by corporations, can strongly encourage the FTC to stop investigations into corporations (Philippon mentioned Google). This lays bare the consequences of involving corporations in the regulatory process as implied by Smith's work.

When comparing campaign finance in the US and the EU, Philippon (2019) found, 'If differences in lobbying expenditures between the US and the EU are large (a factor of two, or three for corporate lobbying, as we saw in Chapter 9), differences in campaign contributions are staggering'. Comparing legislation in the EU, Philippon (2019) highlighted that the EU prohibited corporate contributions to campaigns and enacted lower spending costs per parliamentary candidate, reducing campaign spending from 22,00 euros to 10,000 euros.

His evidence left him this graph:

194 · POLITICAL ECONOMY

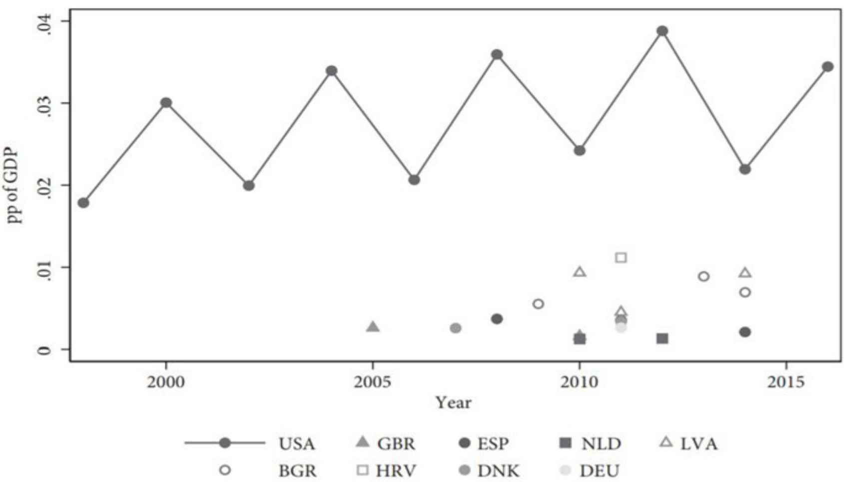

FIGURE 10.5 Total campaign expenditures divided by GDP. *Data sources*: US, Center for Responsive Politics; EU, EU Parliament (2015). For Germany, see Bundestags-Drucksache (2013).

Source: Philippon (2019)

Concluding Remarks

The philosophy behind Smith's invisible hand thesis, the mechanism of a free-market, and the extent of his faith in that mechanism is grounded in his belief that acting in mutual beneficence is inherent to human's social nature. For Smith's economic beliefs to fail, his philosophy on human nature would fail also. I must also emphasise that Adam Smith was far more pragmatic about state intervention in *Wealth of Nations* than is commonly understood, providing a 'long list of exceptions' for a laissez-faire *state's* intervention, while retaining his philosophy of the state's legitimacy (Reisman, 1998). Whether these exceptions are considered or not, however, I maintain my position that America is *truly* laissez-faire *state*.

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The Carry Trade and Global Imbalances

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"A currency carry trade is a popular trading strategy in which an investor borrows currencies with low interest rates with negative forward premiums and invests in currencies with high interest rates which will subsequently have positive forward premiums. Robert Tolan, Jemima Owens and Vlad-Florian Lica discuss the interaction between national accounts, interest rates, speculation, and exchange rates with the intention of highlighting the drivers of carry trades. They discover heterogeneity between the drivers of different currency carry trades. They further outline that the carry trade effects national current account balances and thus, can obscure the net debtor/creditor position of countries."

Introduction

The carry trade consists of borrowing in currencies with low interest rates with negative forward premiums and investing in currencies with high interest rates and subsequently positive forward premiums (Menkhoff, et al., 2012). Given the Current Account (CA) captures the amount countries borrow from others in each period, currencies used to fund carry trade positions accumulate external debt positions due to speculation. In this way, the accumulation of carry trades in a particular currency increases CA deficits and decreases CA surpluses in a manner that separates the value of the currency from fundamentals (Della Corte et al, 2016). The existence of carry is a violation of Uncovered Interest Parity (UIP) which states exchange-rate changes should eliminate gains or losses from interest rate changes (Menkhoff, et al., 2012). The "forward premium puzzle" has been widely studied and its causes remain a cause of contention in international macroeconomics. By severing the relationship between fundamentals and exchange rates, the carry trade makes it more difficult to assess which countries are truly net debtors and net creditors.

To investigate the dynamics of the CA balance through the phenomena of the carry trade, this paper presents a new dataset combining the External Wealth of Nations (EWN) dataset (Lane & Milesi-Ferretti, 2021), measures of financial integration compiled by Bénétrix et al (2021) and financial data sourced from Bloomberg. The purpose is to capture some of the complex interplay between national accounts, speculation, exchange rates and ultimately the allocation of risk. We find that considerable heterogeneity exists across currencies when determining the drivers of carry trades. This has important implications for understanding how speculative financial activity impacts the CA balance which will improve central banks' understanding of how interest rates, exchange rates and the incidence of crises interact.

Literature Review

According to Della Corte et al (2016) net debtor countries offer a currency risk premium to compensate investors willing to finance negative external imbalances as currencies depreciate in times of stress. They find currency excess returns are higher when the funding (investment) country is a net foreign creditor and has a higher propensity to issue liabilities denominated in domestic currency. This means external imbalances are critical in determining the magnitude of currency risk premia and, by extension, the interplay between FX markets and national accounts. As a result, successful carry trades are a form of compensation for time-varying fundamental risk therefore such activity can be viewed as taking on global imbalance risk.

Gabaix and Maggiori (2015) revived portfolio balance theory by developing an exchange rate determination model with capital flows, termed the Gamma model. Della Corte et al (2016) use the Gamma model to test their hypothesis that the currency premia are higher when the interest rate differential is higher. The dataset used consists of the spot and one-month forward rates for fifty-five currency pairs denominated as units per USD as well as foreign assets and liabilities and GDP data from the EWN as well as data on external liabilities denominated in domestic currency constructed by Bénétrix et al (2015). Della Corte et al (2016) find the net debtor-net creditor relationship is key to understanding how excess returns arise in foreign exchange markets. They find that though the Covered Interest Parity (CIP) condition generally holds, the same is not true for the Uncovered Interest Parity (UIP) condition which agrees with Burnside (2018), a study of carry trade returns for G10 currencies from 1976-2018. Indeed, Burnside (2018) cites failure of UIP as one of the main culprits for Menkhoff's "forward premium puzzle" and thus the observed profitability of carry trades. Burnside (2018) believes UIP fails due to the assumption agents are risk averse. However, agents are risk takers thus the no-arbitrage fails thus creating positive returns for carry trades. As the G10 currencies are the most liquid portion of the FX market, the general failure of UIP suggests exchange rates are an important component of national accounts vis-à-vis cross-border assets and liabilities.

Bénétrix et al (2021) presents a dataset on the currency composition of the international investment position (IIP) for 50 countries from 1990-2017. With a focus on external assets and liabilities, the paper lends itself to analysing how FX markets impact national accounts. They find considerable heterogeneity can be encountered in currency exposures among countries making it difficult to develop generalisations about the dynamics between currency exposures and global imbalances. Despite the volatility of carry trade returns, Eichengreen et al's (2003) "original sin" still holds true, and advanced economies predominantly fund liabilities in their domestic currency and emerging economies do the opposite. This has important implications for the IIP in the event of cross-border shocks such as the Great Financial Crisis, sudden interest rate reductions in foreign currencies can have significant valuation effects for the domestic national accounts.

Menkhoff et al (2012) show that high interest rate currencies deliver low, and generally negative, returns during times of stress and low interest rate currencies provide a hedge for high FX volatility. Given high interest rate currencies are generally in emerging markets and low interest rate currencies have become synonymous with advanced economies, these results provide valuable insight on the advanced - developed economy paradigm in FX markets. Using spot and 1-month forward FX rates from 1983 to 2009 for 48 currency pairs against the USD, they find FX volatility is a significant input for forward premia. By using spot and forward prices as well as their volatility in Merton's (1973) intertemporal capital asset pricing model (ICAPM), these results hold in a discrete time thereby giving Menkhoff et al's (2012) results additional weight. The only direct measure of carry trade activity is through exchange traded funds (ETFs) and exchange traded notes (ETNs) sold by banks.

According to Curcuru et al (2010), the most frequently used measure of carry trade activity is the US Commodity Futures Trading Commission (CFTC) Large Trader Reporting Data which gives the net positions of speculators on currencies. This gives an overall indication of market sentiment rather than wholly accurate data as some of these positions are not speculative and it does not include activity carried out in over-the-counter (OTC) markets. Bank of International Settlements (BIS) data on cross-border lending can also be used as banks may lend the funding currency to others engaged in the carry trade or may accumulate foreign-currency deposits to target carry themselves.

Empirical Approach

Based on the existing literature, the approach taken is to regress the CA balance against spot rates, *Spot*, 1-month forward rates, *Forward*, the interest rate differential implied by the CIP, termed Fdt, the differential between 10-year government bonds, termed R10, net assets, $Nassets$, and net liabilities, $Nliabilities$. Generalised least squares is used to overcome heteroscedasticity in the underlying variables (Wooldridge, 2013). Investors observe the spot and forward rates as well as the return offered on government bonds and are assumed to take them into account when speculating (Bloomberg, 2021). The currency pairs studied are: GBPUSD, EURUSD, AUDUSD, JPYUSD, ZARUSD and TRYUSD. The last two developing market currencies are used as controls for the first four developed market currencies. The FX rates are taken against USD, the conventional approach, which also makes the data compatible with the EWN dataset. Bénétrix et al (2015) provide GDP figures and weightings for assets denominated in domestic and foreign currencies as well as weightings for liabilities denominated in domestic and foreign currencies. The weightings are multiplied by GDP to derive notional amounts for assets and liabilities, net positions are derived from subtracting foreign currency positions from domestic currency positions.

Spot and forward rates, along with risk-aversion, are the main inputs behind the forward premia puzzle. Given the difficulties in modelling risk appetite, the combination of spot and forward rates with an indirect measure of sentiment such as net market positions, sourced from the CFTC Large Trader Reporting Data should approximate the investment decisions faced by a speculator. This leads to a baseline global imbalance and carry trade equation of the form:

$$CA_i = \beta_0 + \beta_1(Spot)_i + \beta_2(forward)_i + \beta_3(Fdt)_i + \beta_4(R10)_i$$
$$+\beta_5(Nassets)_i + \beta_6(Nliabilities)_i + u_i \qquad (1)$$

Given Menkhoff et al's (2012) emphasis on exchange rate volatility as a determinant of forward premium, the respective volatility of spot, *volspot*, and forward rates, *volforward,* are considered:

$$CA_i = \beta_0 + \beta_1(Spot)_i + \beta_2(forward)_i + \beta_3(Fdt)_i + \beta_4(R10)_i$$
$$+\beta_5(volspot)_i + \beta_6(volforward)_i + u_i \qquad (2)$$

Description of the Dataset

The EWN records the assets and liabilities for 212 economies as well as the European Monetary Union and the Eastern Caribbean Currency Union from 1970-2020. Using the International Investment Position (IIP) reported in national accounts and combining this with IMF Coordinated Investment Survey (CIPS) data, the dataset offers a cogent view on global capital flows. The dataset itself has been updated numerous times, with the initial spanning from 1970-2001 and containing estimates for 67 countries, and in this way its evolution reflects the growing complexity of global imbalances.

The data extracted from the survey includes CA balances from the UK, Germany, taken as a proxy for the European Union, Japan, Australia, South Africa, and Turkey. Assuming modern carry traders are aware of Burnside's (2018) remark that gains "…go up by the stairs and down by the escalator", the increased liquidity associated with GBPUSD, EURUSD, JPYUSD and AUDUSD markets is assumed to make carry trades using these pairs much more attractive assuming some level of risk-aversity. Increased liquidity in financial markets leads to lower bid-ask spreads and therefore reduced transaction costs. In times of stress, their depth ensure loss-making positions can be exited to some degree. The relative predictability of central banks in advanced economies adds to the safety net.

In contrast, emerging market currencies such as ZAR and TRY are governed by unpredictable central banks whose sudden rate decisions can alter the dynamics of carry trades overnight. In a sense, the escalator descends much faster than in advanced economy currencies. Once the thinness of emerging market currency markets is considered, the resulting higher transaction costs and tendency to trade in much smaller notional amounts makes exiting carry trades accumulated over time much more difficult. As a result, they are a suitable control for developed markets currencies. ZAR and TRY have been used as they are often associated with speculation, of which the carry trade is a major component.

Spot and 1-month forward FX rates are derived from Bloomberg daily data. Due to market convention, forward points for specific contracts are provided e.g., 1-month, 3-month, 12-month etc, denoted *fp*, which are used to calculate the forward rate according to the formula:

$$F_t = S_t + \frac{fp}{10{,}000} \qquad (3)$$

where F_t , S_t are the forward and spot rates respectively. As per the literature, the 1-month forward rates are used as speculation normally occurs over a series of short-term trades. Given the increased importance of systematic investing, trend-following has started to meaningfully move FX markets and 1-month contract across various products are normally the most fundamental way in which sentiment is traded. The interest-rate differential, *fdt*, is defined as:

$$\frac{S_t - F_t}{S_t} \qquad (4)$$

as per Della Corte et al (2016). As shown in Figure 1, the CIP condition, i.e., fdt=0, generally holds in the dataset except for the emerging markets currencies which is likely a reflection of the increased efficiency associated with advanced economy FX pairs.

Figure 1

Descriptive Statistics for Spot, Forward, Rate Differential and Volatility 2010-17					
Currency Pair	**Spot**	**Forward**	**Fdt**	**Volspot**	**Volforward**
GBPUSD	1.5185	1.5185	0.0000	0.0420	1.3794
EURUSD	1.2507	1.2511	-0.0004	0.0375	0.0404
AUDUSD	0.8896	0.8882	0.0014	0.0342	0.0337
JPYUSD	0.0103	0.0102	0.0153	0.0004	0.0006
ZARUSD	0.1019	0.1562	-0.6179	0.0055	0.0043
TRYUSD	0.4715	0.4881	-0.0439	0.0215	0.0206

The similarity of spot and forward rates throughout the dataset suggests a regression involving some interaction between them will suffer from multicollinearity which is indeed the case. This also holds for all combinations of log transformations for spot, forward and spot*forward. Despite the apparent efficiency of currency markets, the volatility of spot and forward rates hints at some level of disconnect between fundamentals and market efficiency, the tension between the two has critical implications for national accounts. Bénétrix et al (2021) compiles data on the IIP of 50 countries from 1990-2017. Using an approach that combines actual with estimated figures, aggregate foreign currency exposures are calculated with a view to unmasking heterogeneities across groups. Therefore, combining EWN and financial data with markers from Bénétrix et al (2021) creates a data set of the same philosophy: a recognition that acknowledges the critical link between the exchange rates observed by market participants, of both speculative and non-speculative natures, and the gyrations of national accounts. As all of the figures are denominated in USD, the associated weightings are multiplied by GDP to derive the foreign assets and foreign liabilities as well as the domestic assets and domestic liabilities positions. Net assets are then found by subtracting assets derived in foreign currency from assets derived in domestic currency and the same approach is used for net liabilities.

Empirical Results

Taking the baseline model, (1), the spot and forward rates, interest rate differential, 10-year interest rate differential, net assets and net liabilities all have statistically significant effects on the CA balance for JPYUSD. The 10-year interest rate differential, net assets and net liabilities have a statistically significant effect on the CA balance for GBPUSD. These factors do not have statistically significant effects on the CA balance for EURUSD, AUDUSD, TRYUSD and ZARUSD as shown in Figure 2.

The results of (2) shown in Figure 3, contradict the results of Menkhoff et al (2012). The volatility of spot and forward rates are not statistically significant for AUDUSD. Given the statistical significance of the 10-year rate differential, an area for further research would be to test whether the volatility in 10-year rates has an impact on CA dynamics. Indeed, this may be part of the "forward-premium puzzle" and to the authors' knowledge this is yet to be studied. Across the models, statistically significant relationships are not found among pairs involving emerging markets currencies. This may be an inherent consequence of the unpredictability of central bank policymaking in these economies.

Figure 2

	Dependent variable:					
	CA					
	GBPUSD	EURUSD	AUDUSD	JPYUSD	TRYUSD	ZARUSD
	(1)	(2)	(3)	(4)	(5)	(6)
Spot	464,724,623.000	143,467,471.000	-16,749,225.000	1,247,316,015.000*	-2,058,151,338.000	-2,489,894.000
	(100,095,922.000)	(477,268,372.000)	(3,536,792.000)	(182,785,383.000)	(1,886,129,471.000)	(2,870,929.000)
Forward	-464,873,019.000	-143,440,492.000	16,726,740.000	-1,244,868,492.000*	2,058,151,302.000	2,829,183.000
	(100,123,217.000)	(477,635,718.000)	(3,547,746.000)	(182,818,444.000)	(1,886,129,343.000)	(2,920,268.000)
Fdt	-701,760,685.000	-174,771,818.000	15,755,942.000	-11,154,280.000*	157,285,838,232.000	122,013.800
	(130,569,922.000)	(512,710,661.000)	(3,345,888.000)	(1,631,452.000)	(144,351,426,101.000)	(144,588.100)
R10	-89,044.100*	-19,302.410	18,664.380	3,485.050*	-4,849.430	-8,043.329
	(11,679.270)	(60,541.140)	(3,367.981)	(319.313)	(14,567.950)	(15,906.250)
Nassets	0.109*	-0.197	0.008	-1.168***	-0.078	-0.033
	(0.017)	(0.476)	(0.019)	(0.009)	(0.246)	(0.252)
Nliabilities	-0.276*	0.141	-0.009	0.724**	-0.057	0.131
	(0.024)	(0.151)	(0.044)	(0.020)	(0.142)	(0.156)
Constant	265,195.500	182,749.500	-60,196.130	-31,542.540**	-179,991.500	-209,298.300
	(80,780.070)	(357,483.700)	(14,798.880)	(1,204.913)	(253,031.400)	(144,711.000)
Observations	8	8	8	8	8	8
R^2	0.999	0.890	0.985	1.000	0.788	0.903
Adjusted R^2	0.992	0.230	0.895	1.000	-0.485	0.324
Note:						*p<0.1; **p<0.05; ***p<0.01

Figure 3

	Dependent variable:					
	CA					
	GBPUSD	EURUSD	AUDUSD	JPYUSD	TRYUSD	ZARUSD
	(1)	(2)	(3)	(4)	(5)	(6)
Spot	-52,147,705.000	-70,409,013.000	-16,666,996.000**	-22,415,361,819.000	-2,591,434,485.000	-1,431,687.000
	(703,957,708.000)	(161,145,089.000)	(851,878.800)	(52,031,762,951.000)	(2,333,720,855.000)	(2,957,785.000)
Forward	52,563,581.000	70,594,268.000	16,638,349.000**	22,417,724,320.000	2,591,434,294.000	1,881,956.000
	(704,140,071.000)	(161,085,040.000)	(853,478.600)	(52,020,274,719.000)	(2,333,720,480.000)	(2,898,831.000)
Fdt	230,563,977.000	55,522,815.000	15,488,168.000**	177,253,277.000	198,193,036,658.000	85,706.240
	(933,033,775.000)	(190,585,861.000)	(746,251.800)	(486,573,956.000)	(178,555,274,055.000)	(182,914.900)
R10	191,019.200	40,424.080	19,732.400**	-17,924.490	-20,870.490	-11,489.870
	(74,827.190)	(23,265.340)	(973.695)	(249,739.100)	(46,421.190)	(38,684.300)
volspot	-1,756,545.000	-907,537.700	-1,374,014.000	-1,691,606,813.000	9,353,666.000	-687,494.200
	(1,575,576.000)	(499,348.600)	(370,208.800)	(3,212,716,581.000)	(17,157,139.000)	(2,044,755.000)
volforward	36,046.300	-950,403.100	1,418,888.000	1,655,237,599.000	-9,682,894.000	187,359.300
	(18,849.320)	(720,868.400)	(372,098.600)	(3,426,129,044.000)	(16,964,928.000)	(4,927,347.000)
Constant	-779,098.800	50,941.050	-66,242.930**	149,552.400	-218,123.300	-172,319.000
	(553,235.200)	(207,420.600)	(3,239.980)	(616,749.700)	(318,513.600)	(203,722.300)
Observations	8	8	8	8	8	8
R^2	0.910	0.965	0.999	0.677	0.829	0.777
Adjusted R^2	0.368	0.756	0.993	-1.262	-0.198	-0.558
Note:						*p<0.1; **p<0.05; ***p<0.01

Conclusion and Possible Extensions

The relationship between CA balances and the common drivers of FX and fixed income carry trades is hetoregenous across countries. From 2010-17, the CA balance for the UK is found to have a statistically significant relationship at the 10% level with the 10-year interest rate differential, net assets and net liabilities. This may indicate a preference for fixed income carry trades in this particular currency pair (e.g funding 10-year Gilt purchases with USD). Given spot and forward FX rates are not significant, there may be another driver of net assets and net liabilities, equity carry trades, which deserves further study. For the same period for JPYUSD, spot and forward FX rates as well as the interest rate differential, 10-year interest rate differential, net assets and net liabilities are found to be statistically significant at various levels. A potential extension to this study would be to examine the effects that Covid-19 had on the carry trade. The data used in this study does not include the effect of Covid-19. Therefore, an extension of the paper could include the years 2020 and 2021 into the dataset to gain an understanding of how and to what degree the carry trade was impacted by Covid-19 and which currencies were affected the most. According to (Feng, et al., 2021), an increase in coronavirus cases results in higher levels of exchange rate volatility. Curcuru et al (2010) states that exchange rate volatility poses a high risk to carry trade investors. Thus, it is likely that the exchange rate volatility caused by Covid-19 had a major effect on the currency markets and thus induced losses for carry traders.

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Reinforcement Learning, Cognitive Scarcity and Behavioural Band-Aids

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"Behavioural interventions such as the 'nudge' have become increasingly popular in the context of health-related choices. While the use of this policy tool relies upon the existence of bounded rationality, remarkably little attention is given to the variables underpinning bounded rationality and the wider decision-making and learning processes. In this essay, Rachel Kane combines perspectives from behavioural and computational neuroscience to explore the role of cognitive load in the socioeconomic gradient of obesity. Kane concludes that the obesity nudge is a mere behavioural band-aid to this complex policy issue; it treats the symptoms of excessive caloric consumption and physical inactivity, rather than attempting to treat the problem at its root through the relaxation of cognitive constraints."

Introduction

'Felix, qui potuit rerum cognosere causas'

'Fortunate, who was able to know the causes of things' (Virgil, 29 BC)

The policy 'nudge' is a behavioural intervention that aims to improve individual welfare by encouraging the selection of a particular choice by strategically manipulating the existing choice architecture. First popularised by Thaler and Sunstein, nudges find their justification in bounded rationality; the limitations of both human knowledge and computational capacity arising from the widespread existence of cognitive biases and heuristics (Simon, 1990; Thaler and Sunstein, 2008). According to Thaler and Sunstein (2003), these constraints on rationality cause individuals to make 'inferior decisions in terms of their own welfare' and necessitate state intervention.

Unlike traditional incentive or law-based regulation, nudges are said to be functions of libertarian paternalism insofar as they do not punish nor forbid the selection of a particular choice. Instead, nudges harness behavioural insights to make the selection of 'better' choices easier. Sunstein (2013) takes the view that modern governments should 'make people's lives easier and get rid of unnecessary complexity'. While this is an honourable goal, nudges are seriously limited in their ability to achieve this due to their ends-focused nature. This essay argues that nudges aiming to tackle obesity are mere *behavioural band-aids* to such a complex policy issue. They fail to account for certain mediating variables in the individual decision-making and learning processes and are thus incapable of generating significant and sustained behavioural changes in this area.

Bounded Rationality as Justification for Nudges

Neoclassical microeconomic theory rests upon the *assumption of homo economicus*; the idea that individuals are utility-maximisers who possess unbounded rationality, willpower, and selfishness (Elahi, 2015). The Behavioural School rejects this positive description of behaviour and instead assumes that cognitive biases and heuristics lead to serious and systematic errors in the decision-making process (Tversky and Kahneman, 1974). These breakdowns in the individual decision-making process, often labelled as 'reasoning failures', result in a divergence between some *theorised* preference-consistent behaviour and the observed (and supposed preference-inconsistent) behaviour (Le Grand, 2022). As the view of normative economics is that the economy should ensure the maximal satisfaction of individuals' preferences, this failure to act in accordance with one's preferences creates 'behavioural market failures' which necessitate a regulatory response in the view of nudging advocates (Sugden, 2017; Bubb and Pildes, 2014).

However, despite their rejection of the Neoclassical positive description of behaviour, advocates of nudges maintain some form of rational behaviour as a normative criterion for policymaking. As the key success metric of a nudge is the degree to which the divergence between the optimal and observed behaviour is minimised, a definition of this ideal behaviour is necessary. The maintenance of this postulate raises serious issues, both ethically and practically in the measurement of 'unrevealed preferences'. Instead of regarding themselves as responsible for inferring and satisfying the latent preferences of the individual, obesity policymakers must detach themselves from the notion of directly interfering with outcomes and instead concentrate their efforts on designing optimal policy responses that enable individuals to make their own 'optimal' choices. The first step in designing such policy responses is understanding the role of various cognitive processes that underpin decision-making and learning, such as executive function.

Obesity Nudges

The prevalence of obesity presents serious threats to the health and well-being of societies and incurs substantial economic costs. In the developed world, there is a socio-economic gradient to obesity, with individuals from lower socioeconomic (SES) backgrounds possessing a greater probability of being obese than their higher SES counterparts (Bickel et al., 2014). As obesity can act as a poverty trap, obesity nudges have been particularly focused on eliminating childhood obesity by aiming to make exercise for children more enjoyable, providing nutrition information to parents, and introducing a 'fat tax' (Seeman, 2011; Oliver and Ubel, 2014).

While obesity is a complex and multifactorial issue, it fundamentally occurs due to the consistent overconsumption of calories and consistent physical inactivity. In the nudging literature, the most common cognitive bias reported in obese populations is the hyperbolic delay discounting of rewards. Also known as present bias, hyperbolic delay discounting refers to the over-valuation of immediate rewards and the under-valuation of delayed rewards. A high discount rate γ, along with a high reinforcement value of food, has been positively correlated with obesity (Carr et al., 2011).

Despite the reliance of nudges on the existence and prevalence of cognitive biases and heuristics as grounds for their justification, the related literature says remarkably little about the variance of the strength of these biases across various cohorts, or indeed which variables mediate the strength of such biases.

Cognitive Scarcity and the Competing Neurobehavioural Decision Systems Model

One potentially pivotal factor that has been overlooked by the advocates of obesity nudges is cognitive scarcity, or the constraints on cognitive capacity due to the imposition of a cognitive load. Cognitive load (CL) refers to the amount of information that must be held and simultaneously manipulated at a given moment. A high CL places a tax on the cognitive bandwidth of the individual, which can result in negative spillover effects in other cognitive domains – it causes changes in judgments and decisions, and harms associative learning (Schilbach, Schofield and Mullainathan, 2016; Frank and Claus, 2006).

The Competing Neurobehavioural Decisions Systems model (CNDS) frames the individual decision-making process as a competition between the impulsive and executive function decision systems (Bickel et al., 2014). The impulsive decision system, located in the limbic and paralimbic regions of the brain, is responsible for the selection of immediate reinforcers, while the executive function (EF) system favours long-term outcomes and is responsible for planning and adjusting behaviour. A high CL, or reduction in working memory capacity, acts to dysregulate the balance between the dual systems. This impairs EF and constrains one's capacity to both establish and persevere with decisions that have healthy outcomes in the present and the future. When the balance is tilted towards the impulsive system, the present bias is exacerbated; the discount rate γ rises and more impulsive choices are selected. High CL is positively correlated with the risk of obesity and other negative health behaviours such as smoking and the use of alcohol and illicit drugs (Appelhans, 2009; Carr et al., 2011; Bickel et al., 2014).

CL is also linked to the SES gradient of obesity; lower SES individuals tend to have more scarce cognitive resources due to the stress, emotional distress and fatigue associated with the scarcity of various resources (Byrd-Bredbenner and Eck, 2020).

An Integrated Neurobehavioural and Neurocomputational Perspective on Obesity

While a high CL exacerbates present bias and leads to the selection of suboptimal health choices, obesity does not occur after the selection of one nor a small number of such poor choices; it is representative of an aggregation of the consistent selection of these poor choices over time. It follows then that obese individuals must experience a breakdown in the action-outcome associative learning process.

The Reinforcement Learning Framework

Reinforcement learning (RL) offers a valuable framework for conceptualising reward-decision choice processes as its algorithms harness neural insights and can explain many sophisticated aspects of human behaviour (Rmus, McDougle, and Collins, 2021). RL is an experienced-driven autonomous learning model where agents look to detect an optimal stochastic policy by approximating the expected utility of various actions. In this framework, the agent undertakes an action $a \in A$ within a state $s \in S$, transitioning them to a new state where the reward is received. The policy π gives the probability that a particular action is taken within the current state space. The reward function is a function of the current state and the action undertaken, given by $R(s, a)$. The goal of the agent is to maximise the discounted cumulative reward. The optimal state-action value function (Q-function) is given by $q_*(s, a) = max_\pi q_\pi(s, a)$. This must satisfy the Bellman optimality condition:

$$Q(s_t, a_t) \leftarrow (1 - \alpha)Q(s_t, a_t) + \alpha(r_t + \gamma(max\ Q(s_{t+1}, a)))$$

This represents the immediate value of the move from state s_t to s_{t+1} and the discounted value of the state-action value of the state s_{t+1}, given the selection of some action a (Blackburn, 2020).

The RL computations have been shown to update estimates of expected values via reward prediction errors (RPEs). An appreciation of this computational framework for behaviour coupled with an understanding of the interactions between the EF and RL neurocognitive domains is vital for conceptualising the inhibited learning that is observed in obese populations, and subsequently designing solutions to improve it (Rmus, McDougle and Collins, 2021).

The EF-RL Relationship

According to Rmus, McDougle and Collins (2021), the executive functioning (EF) system contributes to the reinforcement learning computations in the brain. Thus, the imposition (or sustained imposition) of a high cognitive load may impair an agent's ability to learn from their behaviour. More specifically, EF plays a central role in 'setting the stage' for RL computations in defining the reward function and the value and probability estimation process.

The definition of the reward function $R(s, a)$ is underpinned by higher cognitive processes such as the computational and attentional components of EF. The dimensional computations of the state space, the assessment of transitional probabilities, and both the encoding and retrieval of action-reward associations require huge efforts from the EF system. In the case of probability estimation processes in particular, heuristics are relied upon in order to reduce the complexity of probability assessment. Although heuristics are treated, perhaps paradoxically, as both causes and symptoms of bounded rationality, heuristics in computational settings can indeed be seen as functions of resource rationality; the brain is choosing to optimise its choices given its computational constraints and preferences for trade-offs in accuracy over time (Korteling, Brouwer and Toet, 2018; Lieder, 2013).

However, this tendency to minimise computations and cognitive expenditure will lead to reductions in the accuracy of probability assessments; in choosing to perform fewer interactions and relying on sampling posterior distributions, results will be biased towards the initial value (Lieder, 2013; Tversky and Kahneman, 1974; Courville and Daw, 2007). This is known as the anchoring bias. This failure to update beliefs, and consequently change actions, is a failure in Bayesian reasoning. This is particularly harmful in the pursuit of tasks that involve continuous decisions of a conjunctive character, such as maintaining a healthy and active lifestyle. It has been shown that Bayesian reasoning is indeed reliant on EF functions and is harmed under the imposition of a high cognitive load (Yin et al., 2020). It should also be noted that EF taxation can act to increase the discount rate in the value estimation process, due to a loss in inhibitory control.

Thus, this taxation on EF that is so prevalent in obese and low SES populations may increase the reliance on or the strength of heuristics in probability and value estimation contexts, through an increased reliance on sampling posterior distributions. As the encoding of associations between a reward and its associated state space-action pair is also dependent on EF, the accuracy of such associations is diminished under high CL. Evidence of breakdowns in these reward associations can be seen in the neurobehavioural literature. The ventromedial and orbitofrontal cortices (OFC) are responsible for adapting behaviour, or learning, and maintain reward associations in working memory. The OFC is more flexible compared to the basal ganglia-dopamine (BS-DA) system as it weights the magnitudes of rewards and punishments more accurately, and can influence responses almost immediately (Frank and Claus, 2006). Hypometabolism of the OFC has been implicated in obese populations* (Volkow et al., 2008, 2009).

Model-based and Model-free RL

This increased reliance on heuristics and use of posterior probability distributions is consistent with model-free RL. Humans make decisions both based on prior experiences and forward planning through the cognitive mapping of tasks. Unlike in model-based RL, model-free RL (MF RL) agents do not engage in forward planning and instead rely on a set of stored value estimates. MF RL algorithms have lower computational and working memory demands, but are less responsive to change strategies and are slow to learn (Collins and Cockburn, 2020). Therefore, individuals with lower budgets of executive control, such as some obese individuals and low SES individuals, will substitute towards MF RL due to its low EF demands. The MB RL system is consistent with Kahneman's (2011) fast-thinking but error-prone System 1 and the habitual stimulus-response mechanism of the BG-DA system in Frank and Claus (2006).

Conclusion

This essay has presented clear evidence of a potential cognitive basis for obesity and its socioeconomic gradient. As the executive function system underpins the judgment, decision-making and reward associative learning processes involved in obesity, it is intuitive that policymakers should aim to tackle these underpinning factors and treat the problem at its root. Marginal improvements in this complex policy issue should not be overlooked, but nudges should not be a main policy tool for tackling obesity; in looking to simplify the process of optimal choice selection, advocates of obesity nudges have over-simplified their regulatory responses. The goal should be to relax the cognitive constraints on the individual in order to facilitate better autonomous learning. A relaxation of these constraints would not only have positive implications for obesity outcomes and

* Glucose metabolism is a key marker of normal brain function. Hypometabolism of the medial orbitofrontal cortex (mOFC) in obese individuals refers to a sub-normal level of neural activity in this region for these individuals. As this region is responsible for the assessment of rewards, and the OFC more generally is responsible for maintaining reward associations in working memory, hypometabolism would suggest a down-regulation of this area's functions and a reduction in the accuracy of reward assessments and the retention of such associations in obese individuals.

social mobility; it may have positive spillover into non-economic but important areas, such as daily life functioning and self-care activities.

As an alternative to the current nudging policymaking paradigm, this essay calls for the examination of the 'boosting' paradigm, which concerns itself with the protection of collective cognitive capital (Murphy, 2021). A full treatment of this topic is beyond the scope of this essay, but this framework provides a robust outline for the integration and application of brain and behavioural science into behavioural law. It defines collective cognitive capital, comprised of cognitive development, plasticity, reserve, and resilience, as a key policy metric for autonomy and the fulfilment of the potential of the individual and of society as a whole. The need to mobilise obesity policy beyond the existing paradigm of mere information provision and myopic nudges is urgent; we need durable solutions, not behavioural band-aids.

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A Difference-in-Difference Study of the Effect of Gun Legislation between North Carolina and South Carolina, 1991-2016

Ronan Dunne

Senior Sophister

"Regulation of firearms in the United States of America is a highly publicised and debated issue. As the regulations are predominantly decided at state level, Ronan Dunne investigates the impact of introducing 'stand your ground laws' in South Carolina. 'Stand your ground laws' give individuals the right to use deadly force if they believe themselves to be in danger; it essentially removes the requirement to retreat if possible. Given similar trends in firearm deaths in North Carolina and South Carolina before the introduction of this law, Dunne conducts a difference-in-difference study, concluding that liberal firearm laws are associated with an increase in fireman related deaths."

Introduction

The United States of America is colloquially dubbed the 'gun capital of the world', owing to its extensive gun ownership rate coupled with its liberal firearm legislation encapsulated by the 2nd Amendment, "the right of the people to keep and bear Arms, shall not be infringed" (U.S. const. Amend. II). Civilian firearm ownership is relatively common in the US; at an estimated rate of 120.5 firearms per 100 civilians, placing it highest in the list of 230 countries surveyed in the Small Arms Survey, 2017 (Karp, 2018). Recently, firearm related deaths have become a prevalent and controversial public health debate; accounting for approximately 30,000 deaths in the US in 2017 - a rate of 10 deaths per 100,000 (Centre for Disease and Control and Prevention, 2018).

The regulation of firearms is primarily the responsibility of the State, so long as lislation remains within the bounds of Federal Law. This provides ideal grounds for a difference-in-difference (DD) approach as regulations are applied heterogeneously between States, but homogeneously within States. This paper aims to assess whether more liberal firearm laws, via 'stand your ground laws', have an impact on firearm related deaths in North Carolina (NC) and South Carolina (SC). The proposed treatment effect is the introduction of 'stand your ground laws' in SC on 9 June 2006, which are defined as, "[a] person who is not engaged in an unlawful activity and who is attacked in another place where he has a right to be, including, but not limited to, his place of business, has no duty to retreat and has the right to stand his ground and meet force with force, including deadly force" (S.C. Code Section 16-11-440(C)). NC has no such law, meaning citizens do not have the right to stand their ground in face of danger.

In this paper, trends and levels of firearm related deaths were examined in NC and SC in the years 1991 to 2016. Given that many studies of legislative intervention suffer from confounding variables (Skelly et al. 2012), the impact of legislation introduced in SC was examined using a DD method. This approach mitigates the effects of confounders. Studies of this nature are seldom, and this one is the first to test inter-State gun laws. If proven, this could have major policy implications. Further, it is hypothesized that legislation that allows individuals to stand their ground will induce an increase in firearm related deaths in SC.

Literature Review

Despite gun prevalence in the US commune, research is limited - mostly due to gun lobbying on behalf of the National Rifle Association (NRA), "the NRA officially spends about $3m per year to influence gun policy" and "considerable sums are spent elsewhere via PACs and independent expenditures - funds which are difficult to track" (BBC, 2020). In 1996 the US Congress introduced Dickey Amendment (Rostron, 2018), that redirected funds intended to research gun control. However, in their 2001 paper, Webster et al. found that states with registration and licensing systems are more effective in reducing firearm related deaths when compared to States that have either registration or licensing systems or neither registration or licensing systems. This was done vis-a-vis comparing gun state law categories with guns sold within states after legislation had been enacted 25 cities across the US. Luca et al (2017), adopted a DD to assess the causal impact of waiting periods on gun related deaths. The authors found that 17 states with waiting periods avoid approx. 750 deaths per annum when compared to states with no waiting period in the period 1970-2014. Further, by employing a DD study of the effectiveness of the expansion of the Gun Control Act (GCA) on the federal level, Raissian (2016) finds that limiting access to people with mental health disorders and individuals with previous convictions does reduce homicide vis-a-vis firearms. Both of these studies indicate the more liberal firearm laws are, the more deaths are seen. Moreover, there is no evidence of 'spill over' effects. Moving outside of the US, Langmann (2020) employs a DD with multiple treatments in Canada to assess the impact of legislation introduced between 1981 and 2016 on homicide and suicide by firearm in Canada.

Empirical Approach

The model used in this paper is a DD. One dependent variable is investigated, the crude death rate per 100,000 people. The unit of account are the counties in each State. The independent variables are the post variable, the treatment variable, the DD variable and the population variable. The post variable is a dummy variable which equals 1 if the death rate is between 2006 and 2016 and 0 if between 1991 and 2005. This measures the trend of firearm deaths overtime and is expected to be positive. The treatment variable is a dummy variable which equals 0 if the county is in NC, and equals 1 if the county is in SC. This measures the relative firearm deaths of NC to SC. It is expected to be positive given; NC higher population and larger gun industry. A DD technique was used to construct a quasi-experimental time series analysis to compare SC to NC exposed to the effects of firearms legislation. This variable is expected to be positive, meaning once the legislation is introduced it increases firearm related deaths over the period examined in SC versus NC. The variable population is a control variable, and is added to account for the changes in population over the period examined. The regression model follows that;

$$Deat\hat{h}Rate = \alpha - \beta_1(Post) - \beta_2(Treat) + \beta_3(DD)$$

Secondly, tests are run to determine if the parallel trend assumption holds. Firstly, the relationship is presented graphically. Secondly, a placebo DD regression is run to test the hypothesis that, in 1999, with no treatment effect, there is a zero DD variable.

Description of the dataset

The data used for this research is sourced via the Centre for Disease Control and Prevention (CDC). The data set contains 1,480 observations across the period 1991 to 2016. This data was used as it was readily formatted on the CDC website. NC has 100 counties and SC has 46 counties. Some of the data was suppressed due to confidentiality, amounting to approx. 200 data points being unavailable.

The average death rate in NC decreased by 14.2% following the introduction of the legislation, in contrast SC saw an average decrease of 2.32. Further insight into this is provided in Figure 1. This shows the distribution of deaths in the two States before and after the legislation introduction. Pre-legislation deaths in NC are uniformly spread out. Post-legislation, they are positively skewed. Interestingly, post-legislation, SC sees more outliers at the extreme values. This is expected, and represents an increase in firearm deaths in SC.

The sample is large enough that real inferences can be drawn from the regression. The parallel trend assumption data is also sourced vis-a-vis the Figure 2. From which, after the legislation is introduced, we see a clear deviation in death trends between NC and SC. This data is on the State level, that is each year takes the crude death rate per 100,000 NC and SC. From Figure 2, we see the parallel trend assumption is upheld, with similar death trend levels similar up until the intervention in 2004. Both NC and SC firearm deaths were on a downward trajectory, had SC not implanted a 'stand your ground law' it is assumed they would have continued on this path.

Summary statistics are presented in Figure 1.2. This shows the minimum (min), maximum (max), median, mean, standard error of the mean, variance and standard deviation (s.d) for the years 1995, 2000, 2005 and 2010. This is to show the trend over the time period. Across the 4 years examined, both NC and SC mean is greater than the median, indicating that deaths are positively skewed. This highlights that the complexion of deaths did not change over the period examined, both pre and post-treatment. This confirms the results in Figure 1. The mean death rate in NC remains stable over the 4 years, decreasing by approx. 4.01% (1995-2010), while in SC there is a 26% increase from 1995 to 2010. The s.d of deaths in NC is greater than SC in every year but 2005 (where the difference is negligible), representing a more dispersed death rate. Taking 2000, NC s.d means 95.4% of the death rates lie in between ±33.06 s.d of the mean. Conversely, in SC 95.4% of deaths lie within ±23.04 s.d of the mean in 2000. Interestingly, NC has more extreme values with the max death rate reaching 101.00 in 2010 while the max death rate in SC was 63.00 in 2010. This leads to a wider range of deaths in NC compared to SC. The NC range for the years are 90, 85, 83 and 91 respectively. Meanwhile, the SC range for the corresponding years are 40, 38, 48, and 53. This cements the hypothesis that SC deaths are more clustered around the mean.

Empirical Results

The results of the three models used are shown in Figure 3, with robust standard errors shown in parentheses. (1) is the simple DD regression model with no control variables.

$$Death\hat{h}Rate = 17.595 - 2.452(Post) - 0.561(Treat) + 2.432(DD) \tag{1}$$

The R^2 and the adjusted R^2 are both very low, 0.027 and 0.025 respectively, see Figure 4. The R^2 indicates that the independent variables account for 2.7% of the variation in the death rate. This indicates that the independent variables are not explaining much of the variation in death rates over time. However, we see that the post variable is negative, and statistically significant at the 1%. This indicates that firearm deaths were trending downwards overtime regardless of the treatment. The treatment variable is negative but statistically insignificant. Importantly, we observe a positive and statistically significant DD variable at the 1% level. This indicates that after the legislation was introduced there was a real increase in firearm related deaths in SC versus NC. Further, the F-statistic is significant at the 1% level, indicating the joint significance of the model. This indicates that the model holds predictive power in spite of the low R^2 and adjusted R^2. Figure 5 presents the difference-in-difference table in a 2x2 matrix, and shows a slight increase in firearm deaths in SC versus NC. This confirms the original hypothesis that 'stand your ground laws' increase firearm related deaths.

$$Deat\hat{h}Rate = 20.100 - 1.900(Post) - 0.403(Treat) + 2.368(DD) - 0.00002(Pop) \quad (2)$$

The regression model is run again, as seen in (2), with the control variable population to account for population changes between the two periods examined. Here we see the R2 is 0.186, meaning that 18.6% of the variation in firearm deaths is being explained by this model. Further the adjusted R2 indicates the penalty for adding the new variable, equalling 0.184 in model (2). This indicates that adding population does increase the descriptive power of the model. Furthermore, the F-Statistic remains statistically significant at the 1% level, indicating the joint significance of the model. The post variable remains negative and statistically significant at the 1% level. Although, the DD decreases in value to 2.268, and is statistically significant at the 1% level. The variable population is negative and statistically significant at the 1% level. Model (2) appears to improve the robustness on model (1).

Model (3) is run to confirm the parallel trend assumption. It is a placebo DD, with the pre-treatment variable being 1998 and the post variable equalling 2000. We see all three independent variables are statistically insignificant, this confirms the parallel trend assumption indicated by Figure 2. Although the variables are non-zero their statistical insignificance signals that the parallel trend assumption is upheld.

Therefore, the results from model (1) and its extension, model (2), have policy implications given their robustness. The results are in line with Luca et al. (2017), but at odds with Langmann (2020). The results indicate that liberal firearm laws increase the firearm death rate. As seen, by introducing 'stand your ground laws' SC saw an increase in firearm deaths. Should a State want to reduce firearm deaths, stand your ground laws should be revoked.

Discussion of Possible Extensions

The above model could be extended. Firstly, more robust checks for the internal validity of the model could be discussed. The treatment and control group could be tested to see the response to some non-related variable (Rosenbaum, 1987); such a factor could be suicide rates over the same period. Also, a similar but unrelated control group could be implemented to account for a real change in NC deaths versus this new control group.

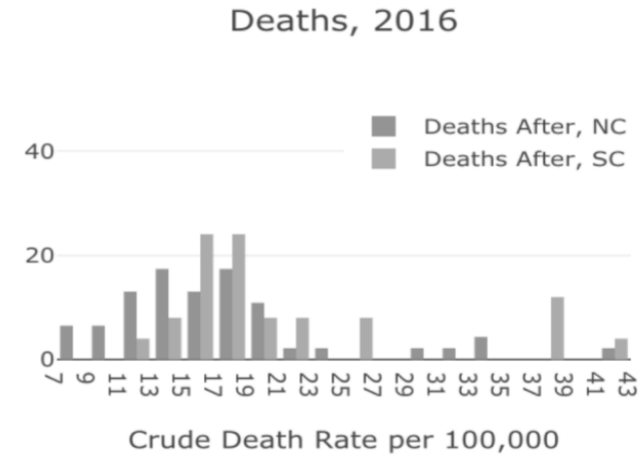
Moving away from sensitivity tests, more control variables could be added if they were available. GDP per capita of each County of each State could be added to account for changes in income over the period. Dummy variables to test for the effect on males, females and minority groups could also be added to assess if the legislation disproportionately impacts minority groups. This would have policy implications if shown to have a real impact. Further, the response to the treatment was not immediate, suggesting that there may be other factors influencing gun related deaths in NC and SC. This infers that a Generalised Method of Moments (GMM) model, as in Blundell and Bond (1998), could be used to have a lagging variable as the dependent variable, where the death rate lags. Indeed, this seems intuitive given the slow impact that policy implementation can have; especially given the strong cultural link between firearms and the US. Lastly, an extension of this study could be applied if SC repeals the 'stand your ground laws', as in Leary (2009), to assess the 'treatment reversal' effect; if the law is repealed do we see a reversal of the effect.

Conclusion

The results in model (1) show that liberal firearm laws increase firearm deaths. This is intuitive as if citizens are given the right to 'stand their ground' and use deadly force, they inadvertently will. A major caveat of this study is that the response to the legislation was not immediate. A GMM model was proposed to counter this but not explored. Indeed, with any natural or quasi-experimental experiment extrapolation of results is difficult. Internal validity is often inversely related to external validity. Nonetheless, this paper aimed to prove that more liberal firearm laws increase firearm deaths vis-a-vis a DD approach. Model (1) showed that SC experienced a statistically and economically meaningful increase in deaths after 2006. The robustness of model (1) motivated a new model, (2), which improved the descriptive power vis-a-vis the R^2 and adjusted R^2. A battery of robustness tests were explored, including the parallel trend assumption graph, the placebo DD along with robust standard errors. There are no 'spill over effects' to be concerned about as this paper did not test the restriction of firearm purchases in neighbouring States. Overall, this paper has proved what it set out to do, that more liberal firearm laws are associated with an increase in firearm related deaths.

Appendix

Figure 1.



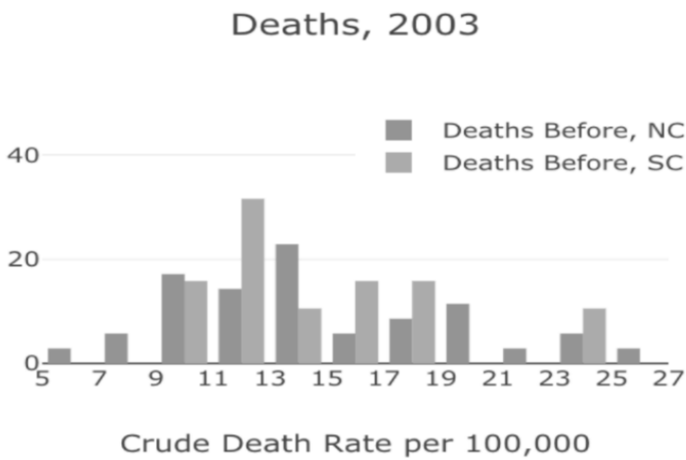
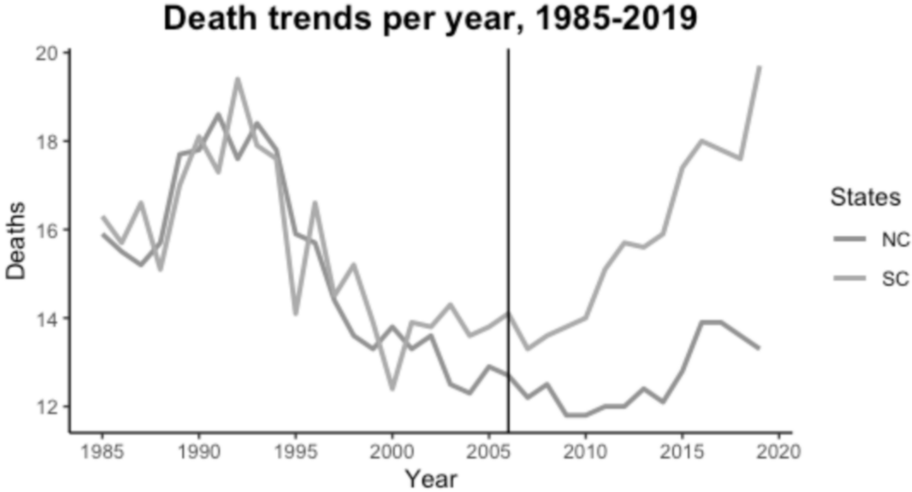


Figure 2



Firearm deaths, Figure 3

	Deaths: NC and SC		
	(1)	(2)	(3)
Post variable	-2.452***	-1.900***	0.317
	(0.397)	(0.363)	(1.362)
Treatment variable	-0.561	-0.403	1.351
	(0.519)	(0.478)	(1.935)
DiD	2.432***	2.268***	-1.903
	(0.707)	(0.646)	(2.760)
Population		-0.00002***	
		(0.00000)	
Constant	17.595***	20.100***	16.237***
	(0.306)	(0.340)	(1.076)
Significance levels	*p<0.1;	**p<0.05;	***p<0.01

Descriptive Statistics, Figure 1.2

North Carolina Deaths

	1995	2000	2005	2010
min	10.00	10.00	10.00	10.00
max	100.00	95.00	93.00	101.00
median	16.00	16.00	15.00	16.00
mean	22.19	22.15	21.05	21.30
SE.mean	2.68	2.65	2.37	2.48
var	302.60	273.34	235.27	263.55
std.dev	17.40	16.53	15.34	16.23

South Carolina Deaths

	1995	2000	2005	2010
min	10.00	10.00	10.00	10.00
max	50.00	48.00	58.00	63.00
median	15.50	19.50	21.00	21.00
mean	22.06	22.38	24.47	25.24
var	194.41	132.78	244.49	260.29
std.dev	13.94	11.52	15.64	16.13

Figure 4

	Deaths: NC and SC		
	(1)	(2)	(3)
Observations	1480	1480	
R2	0.027	0.186	
Adjusted R2	0.025	0.184	
F Statistic	14.03***	84.65***	
	(df=3, 1476)	(df=3, 1476)	

Significance levels *p<0.1; **p<0.05; ***p<0.01

Difference-in-Difference Table Model (1), Figure 5

	Pre	Post	Difference
South Carolina	17.034	17.014	-0.02
North Carolina	17.595	15.143	-2.452
Difference	-0.561	1.871	2.432

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Has North Carolina's Community Advantage Program Caused an Increase in black homeownership?

Thomas Fleming
Senior Sophister

"The unequal distribution of wealth and opportunity is a constant concern for economists. Often tools for combating this inequity are theoretical and the empirical evidence is thin. Thomas Fleming breaks this trend by looking at the efficacy of a program encouraging black home ownership in North Carolina using a powerful econometric model called Difference in Differences. Fleming compares the home ownership rates of North Carolina to Georgia during the implementation of the Community Advantage Program to show that the program has signifantly increased black home ownership in North Carolina."

Introduction

Racial inequality in the United States has been a persistent crisis throughout the country's existence. As a result of historically unequal access to housing, justice, healthcare, education, and employment; today's black youth face significantly poorer life opportunities than their white counterparts. The racial wealth gap is the disparity in median household wealth between black and white households (Amadeo, 2021). It marks "the greatest degree of racial inequality" - with Black families owning about one eighth the assets of White families (Conley, 2000). Since "less wealth translates into fewer opportunities for upward mobility" (Hanks et al, 2018) it is clear that the cycle of inequality, originating from the wealth gap, is self-perpetuating.

To make any significant progress in closing the racial wealth gap, intentional policy interventions are required (ibid). Proposals for such intervention are plentiful and range from baby bonds (bonds for black children valuing between $500 and $50,000 available to the individual at the age of 18) to a universal basic income and even federal job guarantees (ibid). These proposals all have unique virtues and pitfalls. The United States could well benefit from wider trials in which they are applied regionally. In the meantime, these proposals remain simply ideas yet to be truly tested.

One proposal that is testable has been offered by Catherine Ruetschlin, senior policy analyst at Demos. Ruetschlin acknowledges that home equity is a large percentage of most families' wealth. As a result, increasing minority homeownership is seen as critical to closing the wealth gap (Amadeo, 2021). In an interview with Forbes magazine, Ruetschlin identified North Carolina's Community Advantage Program (CAP) as a good model to help reduce the part of the racial wealth gap stemming from homeownership (Shin, 2015). The Community Advantage Program was introduced in 1983 to provide "responsibly underwritten home loans and low down payments" to low and moderate-income and minority homeowners (UNC, 2021) with the intention of improving homeownership among this demographic.

This paper will test Ruetschlin's hypothesis that the program increased black homeownership in North Carolina. If this hypothesis is proved to be true- that this program did indeed increase black homeownership, the implications for nationwide policy interventions will be significant. In a time where the new Biden administration has pledged to address the racial wealth gap (Epperson & Fox, 2021), finding workable, impactful policies could bring about dramatic changes to modern America.

Literature Review

From insight into the relevant literature on the matter, there is reason to be hopeful that the CAP improves black homeownership and shrinks the racial wealth gap itself.

The Urban Institute has provided a 5 point framework to reduce the racial homeownership gap (McCargo et al, 2019). Of their recommendations, two include factors common to the CAP: to strengthen access to and capacity of homeownership CDFIs (lending to low income earners) and to increase visibility and access of down payment assistance (ibid). Given that these proposals are deemed to be desirable towards reducing the homeownership gap, this suggests Ruetschlin's hypothesis might well be true.

Baradaran (2020) prophesies that the racial wealth gap can indeed be diminished by means to improve black homeownership. The author identifies a positive feedback loop that sees increased home ownership leading to an increase in wealth. Increased home ownership in a community leads to an increase in home values in the area. This increase in value increases wealth over time. Which in turn generates a growing tax base. Finally, this results in better schools which lead to higher incomes in the future. If what Baradaran identifies is true, the value of seeking policies to increase black homeownership is evident.

Empirical Approach

$$Y_i = \beta_0 + \beta_1 NC_i + \beta_2 1990_i + \beta_3(NC_i * 1990_i) + u_i \qquad (1)$$

A DiD model will be used to test whether the CAP caused an increase in black homeownership. DiD models test whether there was a significant change in a treatment group across time periods, with respect to a control group.

The level of black homeownership in two different states in 1980 and 1990 as CAP began in 1983. These states will be North Carolina, where the program was introduced and Georgia (where there was no such program), the control. Georgia was selected as an appropriate control group as a result of its similar sized black population (< 12% difference), median house price (< 3% difference) and median income (<4% difference) to North Carolina in 1980 (Census Bureau, 1993).

The regression equation is indicated by Equation 1. Y_i represents the dependent variable, black homeownership. It is black homeownership that we are looking to measure for given years and states. β_0 represents the intercept of the regression line. This shows what the level of black homeownership would be if the dummy variables NC_i and 1990_i both = 0, i.e. the level of black homeownership for Georgia in 1980. The independent variables are NC_i and 1990_i . NC_i is a dummy variable that = 1 for observations recorded from North Carolina, the treatment group and 0 for observations from Georgia. β_1 captures the difference in black homeownership levels for observations recorded in North Carolina relative to those recorded in Georgia. 1990i is a dummy variable that = 1 when the observation is taken from 1990 (after the treatment) and 0 in the pre-treatment period. β_2 captures the difference in black homeownership levels for both states in 1990 relative to 1980 levels. Finally the equation includes an interaction term, $NC_i * 1990_i$. This takes the value of 1 when both NC_i = 1 and 1990_i = 1, else 0. The coefficient of this term, β_3 captures the effect of the treatment in changing black homeownership levels by measuring the difference in average outcome in the treatment group before and after treatment minus the difference in average outcome in the control group before and after treatment (Albouy, 2004). This is therefore the coefficient of interest in this study.

Following analysis of this model I will add in more regressors in order to examine whether the treatment effect is consistent as the variation in black homeownership is better explained. These additional regressors are household rent and household income.

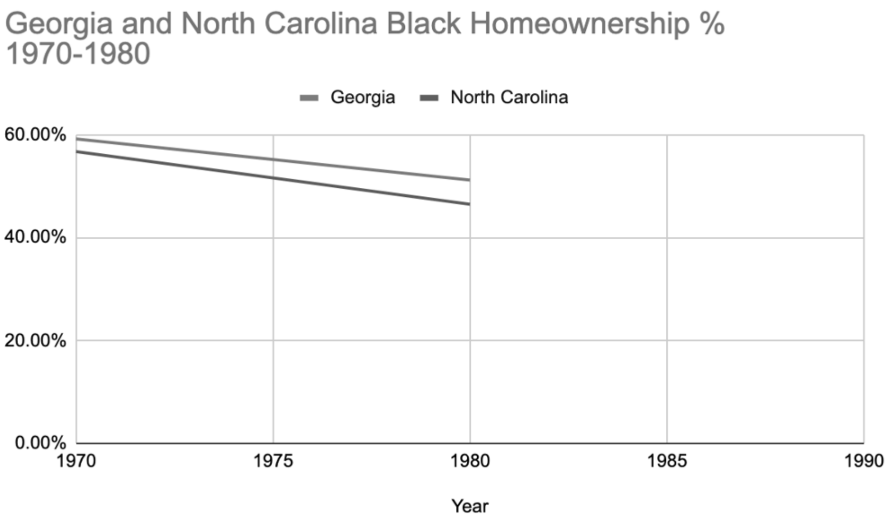
It is Ruetsclin's belief that the CAP caused an increase in black homeownership. I will therefore be testing her hypothesis in this paper:

$H_0 : \beta_3 = 0 \rightarrow$ the treatment did not have a positive effect on black homeownership

$H_1 : \beta_3 \neq 0 \rightarrow$ the treatment caused a positive impact on black homeownership

The critical assumption of modelling using a DiD model is in the absence of treatment, the treatment group would have developed in the same way as the control group over time. In order to examine this, I regarded the changes in black homeownership in Georgia and North Carolina between 1970 and 1980, before the treatment program was introduced. The results are exhibited in Graph 1:

Graph 1



Data Source: IPUMS (2020)

Between 1970 and 1980, the proportion of black homeownership in North Carolina decreased with an almost parallel trend with Georgia. We can therefore assume that in the absence of treatment, the developments to black homeownership proportions would continue to be parallel in 1990. This assumption will be tested later for a greater degree of certainty.

Description of the Dataset

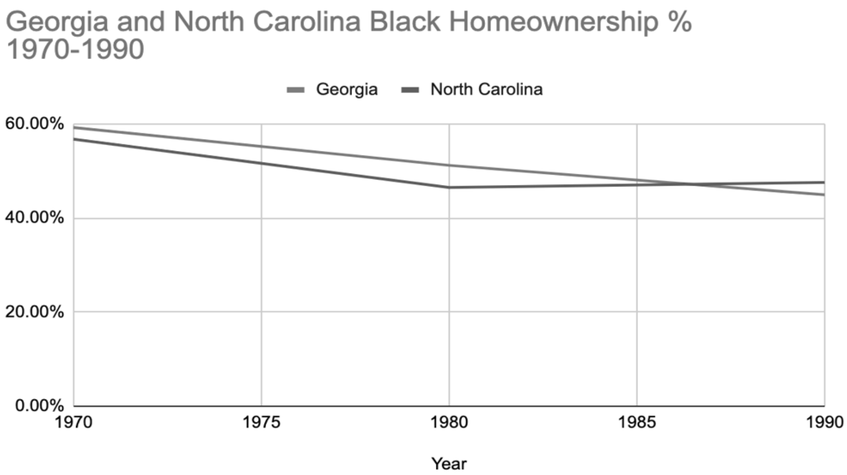
The data used for this project was sourced from Integrated Public Use Microdata Series USA (IPUMS). IPUMS provides census and survey data for the United States. This data includes a wide range of available variables to specify. The variables selected for this paper were years (preselected as either 1970, 1980 or 1990) and states (Georgia and North Carolina only) and ownership (a dummy variable taking value 1 when the property is owned and 0 when rented). In addition, household income and rent were added in order to provide state fixed effects in subsequent regressions. Race was preselected as "Black/African American/Negro," therefore all observations in the data set relate exclusively to 'black' individuals. There are 5546 observations in total. These are taken from a 1% sample of the two states' black populations. This was chosen since a random sample does not take into account any individual specific factors in the selection process. This meant that there was no pre-existing bias from the data set. A sample of this size was selected as it was large enough to offer results that could potentially reflect a significant change in ownership.

The mean homeownership across all observations (both states, both years) was 47%. The mean level of black homeownership in North Carolina (across the two periods) was 47% while for Georgia it was 47.6%.

The mean for Georgia fell from 59.19% in 1970 to 51.17% in 1980 to 44.9% in 1990. Across the same periods, the black homeownership rate in North Carolina fell from 56.72% (1970) to 46.45% (1980) before rising to 47.55% (1990).

The change in average levels of black homeownership for each state from 1970-1990 is shown in Graph 2:

Graph 2



Data Source: IPUMS (2020)

Empirical Results

Table 1

(All models n = 5546)	*Black homeownership level (Y)*		
Variable	*1)*	*2)*	*3)*
STATE	**-0.04718 ***	**0.007853 .**	**0.0132 .**
	(0.01987)	(0.01444)	(0.0135)
YEAR	**-0.06261 *****	**-0.1812 *****	**-0.07055 *****
	(0.01846)	(0.01381)	(0.01349)
	0.07361 **	**0.04634 ***	**0.02559 .**
STATE x YEAR	(0.027)	(0.01971)	(0.01846)
		0.002518 ***	**0.002476 *****
RENT		(0.00003745)	(0.00003508)
			-0.000007882 ***
HOUSEHOLD INCOME			(0.0000002752)
R^2 *value each model*	0.001621	0.4383	0.508

(* represents significance at the 10% level, ** significance at the 5% level and *** significance at the 1% level)

Table 1 shows the coefficient estimates for the regressors in each model as well as their respective standard errors below.

The results of the DiD model (1) show that the Community Advantage Program had a positive effect on black homeownership levels. This is illustrated as the DiD coefficient, β_3 , is positive. The value of 0.07361 indicates that the treatment in North Carolina increased black homeownership levels by approximately 7.4% from 1980 to 1990 relative to Georgia over the same period.

The DiD estimator is shown to be significant at the 10% level in the first two models as the p value of the two-tail t-test < 0.10. In this way the null hypothesis, that the treatment would not have a positive effect on black homeownership, can be rejected. Meanwhile the alternative hypothesis, that the treatment caused a positive impact on black homeownership, failed to be rejected. This aligns with the policy recommendations of McCargo et al (2019); improving access to lending and down payment assistance reduces the racial homeownership gap.

However, as state fixed effects were added into the specifications (2) and (3), the size and significance of the DiD estimate diminished. This is because the variation in black homeownership levels was increasingly better explained with the addition of the regressors. This is illustrated by the fact that the adjusted R squared value for the regression increased from 0.001621 (in 1) to 0.4383 (2) to 0.508 (3). The significance of the estimator is diminished by the additional regressors in (3) to such an extent that it is no longer statistically significant at the 10% level. This indicates that perhaps as the variation in black homeownership is better addressed by the regression, the impact of the treatment is realised to be lesser.

Nonetheless the results of this study must not be ignored. Considering the fact that household wealth marks "the greatest degree of racial inequality" (ibid), policies shown to have a positive effect on black homeownership should be paid attention to. At a time where the US government has expressed a commitment to address the racial wealth gap, programs like this should be studied in depth. If it can be shown with greater evidence that improving access to lending and downpayment support improves black homeownership (as Ruetschlin hypothesised), programs like this should be replicated across the United States.

Checks and Tests

In order to test the assumption of parallel trends I performed what is known as a "placebo" test. For this test, I performed an additional DiD estimation using a "fake" treatment group, that is, a group that I knew was not affected by the program (Gertler et al, 2016). In this instance I chose to test whether there was a significant effect to explain the changes in black homeownership levels for the same two states between 1970 and 1980. Given that the Community Advantage Program was introduced in 1983, there was no reason to suspect that there would be a significant treatment effect. The results of the placebo test are shown in Table 2.

Table 2

Variable	*Black homeownership level (Y)*
STATE	**0.01759**
	(0.02364)
YEAR	**-0.06915** ***
	(0.0226)
	-0.06477
STATE x YEAR	0.03082

(* represents significance at the 10% level, ** significance at the 5% level and *** significance at the 1% level)

Table 2 shows the DiD coefficient is not significant at the 10% level. Given that there was no significant induced change between the states over the two decades, this provides confidence towards the parallel trends assumption. In the decade before the treatment, there was no reason to suspect that changes in the two states' black homeownership levels were not aligned.

Heteroscedasticiy occurs when the variance of the error term (conditional on regressors) in a regression is not constant. Where heteroscedasticity is present the OLS estimator can no longer be considered efficient. The Breusch-Pagan Test examines whether heteroscedasticity is present with a null hypothesis that the variance of error term conditional on regressors is constant and an alternative hypothesis that it is not. For this regression, a Breusch Pagan Test was undertaken in R providing the following results in Table 3:

Table 3

studentized Breusch-Pagan test
data: didreg
BP = 4.1971, df = 3, p-value = 0.241

Given that the p-value is not less than 0.05, we fail to reject the null hypothesis. We do not have sufficient evidence to say that heteroscedasticity is present in the regression model.

Evaluation

The results provided by the latter regressions carried out in this study indicate that the model was better explained with added regressors. This was to the extent that the treatment effect was diminished to the point of relative insignificance. In this way this model would likely be even better explained by a greater degree of complexity - for instance accounting for the forms of renting or by holding local-specific factors, such as access to credit, constant.

There are several intrinsic limitations to the DiD technique. For one, it cannot be verified with certainty that the treatment assigned to North Carolina (the CAP) was entirely exogenous to the low levels of black homeownership in the state. This is an important assumption that this paper has not verified. If the program cannot be seen as exogenous, the degree to which a clear causal relationship can be identified is limited. In addition, with such a large-scale consideration as homeownership level, it is difficult to convincingly attribute the difference between the two states' results to just one program. Finally, the proportion of the population accounted for in this study was small and there is no guarantee that the proportion of people included in the study who received support from the CAP was substantial.

Considering these limitations, extensions of this study might fare better using panel data surveys in order to better gauge the differential ease/difficulty individuals face in buying a home. This could be done in the form of a comparison of individuals: some receiving support from CAP, others not. These individuals would all have similar rents and incomes and be based in the same state (North Carolina). In following their opportunities to buy homes, a more insightful study could be drawn. This would be without the same constraints of uncertainty, scale or location specific factors.

Conclusion

This paper has explored the impact of the CAP on the levels of black homeownership. Through modelling a regression of black homeownership levels using a DiD study of North Carolina and Georgia between 1980 and 1990, this paper has found the program to have had a significant positive effect on improving black homeownership levels. Although this result was shown to be less significant as the variation in black homeownership was better explained, this is no reason to ignore the CAP. Rather, it highlights a need for further inspection into the program's utility. In a time where the racial wealth gap appears to be growing (Schermerhorn, 2019) rather than shrinking, programs like this cannot be ignored.

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The Impact of the Removal of Milk Quotas on the Viability of Irish Dairy Farms from 2007-17

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"The dairy farming industry in Ireland has evolved through significant changes in recent decades. Robert Tolan examines the impact on Irish dairy farmers' income of removing quotas on milk production. Quotas were an established element of EU agriculture policy before their removal in 2015. Now, Glanbia seeks to utilize quotas during peak months of dairy production. Tolan discusses the heterogeneities between farm types and outlines how the differences between farms may affect the growth of farmers' income after the removal of quotas. He concludes by highlighting that the Irish government should intervene to prevent the implementation of Glanbia's quotas in the interest of Irish farmers."

Introduction

The liberalisation of the Irish dairy industry in 2015 after thirty years of production quotas was one of the most important events in Irish agriculture since the country's accession to what was the European Economic Community (EEC), now European Union (EU) (Leavy, 1991). The goal was to allow farmers to expand and achieve economies of scale to improve economic and environmental sustainability (O'Connell, Egeraat, Enright, & Pitts, 1997). This paper seeks to add to the existing research by combining Teagasc, the semi-state body responsible for agriculture, data compiled in the National Farm Survey (NFS) with Central Statistical Office (CSO) data. To date, the literature regarding the NFS has focused on one year at a time. This paper expands this reach to ten years, namely 2007-2017, at a time when the industry faces another crossroads: the possible return of quotas set by milk processors (O'Donnell, Glanbia milk supply management 'first step to new quota' – IFA, 2021). To contextualise results, CSO manufacturing milk price data, the price paid to farmers, as well as CSO data on total milk sales are combined with the microeconomic data the NFS provides. To the author's knowledge, this study is the first to combine the NFS with other surveys in order to test whether the viability of dairy farming increased in a free market.

Literature Review

The study is motivated by a family background in dairy farming in remote areas. The last two hundred years of the family's farm have seen the development of Irish farming from a disparate collection of mixed farms, focused on raw material exports to the British empire, to a highly specialised industry concentrated on high value exports of food products (Bell & Watson, 2014). In the 1980s, the farm switched to dairy farming shortly after Ireland's accession to what was the EEC, now EU, in pursuit of the stable income stream promised by milk quotas. Quotas were introduced in member states to ensure a stable supply of milk and other agricultural products in the EEC so that inflation could be tamed and agricultural self-sufficiency eventually achieved. In 2012, the EU announced that the quota system would be wound down over the next three years (Petit, et al., 2012). In 2015, the dairy industry was liberalized to allow all farmers to fully pursue their business ambitions. Today, the industry is examining the effects of removing quotas particularly in the context of Glanbia, one of the country's primary milk processors, deciding to introduce a temporary quota system during the peak months of May to August for its suppliers (O'Donnell, 2021).

There is a fear among farmers such a move could become permanent thereby depriving the industry of maximising returns to scale. For these reasons, the removal of milk quotas presents an opportunity to fully examine whether the profitability of Irish dairy farms increased and if heterogeneities exist in how different farm types fared. The author speculates that younger farmers with larger farms with good soil saw the highest increase in income levels after the removal of quotas. Hennessy and Moran's (2015) examination of the viability of Irish farming industry based on the NFS results from 2015 is typical of the existing literature. Viability is measured in terms of on-farm income to ensure results are not biased by additional jobs held by farmers in areas with poor soil. The study is conducted across dairy; tillage, cattle and sheep and location are examined on a regional basis. The model itself classifies location by region rather than soil type thus losing some of the differences in soil quality within counties.

Hyland et al (2018) consider Irish farms in terms of profitability and environmental sustainability in the context of the removal of milk quotas. They find, using cluster analysis, that considerable heterogeneity exists as to how farms responded to the withdrawal of quotas. In Less Favoured Areas (LFAs) i.e., farms with low productivity land, economic or environmental sustainability did not improve. In all other farm areas, profitability increased and emissions decreased as increased profitability led to investment in environmentally friendly technology. However, this study is limited to farms in the NFS

2012 data set meaning it only captures farms when quotas were being gradually eased.

Empirical Approach

Based on the existing literature, the approach taken is to regress income against farm size, labour, investment, herd size, grants, total costs and the gross margin. Farmers are confronted with three decisions: the size of the herd, average number of labour units used (measured in people) and how much to invest on an annual basis. They have no control over grants and subsidies, termed grants for the remainder of the paper, and feed prices and fuel expenses, the majority of total costs. Gross margin captures gross profit minus direct costs which serves as a very specific measure of farm profitability. Using family farm income, termed income, as the dependent variable has the advantage of accounting for the interplay between expanding work hours on the farm or in a part-time job.

In any farm, land is the main input. The larger the farm, the more opportunities there are to achieve economies of scale and thus higher incomes. Hours worked is a measure of the effort put into the farm. For older farmers, this should be lower due to the infirmities of old age but it should also be lower for those with second jobs. Investment increases the efficiency at which land and animals are turned into profit. Grants is another aspect of income for farmers. Those in LFAs received additional grants which increase their income despite the poor quality of the land. Total costs accounts for non-investment expenditure, this will be higher for larger herds due to additional feed costs, a possible disincentive to expand. Gross margin is gross profit minus total costs, a measure of the efficiency at which the farmer converts income into profit, a measure of management expertise. Note, this indirectly captures the current price and has been chosen over including the price directly to measure management expertise. This leads to a baseline income equation of the form:

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + u_i \quad (1)$$

In contrast to Hennessy and Moran (2015) as well as Hyland et al (2018), further variables are added to the income function in order to test their significance and to investigate what heterogeneities exist, if any. A dummy variable for year based on the introduction of quotas, equaling 1 if 2015 or later and 0 otherwise, is added to measure whether market dynamics changed after full market liberalisation.

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Year)_i + u_i \quad (2)$$

Herd size and investment are the most easily changed inputs and so there is likely some interaction between them and the removal of quotas, a contrast to the significance between them and the introduction of quotas as described in Keane (1991).

$$\beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Year)_i + \beta_9(Herd * Year)_i + \beta_{10}(Investment * Year)_i + u_i \quad (3)$$

To further investigate heterogeneities in the data, (2) is expanded to include price from the CSO data to investigate whether farmers reacted directly to the primary means of conveying market information, prices.

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Year)_i + \beta_9(Price)_i + u_i \quad (4)$$

The interaction between price and herd size is controlled for in (5) to measure whether farmers are more sensitive to price changes rather than the removal of quotas.

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Year)_i + \beta_9(Price)_i + \beta_{10}(Herd * Price)_i + \beta_{11}(Price * Year.Dummy) + \beta_{12}(Herd * Year.Dummy) + \beta_{13}(Herd * Price * Year.Dummy) + u_i \quad (5)$$

Farmers may react differently to market changes based on herd size; a larger herd may mean there is less room to expand. For this reason, a dummy variable for herd size, either large or small, is introduced.

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Year)_i + \beta_9(Herd.Dummy)_i + u_i \quad (6)$$

Similarly, older farmers may be unresponsive to change and so a dummy variable defined at the current retirement age of 66 was defined. The ageing demographic of Irish dairy farmers has been of particular concern from a policy perspective. Older farmers are believed to be less likely to adopt new, more efficient techniques (Moran, 2018).

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Year)_i + \beta_9(Age)_i + u_i \quad (7)$$

A dummy variable is defined at this point to examine whether small and large farms differ in their approach to the removal of quotas.

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \\ \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Year)_i + \beta_9(Land.Dummy)_i + u_i \quad (8)$$

To analyse whether these results differ across location, soil is introduced as a proxy. The NFS denotes soil groups 1 and 2 as ranging from high quality land to good land best for dairy farming while group 3 is poor land. The last group can be assumed to be comprised of Less Favoured Areas (LFAs) which consists of most land on the western seaboard. To analyse this data, soil has been added to (1) as a dummy variable equalling 1 if the soil group is 1 or 2 and 0 otherwise. Soil Time has also been added which equals 1 for good soil after 2015 and 0 otherwise to investigate if returns to good soil changed due to quotas.

$$Income_i = \beta_0 + \beta_1(Land)_i + \beta_2(Labour)_i + \beta_3(Investment)_i + \beta_4(Herd)_i + \beta_5(Grants)_i + \\ \beta_6(TotalCosts)_i + \beta_7(GrossMargin)_i + \beta_8(Soil)_i + \beta_9(SoilTime)_i + u_i \quad (9)$$

The aim is to test the author's hypothesis that farms with good soil saw the largest increase in income after the removal of quotas. Thus, the effects of quotas on a location basis are captured.

Description of the Dataset

The NFS began on an annual basis in 1972 with the goal of collecting financial and physical data pertinent to formulating agricultural policy. The study, administered by Teagasc, offers a rich glimpse into the 1,200 farms that comprise the nationally representative sample. Participation is voluntary and anonymised. In this way, the results lend themselves to panel data analysis which has been used to construct a multiple regression model for the determinants of farm income as well as decomposing how different farm types responded to the end of quotas (Teagasc, 2021).

The data markers pulled from the survey include farm code, year, land (hectares), soil type, labour units, investment, comprised of investment in buildings, machinery and livestock, gross margin, gross profit minus direct costs, income, herd size, grants and subsidies and farmer's age from 2007-17. The farms chosen are dairy farms though a small amount are dairy mixed farms with some investments in arable and beef farming which yields roughly 350 farms in each year giving a sample size of 3,459 farms once datapoints containing farms with no dairy herds are removed. This is often caused by farmers deciding to switch out of dairy farming into another sector but they remain in the dataset for the remainder of the year. The CSO portion of the dataset is composed of annual data on total milk sales in the state as well as the average annual manufacturers' milk price, the price paid to farmers (CSO, 2021). In this way, a novel dataset that combines key measures of farm performance as well as the factors that influence it is created.

The dataset hinges on 2015, the year in which milk quotas were removed. Dummy variables are defined using this point. Average incomes increased from 2008-10 which is striking in the context of the broader Irish economy. According to Carroll et al. (2007) a reason may be that fact farmers, particularly dairy farmers, are low carriers of debt. When the broader Irish economy was highly leveraged during the Celtic Tiger, the farming community continued to practice fiscal prudence. Indeed, the existence of supply controls such as quotas may have sheltered dairy farmers from this leveraging process.

Empirical Results

Farmers with large, labour intensive herds on good soil gained the most income from market liberalisation. Returns on investment increased marginally across all farms. Contrary to the original hypothesis, older farmers saw the largest increase in income. Classifying farms into whether they are large or small finds a statistically insignificant relationship between farm size and the removal of quotas. These insights suggest farm supports should be targeted towards younger farmers in LFAs as they have fared the worst from the removal of milk quotas. The most representative model of farm income is (5) as it captures 93.5% of the data.

Figure 1

Determinants of Farm Income (1) and (2)

	Income			Income		
Predictors	*Estimates*	*std. Error*	*CI*	*Estimates*	*std. Error*	*CI*
(Intercept)	6943.14 ***	602.80	5761.26 – 8125.03	6221.74 ***	613.87	5018.14 – 7425.34
Land	-115.83 ***	11.60	-138.57 – -93.08	-115.81 ***	11.55	-138.46 – -93.17
Labour	-4173.37 ***	422.60	-5001.95 – -3344.79	-4005.81 ***	421.79	-4832.80 – -3178.82
Investment	-0.04 ***	0.00	-0.04 – -0.03	-0.04 ***	0.00	-0.04 – -0.03
Herd	175.18 ***	13.49	148.74 – 201.63	167.33 ***	13.50	140.86 – 193.80
Grants	0.14 ***	0.02	0.10 – 0.19	0.17 ***	0.02	0.12 – 0.21
Totalcosts	-0.35 ***	0.01	-0.36 – -0.34	-0.35 ***	0.01	-0.36 – -0.34
Gmargin	0.93 ***	0.01	0.92 – 0.95	0.93 ***	0.01	0.92 – 0.94
Year.Dummy				2781.84 ***	498.37	1804.70 – 3758.99
Observations	3375			3375		
R^2 / R^2 adjusted	0.932 / 0.932			0.933 / 0.933		

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

The baseline model is very representative of the income equation. As income increases by €175.18 for every additional cow, it suggests farmers should strive for increasing returns to scale to maximise returns. However, this is not logical as it suggests infinite returns to scale exist. Including year as a regressor has marginally improved the fit of the model confirming that the removal of milk quotas had some impact. According to (2), increasing land by 1 hectare reduces farm income by €115.81 and hiring an additional unit of labour reduces farm income by €4,005.81, ceteris paribus. Increasing the herd size by 1 cow increased income by €167.33, ceteris paribus. This suggests large herds yield the most income.

Figure 2

Determinants of Farm Income (3), (4) and (5)

	Income			Income			Income		
Predictors	*Estimates*	*std. Error*	*CI*	*Estimates*	*std. Error*	*CI*	*Estimates*	*std. Error*	*CI*
(Intercept)	6832.28 ***	658.23	5541.71 – 8122.84	-9297.66 ***	1928.86	-13079.51 – -5515.81	5455.60	3423.58	-1256.91 – 12168.11
Land	-115.09 ***	11.50	-137.63 – -92.54	-105.83 ***	11.49	-128.36 – -83.30	-99.96 ***	11.45	-122.41 – -77.52
Labour	-3947.76 ***	420.18	-4771.60 – -3123.92	-3594.32 ***	420.23	-4418.26 – -2770.38	-3352.17 ***	418.93	-4173.56 – -2530.79
Investment	-0.04 ***	0.00	-0.05 – -0.04	-0.03 ***	0.00	-0.04 – -0.03	-0.03 ***	0.00	-0.03 – -0.02
Herd	182.05 ***	14.90	152.84 – 211.25	193.01 ***	13.70	166.15 – 219.88	-70.50	45.97	-160.64 – 19.63
Grants	0.17 ***	0.02	0.13 – 0.22	0.21 ***	0.02	0.17 – 0.26	0.23 ***	0.02	0.18 – 0.27
Totalcosts	-0.35 ***	0.01	-0.36 – -0.33	-0.36 ***	0.01	-0.37 – -0.35	-0.37 ***	0.01	-0.38 – -0.36
Gmargin	0.93 ***	0.01	0.91 – 0.94	0.90 ***	0.01	0.88 – 0.91	0.89 ***	0.01	0.87 – 0.90
Year.Dummy	657.34	966.19	-1237.04 – 2551.71	3963.54 ***	512.53	2958.65 – 4968.44	-763.91	7335.03	-15145.49 – 13617.66
Herd * Year.Dummy	-55.82 **	20.59	-96.19 – -15.46				180.61 *	80.25	23.26 – 337.95
Investment * Year.Dummy	0.02 ***	0.00	0.01 – 0.03						
Price				44049.49 ***	5196.14	33861.59 – 54237.39	1042.40	10117.72	-18795.10 – 20879.91
Herd * Price							790.23 ***	137.04	521.53 – 1058.92
Price * Year.Dummy							3339.99	22749.94	-41265.13 – 47945.11
(Herd * Price) * Year.Dummy							-397.31	246.17	-879.96 – 85.35
Observations	3375			3375			3375		
R^2 / R^2 adjusted	0.934 / 0.933			0.934 / 0.934			0.935 / 0.935		

* p<0.05 ** p<0.01 *** p<0.001

According to Figure 2, the interaction between the removal of quotas and the herd size and level of investment is significant in (3). After the removal of quotas, increasing the herd size by 1 cow decreased income by €55.82 less than before the removal, ceteris paribus. After the removal of quotas, the effect of increasing investment by €1, increased income by €0.02 more than before the removal of quotas, ceteris paribus. Model (4) is a better fit than the baseline, it suggests a 1 cent increase in milk price received will increase income by €440.50 indicating that price is ultimately the main determinant of income rather than the farmer's skill at converting price and costs into gross profit. Taking (5), the interactions between herd and price as well as herd and the year dummy are significant. The relationship between price and the year dummy as well as herd, price and the year dummy are not significant. This suggests the removal of milk quotas did have a statistically significant effect on the returns to increasing the herd. However, the removal of milk quotas did not have an effect on the price's relationship with income. In this way, the removal of quotas did not impact the dairy industry at the most fundamental level, the price and income relationship.

Figure 3

Determinants of Farm Income (6),(7),(8)

	Income			Income			Income		
Predictors	*Estimates*	*std. Error*	*CI*	*Estimates*	*std. Error*	*CI*	*Estimates*	*std. Error*	*CI*
(Intercept)	6067.67 ***	621.60	4848.92 – 7286.41	6119.84 ***	613.11	4917.73 – 7321.95	6161.97 ***	615.05	4956.07 – 7367.88
Land	-116.01 ***	11.55	-138.66 – -93.37	-114.74 ***	11.53	-137.34 – -92.14	-116.38 ***	11.55	-139.03 – -93.73
Labour	-3924.13 ***	424.92	-4757.26 – -3091.00	-4358.61 ***	430.38	-5202.43 – -3514.79	-3999.99 ***	421.73	-4826.86 – -3173.12
Investment	-0.04 ***	0.00	-0.04 – -0.03	-0.04 ***	0.00	-0.04 – -0.03	-0.04 ***	0.00	-0.04 – -0.03
Herd	165.84 ***	13.53	139.31 – 192.37	171.68 ***	13.52	145.18 – 198.19	166.69 ***	13.50	140.22 – 193.17
Grants	0.17 ***	0.02	0.12 – 0.21	0.17 ***	0.02	0.13 – 0.22	0.17 ***	0.02	0.12 – 0.21
Totalcosts	-0.35 ***	0.01	-0.36 – -0.33	-0.35 ***	0.01	-0.36 – -0.34	-0.35 ***	0.01	-0.36 – -0.34
Gmargin	0.93 ***	0.01	0.91 – 0.94	0.93 ***	0.01	0.91 – 0.94	0.93 ***	0.01	0.91 – 0.94
Herd.Dummy	800.18	511.60	-202.89 – 1803.26						
Year.Dummy	2783.75 ***	498.27	1806.81 – 3760.68	2707.84 ***	497.67	1732.08 – 3683.59	2791.86 ***	498.32	1814.81 – 3768.90
Age.Dummy				3005.16 ***	765.39	1504.48 – 4505.84			
Land.Dummy							749.98	499.13	-228.64 – 1728.60
Observations	3375			3375			3375		
R^2 / R^2 adjusted	0.933 / 0.933			0.933 / 0.933			0.933 / 0.933		

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Whether the herd is small or large as well as whether a farm is small or large are not statistically significant. Whereas whether a farmer is below retirement age is statistically significant at the 1% level. Each additional year after retirement increases income by €3,005.14, ceteris paribus, contrary to the prevailing belief that an ageing demographic is making dairy farms less efficient (Moran, 2018). Whether a farm is small or large may be insignificant because both groups have been operating at capacity regardless of quotas. It is possible a large-scale farm may not be able to buy more land and is operating as intensively as possible whereas a small farm may be similarly operating as intensively as possible.

Figure 4

Determinants of Farm Income (9)

	Income		
Predictors	*Estimates*	*std. Error*	*CI*
(Intercept)	5988.20 ***	643.61	4726.29 – 7250.11
Land	-123.27 ***	11.73	-146.28 – -100.26
Labour	-4067.56 ***	423.06	-4897.05 – -3238.07
Investment	-0.04 ***	0.00	-0.04 – -0.03
Herd	170.70 ***	13.54	144.15 – 197.25
Grants	0.15 ***	0.02	0.11 – 0.20
Totalcosts	-0.35 ***	0.01	-0.36 – -0.33
Gmargin	0.93 ***	0.01	0.92 – 0.95
Soil.Dummy	1554.47 **	499.20	575.69 – 2533.24
SoilTime	1669.36 *	763.94	171.51 – 3167.20
Observations	3359		
R^2 / R^2 adjusted	0.933 / 0.933		

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Figure 4 says good soil earns €1,554,47 more than poor, ceteris paribus. After the removal of quotas, good soil earned €1,669.36 more than before, ceteris paribus. Farmers in fertile locations gained the most from the liberalisation of the dairy industry.

Conclusion and Possible Extensions

Dairy farm incomes increased markedly after the removal of quotas in 2015 even amidst the market adjusting to its new structure. There is considerable heterogeneity across how dairy farms fared in the liberalized market. Nonetheless, the removal of quotas has had a generally positive effect on dairy farm incomes. For this reason, the government should prevent the introduction of Glanbia's quota. Earlier versions of the NFS were more limited in the type of data collected concerning investment levels. However, the approach taken in this paper could be extended to 1972-2020 if pre-2000 copies of the NFS can be accessed and the last three years are released. Due to the data available in the dataset constructed, a Cobb-Douglas production function could be constructed to quantify returns to scale in the sector and whether or not these increased with the removal of quotas. To investigate whether the heterogeneities found in the study are country specific, it is critical to expand this analysis to all EU member states. This will shed light on the dairy market structure in Europe which will lead to more effective policymaking at EU level.

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Eurozone Enlargement: Spain's Economy Before and After the Euro

Liam Brady
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"Joining a single currency union like the eurozone comes with economic costs and benefits that each nation has to weigh up. Liam Brady explores these costs and benefits for the Spanish economy since joining the eurozone up until present day. The improvements in economic growth, employment, and fiscal responsibility that came from eurozone membership are balanced against the loss of monetary policy sovereignty which limited Spain's ability to deal with the global financial crisis. Brady goes on to show that this crisis, despite its devastating effect on the Spanish economy, created the pressure necessary to make the long-needed reforms to banking, fiscal policy, and labour markets that has helped integrate the Spanish economy into the European framework."

Introduction

Spain is one of the largest economies in the EU and saw substantial economic growth upon joining the Eurozone. Through membership, the Spanish economy doubled in size, unemployment fell, and prices rose. With the global financial crisis and subsequent fallout, Spain was forced to fundamentally reform its banking sector, fiscal policy, and labour market. Without the Eurozone, and the crash it entailed, Spain would not have the economy it does. In order to understand this process, this paper will look at Spain's journey through the Eurozone, from before joining to the modern day. Overall, Spain was able to grow in the Eurozone to a more competitive economy, although much work remains to be done.

Before the Euro

Before the Eurozone, the Spanish economy had fundamental issues. In recovery from

Francoism, Spain maintained many worker protections that increased business costs. For example, companies were expected to pay high severance to fired workers. Hiring new workers was also expensive, with red tape increasing the cost of legal employment. As such, Spain was characterized by high official unemployment, with many workers unable to get a job, or working in temporary or black-market employment. In the 1990's, official unemployment never fell below 15%, peaking in the mid-1990s at 24% (Spain Unemployment Rate, 2021). The reliance on temporary workers, and the high unit cost of labour, meant that the Spanish labour market was woefully inefficient.

Spanish banking was also severely flawed. Spanish regional governments controlled saving banks, called Caja de Ahorros, that were established to provide alternatives to commercial banks. Eventually, the 45 regional 'cajas' competed with normal commercial banks, providing all the same services. These cajas were poorly regulated and controlled by local politicians, making them considerably less fiscally responsible than commercial banks. Little oversight was given, and the system was rife with corruption and unsound decision making. Caja chairmen were usually local politicians, with little to no banking or financial experience.

Before entering the eurozone, the Spanish current account ran only a small deficit (Spain Current Account, 2021). Entering the Eurozone was expected to facilitate trade with the rest of the EU, as Spain had lower input costs and could seemingly develop quickly. Spain was an early Euro adopter, and expectations were high for the new union.

Entering the Eurozone

Upon entering the Eurozone, the Spanish economy was relatively underdeveloped. Spain had lower GDP per capita than larger economies and relatively high unemployment. With sedated economies like Germany becoming the focus of European monetary policy, Spain had low interest rates relative to the capital requirements for the economy. This encouraged the growth of capital hungry industries, and raised the price of domestic goods, especially assets.

The current account deficit burgeoned under the Euro as investments and goods came into Spain. Investment from around the Eurozone was easier than ever before, and higher returns could be expected from the quickly developing nation. By 2007 the current account deficit accounted for 9.6% of GDP (Spain Current Account to GDP, 2021). These investments helped to bring up Spanish GDP and standards of living over the period. GDP per capita rose from $14,713 in 2000 to $35,366 in 2008 (World Bank, 2019). Hidden within these numbers is high inflation in both goods and assets, with Spain having higher inflation than the Euro average for most of 2000-2009 (Euro Area Core Inflation Rate, 2021). This high demand for goods was also a cause of a high current account deficit.

This economic growth allowed the government to reign in its usual budget deficit. While Spain ran a deficit throughout the 1990's, the government was able to run a surplus from 2005 to 2007 (Spain Government Budget, 2021). This led to Spanish debt to GDP being considerably lower in Spain than the Euro area average. In 2007 Spain had a sovereign debt of 35.6% of GDP, compared to a Eurozone average of 62.2% (Spain Government Debt to GDP, 2019). Although a reduction from the 1990's, the real debt remained constant for most of the period, with the reduction in debt to GDP coming almost entirely from GDP growth.

With low interest rates and large amounts of foreign capital entering the country, Spain quickly saw the expansion of their construction industry. Property values rose as low interest rates financed higher property values and speculators bought property up. Construction became a large employer in the economy, however the demand for housing could still not meet supply. Workers were seeing huge increases in nominal wages and were investing that into housing. Home ownership was some of the highest in Europe and the secondary home market was twice the European average (Romero, 2020). Property taxes allowed the government to tackle debt.

Property Market Crash

Until 2008, the Euro seemed to only help Spain. Unfortunately, the crash of the Spanish property market in 2008 uncovered the unsustainable systems behind the economy. In 2008 the Spanish property market was revealed to be a bubble, and it popped. The market had seen constant growth for a decade and homes were highly overvalued. Pushed by low interest rates and high employment, the property market was not reflective of the real value of real estate.

An important aspect of the crash were the cajas, who held 56% of all Spanish mortgages at the time of the crash. The cajas were rife with corruption and bad business practices. Generally, cajas had been run by politicians and their appointees, with little banking experience. Unsurprisingly, many of the mortgages issued by cajas were irresponsible. Politicians were incentivized to give their constituents loans, and often took large payouts for themselves, keeping reserves well below necessary (Tremlett, 2012). When the property market stalled, more than 5% of mortgages issued by cajas were underwater.

At the same time, the crash brought construction to a standstill. With the price of housing falling 30% over the period, no new housing was going to be built for several years (Karaian, 2013). The almost overnight destruction of the industry contributed to Spanish unemployment rising from 8% in Q4 2007 to 17.24% by Q1 2009 (Spain Unemployment Rate, 2021). These simultaneously gutted the government's ability to collect property and income taxes, contributing to a government deficit of 4.65% of GDP in 2008 and 11.3% of GDP in 2009.

If Spain was not in the Eurozone, it is possible some of these issues could have been resolved through a currency devaluation. By making their currency cheaper, Spain could increase foreign investment and boost their economy. As they were part of the Eurozone, this was impossible, and Spain had to deal with their economic situation without this monetary tool. As the Euro had built Spain up, it trapped the nation on the way down.

Naturally, the government increased spending in 2009 to encourage economic growth. Without monetary policy, it turned to the fiscal policy it could control. Importantly, the Spanish system for collecting taxes was carried out on a national level, but spending was mostly left up to local regions. By 2011, pressure was on Spain to institute austerity and balance its budget. Austerity measures were hard to manage politically, as reducing the funding to regions had to be negotiated with 45 different local governments (Badkar, 2012). This made austerity slower to enact in Spain, frustrating the EU and Spanish debt holders.

Furthermore, it became apparent by 2011 the cajas needed to be saved from their bad loans. Other lines of credit had dried up, and these savings banks were unable to back up their positions. This further contributed to the government deficit. At the same time, Spanish bonds were becoming difficult to sell. By 2012, the interest rates on 10-year Spanish bonds became prohibitively expensive. The government did not have enough money to bail out the banks and was unable to issue loans. It became clear the EU would need to get involved to handle the debt.

The EU bailed out the Spanish banks in 2012 for €100 Billion (Enrich and Forelle, 2012). However, the banks still needed help, especially prominent cajas. As such, the EU extended an offer for more credit contingent on Spain joining the European Stability Mechanism, the successor of the EFSF (ESM, 2021). The ESM was able to continue supporting Spain and keep them in the Euro. Spain needed fundamental reforms to grow without EU subsidies, many of which were not domestically popular. However, these changes were necessary to stay in the Euro.

Reforms to the Spanish Economy

Spain heavily reformed the caja system following its role in the financial crisis. Many of the regional banks were incorporated into local private banks, hurting domestic shareholders. Others, like La Caixa and Bankia consolidated and continued operation. These savings banks continued with new rules on governorship and conflict-of-interest. With proper oversight and less perverse incentives, the banks were expected to operate more responsibly into the future (International Monetary Fund, 2012). Private banks in Spain already had the reputation for being overly cautious with reserves, so the new regulations improved sector confidence. Without EU pressure, it is unlikely that Spain would have done this on their own.

Labour markets also needed reform. While hiring and firing workers was expensive before the crash, reforms in 2010 and 2012 made the labour market more flexible. Unions were given less control over national wages and industry wide contracts (Eurofound, 2012). The new laws made it much easier to hire new workers, and as such the unemployment rate began to fall in 2014 (Llantada, 2014). This was down from the peak unemployment of 27% with young people hit even worse. Still, issues remained in the Spanish economy around unemployment and underemployment. Temporary jobs and work off books hides a lot of underemployment in the economy, and the unemployment rate does not reflect that.

To receive a bailout and remain in the Euro, the Spanish government had to reduce its deficit by instituting austerity. A significant issue was that the collection of taxes was done unilaterally, while spending was decided locally. This created overspending and under-collection of taxes, requiring complex negotiations to bring in austerity. This was resolved in 2011 through a change to the Spanish constitution that required a balanced budget by regional and federal exchequers by 2020 (Badkar, 2012). The budget deficit was highest in 2009, at 11.3% of GDP, but remained high until 2013, when it reduced to 7%. The deficit shrunk annually until 2020, with a 2019 deficit 2.8% of GDP. During this time, government debt reduced as a percentage of GDP from a peak in 2014 of 100.4% to 95.5% by 2019 (Spain Government Debt to GDP, 2019). Although it is far above the 2006 35.6%, the government was on track before the Covid-19 Pandemic.

Since the reform period, the Spanish current account has returned to pre-Euro levels, with Spain exporting as much as it imports. This shows that the Spanish market is capable of meeting domestic demand. As Spain continues to grow out of the recession, the Eurozone will facilitate capital flows between Spain and other nations. Spain trades with many nations outside the Eurozone, however membership of a large currency aids these trades (World's Top Exports, 2021).

Current Challenges

Unlike the property crash of 2008, the Coronavirus pandemic was an unprecedented and unavoidable economic shock. Spain's tourist industry, which represents a large sector of their economy, was badly hit. By being an EU member, Spain can avail of collective relief and vaccine distribution efforts. Although not a fix-all, the Eurozone membership will also go far to stabilize banks and financial markets. Little to no discussion was held on the possibility of Spain being forced out of the Euro, or if the union was untenable. These point to economic progress and Spain's newfound security in the union.

Challenges remain with unemployment, however. With the pandemic, unemployment rose to 16.1%, one of the worst rates in the EU, before falling to 13.3% by January 2022 (Spain Unemployment Rate, 2021). Youth unemployment rose to 40% by the start of 2021, before returning to 30% by November 2021 (Spain Youth Unemployment Rate, 2021). Youth unemployment is a major issue Spain must tackle in the coming years. Since emigration is easy many young people, especially the best educated, choose to leave Spain for other nations when they cannot find jobs. Being in the Eurozone only compounds this, as the wage information and ease of remittances reduces moving costs. As such, Spain will need to strengthen its youth employment going forward.

Similarly, Spanish business is currently fickle and uncompetitive. Although the business sector has developed considerably since joining the Eurozone, Spain is lacking in competitiveness where it counts. Young people are generally not willing to start a new business, with the concerns around expenses and volatility being very important (Alemany et al., 2011). Spain ranks 30th in ease of business by the World Bank (2021). Since the crash in Spain, banks have been particularly wary of investing and lending. As such, entrepreneurial business loans are not accessible for many potential businesses. The EU and Eurozone can aid these processes through more business focused measures. The openness of the Spanish economy today can be credited largely to EU markets. Spain must also make entrepreneurship easier, through internal reforms of the bureaucracy.

Conclusion

In the end, the Euro has been a double-edged sword for Spain. In many ways, the Euro has increased the quality of living and competitiveness of the economy. However, it also exposed the deep flaws in the Spanish system and forced them to be corrected. Spain still has problems with its labour market; however, the Eurozone pressed for more open and flexible labour. The caja system, which would eventually lead to a recession, was finally scrapped and replaced with a modern banking system. Spain saw its public debt skyrocket, but now has instruments to address its spending and taxation in a uniform manner. If Spain stayed out of the Euro, it is unlikely it would have suffered the worst of the global financial crisis. However, Spain today would be much more like the Spain of the 1990's, underdeveloped and in need of fundamental reforms. The Eurozone forced Spain to fit its economic decisions into a European framework. While this transition has enacted a toll on Spain, the economy has grown larger and more robust because of it.

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Mother Knows Best: Analysing the Exclusion of Non-EU Female Migrants in EU Labour Market

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"The second half of the 20th century and beginning of the 21st has brought significant change to the power dynamics of sex and gender.While the gender labour participation and wage gap has shrunk significantly, women still dominate unpaid work leading an unfair burden with significant economic consequences for the way in which women make labour allocation decisions. Ella Hensey investigates this issue with particular focus on migrant women in the European Union. Hensey shows how cultural expectations lead migrant women to remain in low-paying, stagnant jobs with significant consequences for the women themselves as well as for the labour market as a whole."

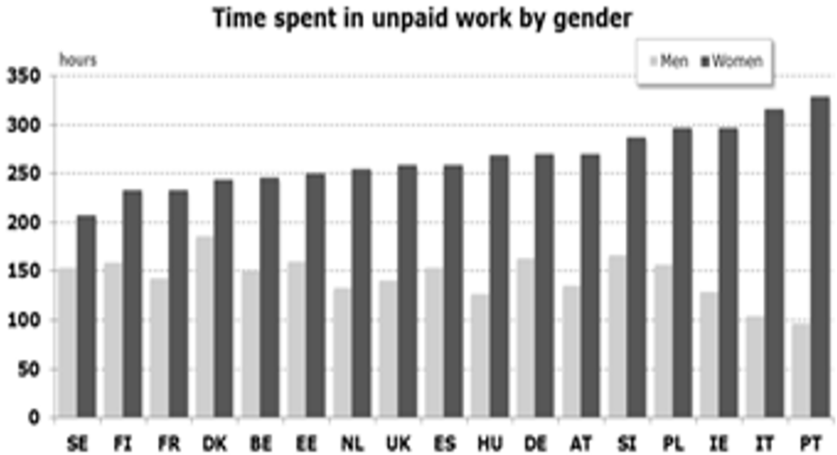
Introduction

Unpaid care work, most often undertaken by women, is crucial to the efficient functioning of the economy. Although employment rates for women are increasing across the European Union, there is still a clear gender gap when it comes to female labour force participation in the EU. This essay will consider the burden of unpaid labour and its implications to female labour market integration with specific emphasis on non-EU migrant women. Due to the concept of complementarity, migration is useful in pushing the native population into 'higher-quality' management jobs while immigrants can fill 'lower-quality' jobs (Baldwin & Wyplosz, 2020). Of course, the quality of a job is subjective; however, for the sake of this paper, we will consider low quality jobs as offering little social protection and employment rights. Through analysis of different patterns of labour market integration across the EU, we will discuss the economic consequences of the exclusion of migrant women from the labour market. In addition, the lack of EU level acknowledgement and policy recommendations to Member States regarding female migrant labour market integration will be discussed.

Burden of Unpaid Labour in the EU

Unpaid care work creates serious implications for women's ability to participate in the labour market and the quality of work they can acquire (Ferrant, et al., 2014). Despite progress in women's educational attainment across the world, their labour market participation rates are still only 54% compared to 81% for men (Cantillon & Teasdale, 2021). Figure 1 depicts the unequal distribution between men and women regarding time spent on unpaid work in the EU. This distribution invokes a 'motherhood penalty' and 'fatherhood premium' in which the more children a family have will lower the number of hours a woman tends to work while having little effect on men (Cantillon & Teasdale, 2021).

Figure 1



Source: European Commission (2016)

Due to the burden of unpaid labour, women often face barriers in increasing their education or skills that make them desirable to employers, pushing women into either not participating in the labour market at all or engaging in low-quality part time work in the informal sector. Social norms and cultural perceptions regarding gender in the EU results in women spending 13 more hours than men every week on unpaid care and housework labour (Cantillon & Teasdale, 2021). Unpaid care work limits time available for women to engage in the labour market and occupy high-quality jobs. The burden of unpaid labour and social norms prohibit women from translating additional skill into increased labour force participation due to lower returns to education (Ferrant, et al., 2014). Stereotypes regarding a women's role in a heterosexual relationship still strongly persist in the EU, with 44% of Europeans believing the main role of a women is to take care of her home and children while 43% believe the most important role of a man is to work and earn money (European Commission, 2020). Women do not exist in an economic environment of unconstrained choice, being only bound by budget constraints; due to social norms regarding gender roles, women face additional barriers in furthering their education and skills.

There are four main patterns of labour market integration across the EU (Anxo, et al., 2006). The first—the 'universal breadwinner' model—is visible in Nordic countries such as Sweden and Denmark. These countries can be seen to have the most equal distribution of unpaid labour in figure 1. This pattern involves marriage and children having a positive impact on women's employment rates (Anxo, et al., 2006). The second is the 'modified breadwinner' model. Visible in France, motherhood is still associated with the withdrawal from the labour market for some women although the majority continue to work full-time (Anxo, et al., 2006). The third is the 'exit or full-time' model visible in Mediterranean countries. This the most traditional model and houses the lowest female employment rates and a clear negative impact of family formation on female labour market integration (Anxo, et al., 2006). Finally, a model of 'maternal part-time' work is visible in Dutch speaking countries, Germany, and the UK. While the differences in the quality of part time work differ between countries, part-time work is considered the norm for mothers (Anxo, et al., 2006). Understanding the vast differences across EU nations regarding female labour market integration is crucial to understanding how migrant women are particularly vulnerable to the labour market disadvantages faced by women.

Adverse Effects for Migrant Women

The discrepancies among EU countries in terms of gender norms and patterns of labour market integration disproportionately impact migrant women and poses the question of whether full European labour market integration can be achieved while these divergences persist. Migrant women must find their way in the EU labour market while enduring the intersection of both female and migrant discrimination. The gender gap within the EU is even higher among migrants. This is due to multiple factors. First, labour force participation in general is lower among migrant populations compared to the native-born population (Barslund, et al., 2017). Second, gender gaps in labour force participation rooted in cultural and societal norms carry over from the migrant's home country. For example, gender norms regarding child and domestic care create barriers to gaining additional education and skills (Barslund, et al., 2017).

In theory, increasing a woman's education and skills and decreasing fertility rates will bolster female labour force participation (Ferrant, et al., 2014). However, this assumption fails to acknowledge that there are cultural norms and beliefs that can limit a woman's ability to decrease her fertility rates. In wealthier EU countries, care work is often outsourced and passed onto other women, notably migrant women (Cantillon & Teasdale, 2021). In fact, Denmark is one of the only countries where parenthood is associated with a minor increase in employment for women due to their 'universal breadwinner' model (Sikiric, 2021). What the model fails to acknowledge, however, is that childcare is outsourced-often to migrant women. The pattern clearly dismisses the presence of migrant women and how children impact their labour market integration. Outsourcing childcare creates a 'care drain' in which migrant women leave their own unpaid care responsibilities in the hands of other women, often their daughters, to tend to the care work of wealthy families (Cantillon & Teasdale, 2021). This creates a cycle in which migrant women are stuck in jobs with little social protection and employment rights that lack opportunities for upward mobility (Cantillon & Teasdale, 2021).

Economic and Social Implications of Non-EU Migrant Women Exclusion

There are serious economic implications for this barrier to entry for migrant women into the labour market. According to the European Commission, the gender employment gap costs the EU an economic loss of €370 billion per year (European Commission, 2022). The persisting gender gap in employment wastes valuable human capital and creative capacity. In Austria, where 8.44% of the working age population consists of non-EU nationals, barriers to entry for migrants-particularly women-causes inefficiencies in the labour market (Galgoczi, 2020). The capacity for migrants to integrate into the labour market is of course affected by individual barriers such as language skills or lower education (Galgoczi, 2020); however, in the case of migrant women they are further prohibited from integration due to the burden of unpaid care work. This situation begs for the existence of programs and policies in EU Member States that help integrate migrant women into the labour force by providing language and skills courses along with childcare. From an economic point of view, a more skilled and educated work force will increase output and thus boost growth within the economy (Baldwin & Wyplosz, 2020). However, the inequality between labour market participation of migrant men and women must also be considered. Migrant men are far more likely to participate in the labour market. Shrinking this gap would provide a larger and more productive labour force (Barslund, et al., 2017). EU member states must consider their country's personal pattern of labour market integration and design policies and programs to help integrate migrant women.

Migrant women are often financially dependent on their husbands, making it difficult to migrate or find work on their own (Sikiric, 2021). In addition, migrant women are most likely to enter the EU under a dependent status-of either wife or mother-in hopes of improving their chances of gaining legal entry (Kofman & Sales, 1998). This dependent status prohibits migrant women from pursuing higher quality jobs and pushes migrant women into the informal sector. This financial dependency and labour market exclusion can also have social implications. There appears to be a positive correlation between labour market integration and social integration (Barslund, et al., 2017). Non-EU migrant women may experience marginalization in their host country and lack the ability to integrate socially (Barslund, et al., 2017).

Looking Forward: Change in Approach Needed Within EU Institutions

There are currently no EU level policies that specifically promote integration of non-EU migrant women into the labour market. The European Economic and Social Committee (EESC) puts forth recommendations to the Commission and Parliament regarding inclusion of migrant women into the labour market and the costs of non-integration to the European economic environment (Trantina & Moreno Díaz, 2018). In their "Opinion on Inclusion of Migrant Women in the Labour Market" adopted in 2015, the EESC calls on European institutions to utilise the European Semester to create country-specific recommendations that will increase female migrant labour integration according to the specific circumstances of each country (Ouin, 2015). This recommendation considers the different patterns of labour market integration seen in the EU, as discussed earlier in the paper, so each country can increase labour market integration given their current model. These measures may include language courses, support services and access to childcare. The EESC acknowledges the economic advantages of integrating migrant women into the labour market and how their presence may help the EU combat challenges such as its ageing population and falling birthrate (Ouin, 2015). These suggestions from the EESC are invaluable and should be internalized by EU level institutions as a crucial step toward overall gender equality and labour market integration.

While the EU Gender Equality Strategy 2020-2025 does indicate a significant in the push from the Commission towards gender equality across the EU, there are no goals specific to the integration of migrant women into the labour market. The strategy acknowledges adversity faced by migrant women a; particularly, that only 55.3% of women born outside the EU are in employment and that 80% of care is provided by informal care - notably from migrants (European Commission, 2020). However, the urgency and importance of integrating migrant women into the labour force is not appropriately addressed. Elements that are specific to migrant women need to be considered in the EU Gender Equality Strategy, such as the burden of unpaid care work that has been highlighted throughout this paper.

Conclusion

Although often unrecognized, the EU economy would not be able to function without women working in unpaid domestic roles. As educational attainment and labour market opportunities increase in the EU among women, it is important to look at who is taking on these domestic roles. Migrant women, due to financial dependency on their husbands, cultural norms in their own country, and the already visible discrepancies in labour market integration in the EU are often left with domestic care roles as their only option for work. Migrant women are forgotten when it comes to labour market integration and struggle to fully integrate into society and the work force. The burden of unpaid care work particularly affects migrant women and makes their integration into the EU labour market an even more arduous task than it would be already given their gender. This has serious economic and social implications causing the EU significant losses in unrealized growth every year. As there is no current EU level policy regarding immigration and labour market integration, this essay supports a more complete internalization and adoption of the recommendations outlined by the EESC and a larger inclusion of the specific needs of migrant women in the EU Gender Equality Strategy.

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