



www.esri.ie

Working Paper No. 308

August 2009

Price Inflation and Income Distribution

Anne Jennings^a, Seán Lyons^a and Richard S.J. Tol^{a,b,c}

Corresponding Author: Richard.Tol@esri.ie

^a Economic and Social Research Institute, Dublin, Ireland

^b Institute for Environmental Studies, Vrije Universiteit, Amsterdam, The Netherlands

^c Department of Spatial Economics, Vrije Universiteit, Amsterdam, The Netherlands

ESRI working papers represent un-refereed work-in-progress by members who are solely responsible for the content and any views expressed therein. Any comments on these papers will be welcome and should be sent to the author(s) by email. Papers may be downloaded for personal use only.

Price Inflation and Income Distribution

The world economy is in the middle of a depression, and the Irish economy is among the worst hit. The public finances are in disarray. Taxes are up; wages and benefits are down. Prices are down too, as (world) demand has fallen, as companies vigorously compete for dwindling business, and as direct imports from the United Kingdom are increasingly attractive (Bergin et al. 2009). This affects different groups differently. This note quantifies the impact of price inflation on various types of household, segmented by income and other characteristics.

The methodology is straightforward (Somerville 2004). The Central Statistics Office publishes monthly consumer price indices for 13 broad commodity groups from November 1975 to June 2009.¹ We split the commodity group “housing” into its subgroups because it is so heterogeneous. The Household Budget Survey (CSO 2008) provides anonymised micro-data on consumer expenditures for 6,884 households, collected in 2004-5. We use these data to calculate aggregate expenditure shares per commodity group for each socioeconomic category of interest. The category-specific consumer price index is then the weighted average of the commodity-specific price indices, with the category-specific expenditure shares as weights. We start with price indices split by equivalised income deciles.

Figure 1 shows the consumer price index per equivalised income decile. It shows the annual price change between July and June, for June 2004 to June 2009. In 2004 and 2005, inflation was between 1% and 2%. Inflation was practically the same for all income groups. Inflation rose between 2006 and 2008. The poorest (or lowest income, to be precise) households faced the lowest inflation in 2006 and 2007, but the highest in 2008. From July 2008 to June 2009, prices fell. Prices fell fastest for the richest decile, declining by 5.1%. The 2nd decile gained least, with prices dropping by 3.0%.

1

<http://www.cso.ie/px/pxeirestat/database/eirestat/Consumer%20Prices/Consumer%20Prices.asp>

Figure 2 shows the monthly price indices from July 2007 to June 2009 for the poorest decile, the median, and the richest decile. Figure 2 confirms the results of Figure 1. It also shows that deflation started in September 2008 and has been accelerating since. While deflation was fastest for the highest income decile, inflation was slowest. The richest group faced lower prices in June 2009 than in July 2007, while the poorest group (and the median) faced higher prices.

Changes in taxes, social contributions and benefits in the budgets of 2008 and 2009 mean that the poorest decile gained almost 5% in income relative to the average, while households in the highest income decile lost over 7% relative to the average (Callan et al. 2009). That is, Ireland's income distribution has become more egalitarian *in nominal terms*. However, *in real terms*, the income distribution is levelling less rapidly.

The reason that recent inflation (deflation) has been relatively high (low) for poorer households is because the prices of goods they tend to buy have fallen more slowly than those of goods generally. Figure 3 shows the consumer price index per broad commodity group. Figure 3 reveals that inflation is commodity specific. Patterns differ widely between commodities. Between July 2008 and June 2009, the prices of food, clothing, furnishing, and transport fell, while other prices continued to increase. These are all necessary goods, and the expenditure shares for these items are indeed higher in the lower income groups. The most spectacular price drop was, of course, in housing. As the poorest households spend on average 15% of their income on housing, and the richest households 10%, this would suggest that the poor would benefit most from current deflation. Figure 4, however, shows that the housing market has not responded in a uniform way. Mortgage interest payment have fallen sharply, rents in the private market have fallen much less (but still over 20%), while rents in the public sectors have continued to increase.² As social housing is concentrated in the poorest deciles, their rate of price deflation is lowest.

² Local authority rents are indexed on income. The costs of providing subsidised housing has fallen substantially over the last year, but this windfall benefit to the county councils should be seen in the light of the rapidly escalating costs in previous years.

Figure 5 shows two alternative price indices for the lowest income decile. The first is as above, using the *twelve* broad commodity groups and “housing” disaggregated. The second price index uses the *thirteen* broad commodity groups, that is, “housing” aggregated. If the housing costs for the poorest households had traced the average housing costs in the country, the three lowest income deciles would have seen the highest deflation: between 5.2% and 5.4% for the year till June 2009. That is, if local authority rents had tracked average prices (e.g., because benefits had tracked average prices), then the poor would have gained in real income as well as relatively to other income groups.

Table 1 shows that, although different income groups face different price changes in the short term, the long term trends are very similar. Over the 34 year period for which there are data, decile-specific annual inflation rates vary between 5.3% and 5.5%. Note that Table 1 uses the 13 broad commodity groups, as the disaggregate price data start in 2003 only.

Figure 6 returns to recent times and the disaggregate price index. It splits households in a different way. The HBS records whether the chief economic supporter of the household (i.e. its highest earner) is employed, unemployed or retired, as well as the NACE code of employer of the chief economic supporter. We classified the latter as public³, semi-state⁴ and private⁵.

Figure 6 shows the consumer price index per class. People in the private, public, and semi-state sectors face roughly the same rate of price inflation. The semi-state sector stands out for low inflation in 2007 and low deflation in 2009. There is no obvious explanation for this. Figure 6 also shows that there are no substantial differences in inflation rates between the employed, the unemployed, and the retired.

³ 75 Public administration and defence; 80 Education; 85 Health and social work services

⁴ 40 Electricity and gas; 41 Water collection and distribution; 60 Land transport services; 62 Air transport services; 64 Post and telecommunication services; 73 Research and development services; 90 Sewage and refuse disposal services; note that some of these sectors are dominated by state-owned companies, while other sectors are served by a mix of private and public operators.

⁵ All other sectors

In sum, this note establishes that it is useful to complement the analysis of nominal income distribution with the distribution implications of consumer prices. Although decisions about the appropriate progressivity of the tax and benefit system are political, there are policy implications of our results. A 5% cut in social welfare rates has been suggested, justified by the fall in the *average* price index (McCarthy *et al.* 2009). However, households dependent on social welfare mainly belong to the bottom three income deciles (see Figure 7), and those deciles have seen the least deflation in the past year (3.0 – 3.4%). Therefore if one wishes to justify a reduction in social welfare rates by falling prices, a 3% reduction might be more appropriate. As local authority rents would then fall as well, this would still leave welfare recipients better off.

Acknowledgements

We had useful discussions with Tim Callan and John Fitz Gerald on this topic.

References

- Bergin, A., T.Conefrey, J.D.Fitz Gerald, and I.Kearney (2009), *Recovery Scenarios for Ireland*, Policy Research Series 7, Economic and Social Research Institute, Dublin.
- Callan, T., C.Keane, and J.Walsh (2009), 'Distributional Impacts of Budget 2009', in *Quarterly Economic Commentary Spring 2009*, A. Barrett, I. Kearney, and J. Goggin (eds.), Economic and Social Research Institute, Dublin.
- CSO (2008), Household Budget Survey 2004-2005 Anonymised Data File, Central Statistics Office, Cork.
- McCarthy, C., D.McNally, P.McLoughlin, M.O'Connell, W.Slattery, and M.Walsh (2009), *Report of the Special Group on Public Service Numbers and Expenditure Programmes*, Department of Finance, Dublin.
- Somerville, R.A. (2004), 'Changes in Relative Consumer Prices and Substitution Bias in the Laspeyres Index: Ireland, 1985-2001', *Economic and Social Review*, 35, (1), 55-82.

Table 1. Price indices^a for June of selected years per income decile.

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1975 ^b	18.2	18.2	18.2	18.0	17.9	17.8	17.8	17.6	17.3	17.7
1980	33.6	33.5	33.7	33.3	33.3	33.1	33.1	32.8	32.3	33.0
1985	60.1	59.5	60.0	60.1	59.9	59.9	59.9	59.5	58.7	59.7
1990	69.0	68.6	68.9	68.9	68.8	68.7	68.7	68.2	67.4	68.3
1995	77.1	76.6	76.9	77.3	77.2	77.3	77.4	76.9	76.2	77.0
2000	83.4	83.4	83.8	84.0	84.2	84.3	84.6	84.3	83.7	84.4
2001	87.0	87.1	87.5	87.3	87.5	87.4	87.7	87.4	86.9	87.4
2002	90.0	90.2	90.5	90.5	90.9	90.8	91.2	90.9	90.4	90.8
2003	92.2	92.4	92.7	92.9	93.3	93.2	93.7	93.3	93.0	93.1
2004	93.6	93.8	94.0	94.4	94.8	94.8	95.3	94.9	94.7	94.8
2005	94.9	95.0	95.2	95.6	95.9	96.0	96.3	96.1	95.9	96.0
2006	98.1	98.1	98.3	98.6	98.8	98.8	99.0	98.9	98.9	99.0
2007	102.5	102.5	102.5	102.3	102.1	102.1	102.0	102.1	102.1	102.1
2008	107.7	107.8	107.6	107.1	106.8	106.6	106.3	106.4	106.5	106.4
2009	101.9	102.1	101.9	102.4	102.6	102.6	102.8	102.6	102.7	102.1
Rate ^c	5.26%	5.28%	5.26%	5.32%	5.34%	5.35%	5.37%	5.40%	5.45%	5.36%

^a December 2006 = 100

^b November

^c Annualised inflation rate for the period November 1975 to June 2009.

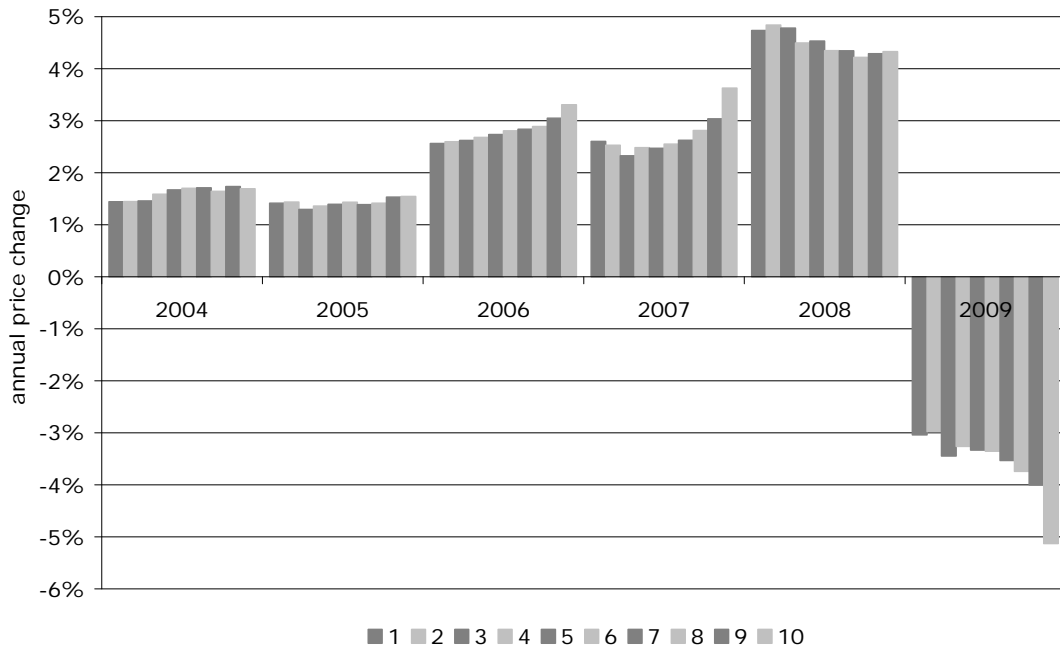


Figure 1. Annual change in the consumer price index from July to June per income decile.

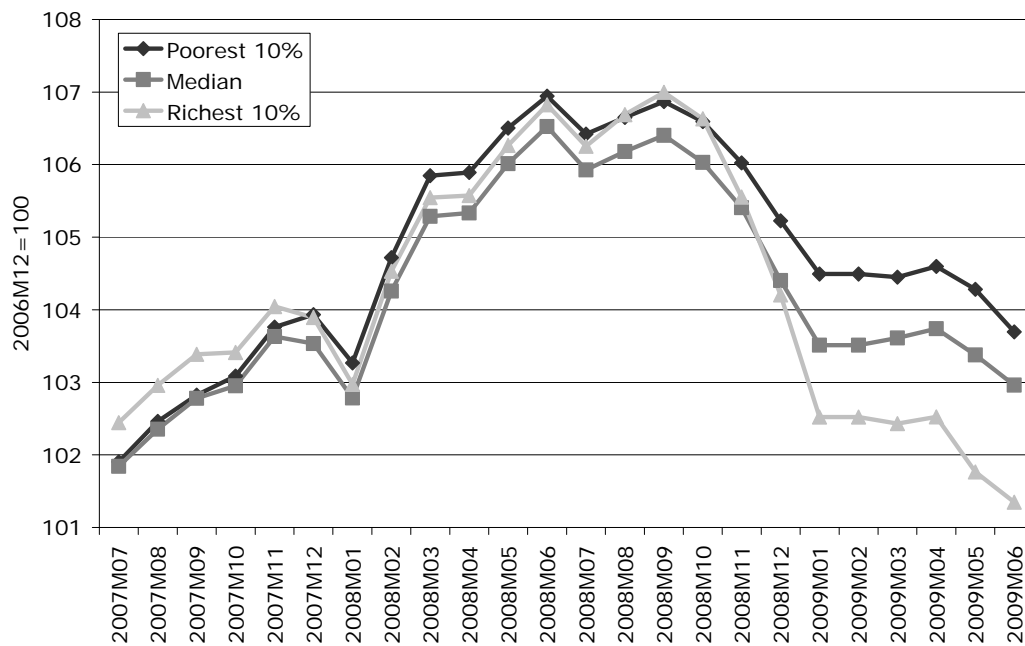


Figure 2. The monthly consumer price index from July 2007 to June 2009 for the poorest, median, and richest households.

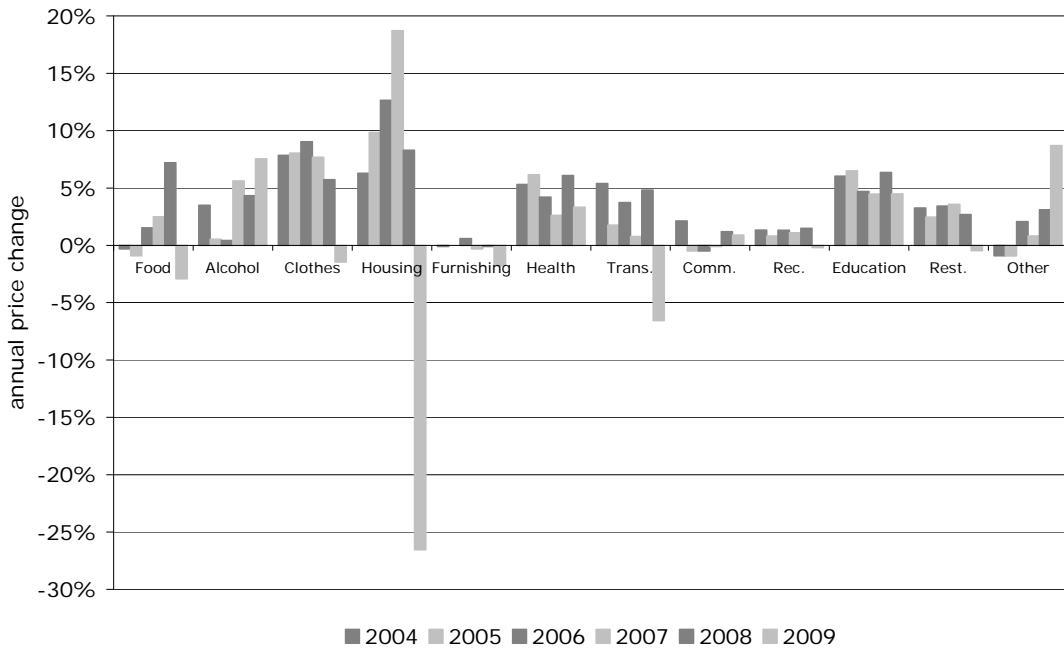


Figure 3. Change in the consumer price index from July to June per commodity group.

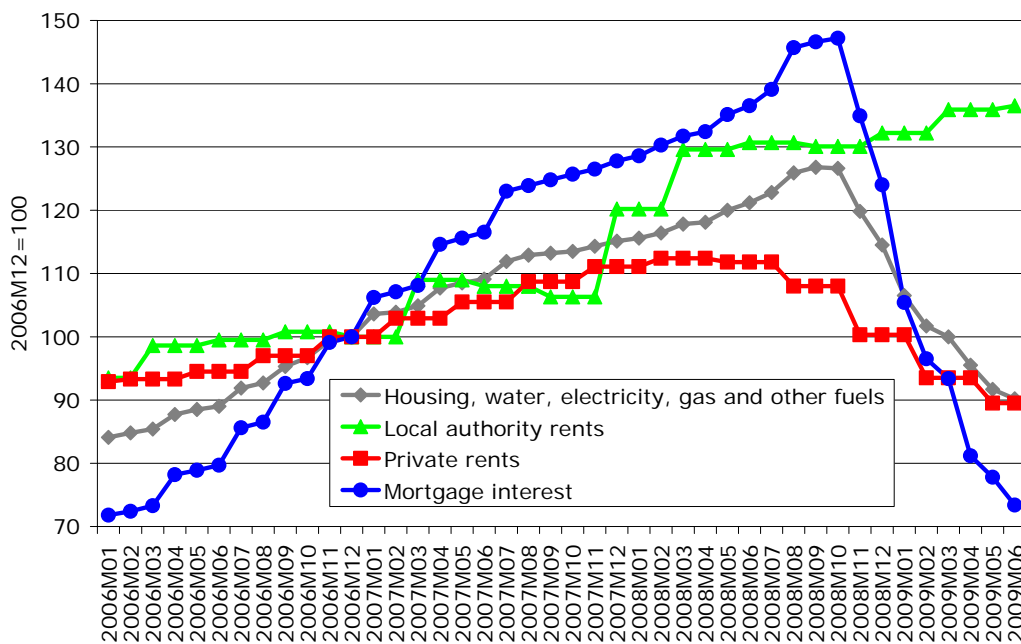


Figure 4. The monthly price index from January 2006 to June 2009 for the broad commodity group “housing” and some of its components.

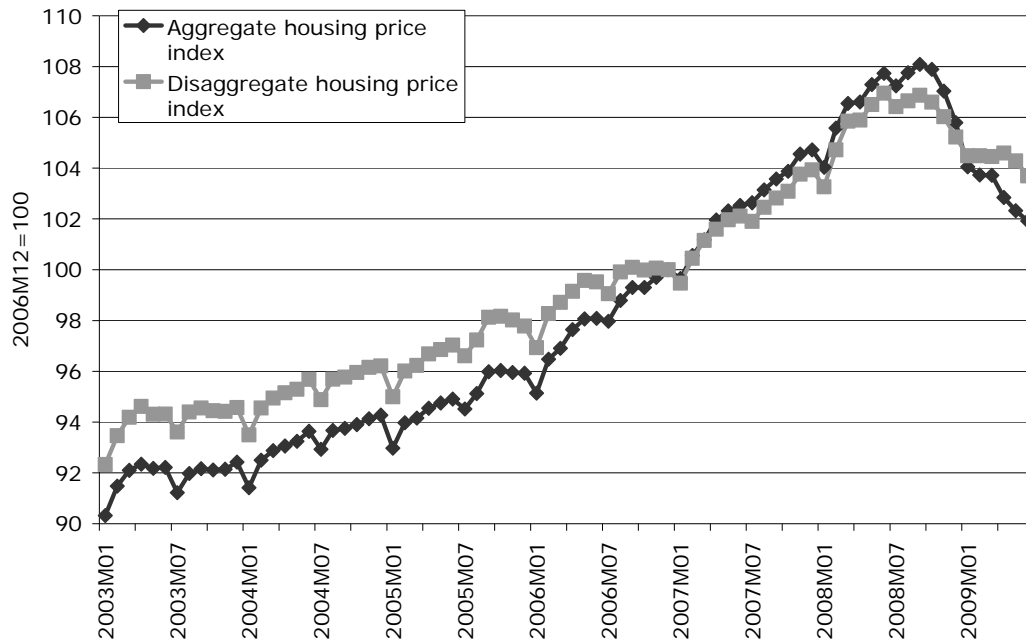


Figure 5. The monthly consumer price index from January 2003 to June 2009 for the poorest households using the broad commodity group “housing” and its separate constituents.

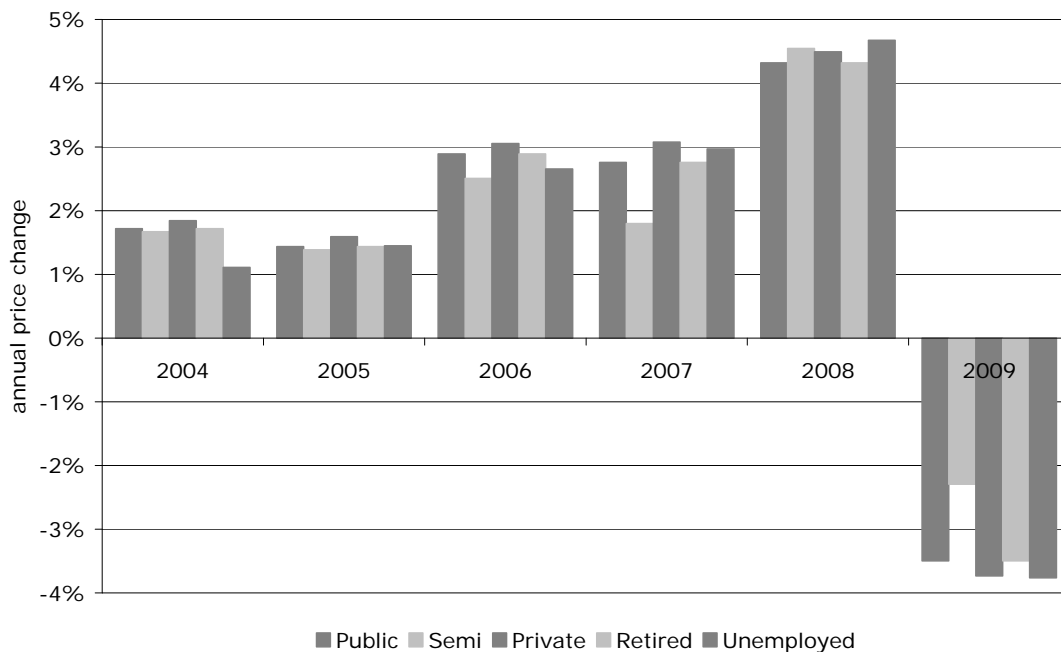


Figure 6. Change in the consumer price index from July to June per employment status.

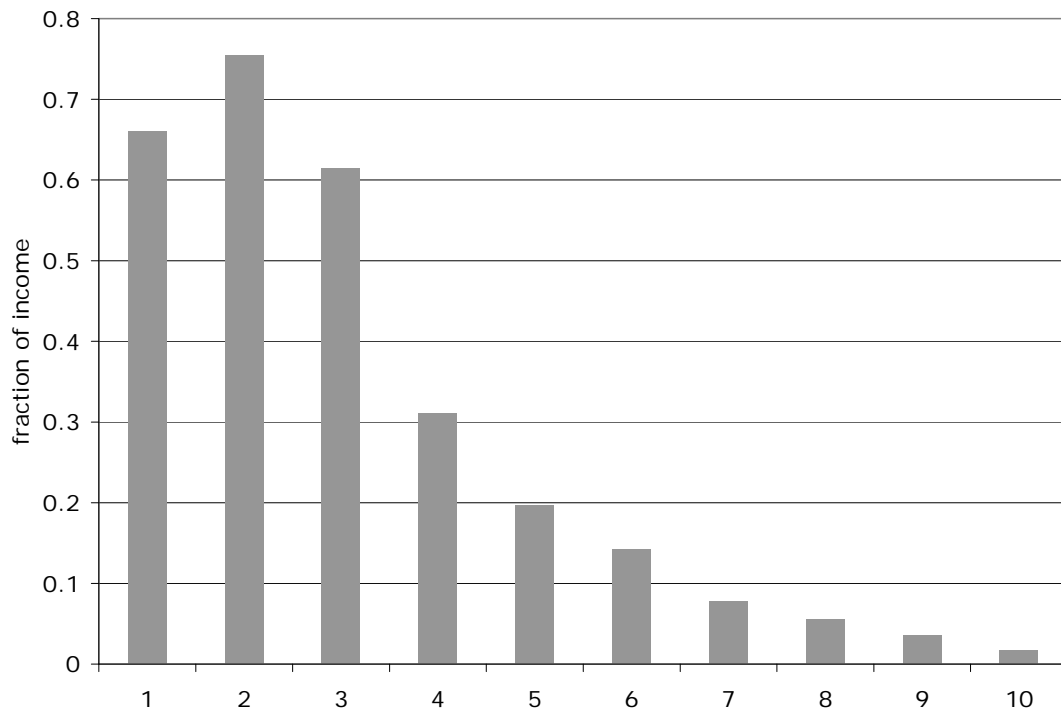


Figure 7. Fraction of gross household income from social welfare payments for each income decile.

Year	Number	Title/Author(s) ESRI Authors/Co-authors <i>Italicised</i>
2009		
	307	Overskilling Dynamics and Education Pathways Kostas Mavromaras, <i>Seamus McGuinness</i> , Yin King Fok
	306	What Determines the Attractiveness of the European Union to the Location of R&D Multinational Firms? <i>Iulia Siedschlag, Donal Smith, Camelia Turcu, Xiaoheng Zhang</i>
	305	Do Foreign Mergers and Acquisitions Boost Firm Productivity? <i>Marc Schiffbauer, Iulia Siedschlag, Frances Ruane</i>
	304	Inclusion or Diversion in Higher Education in the Republic of Ireland? <i>Delma Byrne</i>
	303	Welfare Regime and Social Class Variation in Poverty and Economic Vulnerability in Europe: An Analysis of EU-SILC Christopher T. Whelan and <i>Bertrand Maitre</i>
	302	Understanding the Socio-Economic Distribution and Consequences of Patterns of Multiple Deprivation: An Application of Self-Organising Maps Christopher T. Whelan, Mario Lucchini, Maurizio Pisati and <i>Bertrand Maitre</i>
	301	Estimating the Impact of Metro North <i>Edgar Morgenroth</i>
	300	Explaining Structural Change in Cardiovascular Mortality in Ireland 1995-2005: A Time Series Analysis <i>Richard Layte, Sinead O'Hara</i> and Kathleen Bennett
	299	EU Climate Change Policy 2013-2020: Using the Clean Development Mechanism More Effectively <i>Paul K Gorecki, Seán Lyons</i> and <i>Richard S.J. Tol</i>
	298	Irish Public Capital Spending in a Recession <i>Edgar Morgenroth</i>
	297	Exporting and Ownership Contributions to Irish Manufacturing Productivity Growth Anne Marie Gleeson, <i>Frances Ruane</i>
	296	Eligibility for Free Primary Care and Avoidable Hospitalisations in Ireland

Anne Nolan

- 295 Managing Household Waste in Ireland:
Behavioural Parameters and Policy Options
John Curtis, Seán Lyons and Abigail O'Callaghan-Platt
- 294 Labour Market Mismatch Among UK Graduates;
An Analysis Using REFLEX Data
Seamus McGuinness and Peter J. Sloane
- 293 Towards Regional Environmental Accounts for Ireland
*Richard S.J. Tol, Nicola Commins, Niamh Crilly, Sean
Lyons and Edgar Morgenroth*
- 292 EU Climate Change Policy 2013-2020: Thoughts on
Property Rights and Market Choices
Paul K. Gorecki, Sean Lyons and Richard S.J. Tol
- 291 Measuring House Price Change
David Duffy
- 290 Intra-and Extra-Union Flexibility in Meeting the
European Union's Emission Reduction Targets
Richard S.J. Tol
- 289 The Determinants and Effects of Training at Work:
Bringing the Workplace Back In
Philip J. O'Connell and Delma Byrne
- 288 Climate Feedbacks on the Terrestrial Biosphere and the
Economics of Climate Policy: An Application of *FUND*
Richard S.J. Tol
- 287 The Behaviour of the Irish Economy: Insights from the
HERMES macro-economic model
*Adele Bergin, Thomas Conefrey, John FitzGerald and
Ide Kearney*
- 286 Mapping Patterns of Multiple Deprivation Using
Self-Organising Maps: An Application to EU-SILC Data
for Ireland
*Maurizio Pisati, Christopher T. Whelan, Mario Lucchini
and Bertrand Maitre*
- 285 The Feasibility of Low Concentration Targets:
An Application of *FUND*
Richard S.J. Tol
- 284 Policy Options to Reduce Ireland's GHG Emissions
Instrument choice: the pros and cons of alternative
policy instruments

Thomas Legge and *Sue Scott*

- 283 Accounting for Taste: An Examination of Socioeconomic Gradients in Attendance at Arts Events
Pete Lunn and Elish Kelly
- 282 The Economic Impact of Ocean Acidification on Coral Reefs
Luke M. Brander, Katrin Rehdanz, *Richard S.J. Tol*, and Pieter J.H. van Beukering
- 281 Assessing the impact of biodiversity on tourism flows: A model for tourist behaviour and its policy implications
Giulia Macagno, Maria Loureiro, Paulo A.L.D. Nunes and *Richard S.J. Tol*
- 280 Advertising to boost energy efficiency: the Power of One campaign and natural gas consumption
Seán Diffney, Seán Lyons and Laura Malaguzzi Valeri
- 279 International Transmission of Business Cycles Between Ireland and its Trading Partners
Jean Goggin and Iulia Siedschlag
- 278 Optimal Global Dynamic Carbon Taxation
David Anthoff
- 277 Energy Use and Appliance Ownership in Ireland
Eimear Leahy and Seán Lyons
- 276 Discounting for Climate Change
David Anthoff, Richard S.J. Tol and Gary W. Yohe
- 275 Projecting the Future Numbers of Migrant Workers in the Health and Social Care Sectors in Ireland
Alan Barrett and Anna Rust
- 274 Economic Costs of Extratropical Storms under Climate Change: An application of FUND
Daiju Narita, Richard S.J. Tol, David Anthoff
- 273 The Macro-Economic Impact of Changing the Rate of Corporation Tax
Thomas Conefrey and John D. Fitz Gerald
- 272 The Games We Used to Play
An Application of Survival Analysis to the Sporting Life-course
Pete Lunn
- 2008
- 271 Exploring the Economic Geography of Ireland

Edgar Morgenroth

- 270 Benchmarking, Social Partnership and Higher Remuneration: Wage Settling Institutions and the Public-Private Sector Wage Gap in Ireland
Elish Kelly, Seamus McGuinness, Philip O'Connell
- 269 A Dynamic Analysis of Household Car Ownership in Ireland
Anne Nolan
- 268 The Determinants of Mode of Transport to Work in the Greater Dublin Area
Nicola Commins and Anne Nolan
- 267 Resonances from *Economic Development* for Current Economic Policymaking
Frances Ruane
- 266 The Impact of Wage Bargaining Regime on Firm-Level Competitiveness and Wage Inequality: The Case of Ireland
Seamus McGuinness, Elish Kelly and Philip O'Connell
- 265 Poverty in Ireland in Comparative European Perspective
Christopher T. Whelan and Bertrand Maitre
- 264 A Hedonic Analysis of the Value of Rail Transport in the Greater Dublin Area
Karen Mayor, Seán Lyons, David Duffy and Richard S.J. Tol
- 263 Comparing Poverty Indicators in an Enlarged EU
Christopher T. Whelan and Bertrand Maitre
- 262 Fuel Poverty in Ireland: Extent, Affected Groups and Policy Issues
Sue Scott, Seán Lyons, Claire Keane, Donal McCarthy and Richard S.J. Tol
- 261 The Misperception of Inflation by Irish Consumers
David Duffy and Pete Lunn
- 260 The Direct Impact of Climate Change on Regional Labour Productivity
Tord Kjellstrom, R Sari Kovats, Simon J. Lloyd, Tom Holt, *Richard S.J. Tol*
- 259 Damage Costs of Climate Change through Intensification of Tropical Cyclone Activities: An Application of FUND
Daiju Narita, *Richard S. J. Tol* and *David Anthoff*

- 258 Are Over-educated People Insiders or Outsiders?
A Case of Job Search Methods and Over-education in UK
Aleksander Kucel, Delma Byrne
- 257 Metrics for Aggregating the Climate Effect of Different
Emissions: A Unifying Framework
*Richard S.J. Tol, Terje K. Berntsen, Brian C. O'Neill, Jan
S. Fuglestedt, Keith P. Shine, Yves Balkanski and Laszlo
Makra*
- 256 Intra-Union Flexibility of Non-ETS Emission Reduction
Obligations in the European Union
Richard S.J. Tol
- 255 The Economic Impact of Climate Change
Richard S.J. Tol
- 254 Measuring International Inequity Aversion
Richard S.J. Tol
- 253 Using a Census to Assess the Reliability of a National
Household Survey for Migration Research: The Case of
Ireland
Alan Barrett and Elish Kelly
- 252 Risk Aversion, Time Preference, and the Social Cost of
Carbon
David Anthoff, Richard S.J. Tol and Gary W. Yohe
- 251 The Impact of a Carbon Tax on Economic Growth and
Carbon Dioxide Emissions in Ireland
*Thomas Conefrey, John D. Fitz Gerald, Laura Malaguzzi
Valeri and Richard S.J. Tol*
- 250 The Distributional Implications of a Carbon Tax in
Ireland
*Tim Callan, Sean Lyons, Susan Scott, Richard S.J. Tol
and Stefano Verde*
- 249 Measuring Material Deprivation in the Enlarged EU
Christopher T. Whelan, Brian Nolan and Bertrand Maitre
- 248 Marginal Abatement Costs on Carbon-Dioxide Emissions:
A Meta-Analysis
Onno Kuik, Luke Brander and Richard S.J. Tol
- 247 Incorporating GHG Emission Costs in the Economic
Appraisal of Projects Supported by State Development
Agencies
Richard S.J. Tol and Seán Lyons

- 246 A Carton Tax for Ireland
Richard S.J. Tol, Tim Callan, Thomas Conefrey, John D. Fitz Gerald, Seán Lyons, Laura Malaguzzi Valeri and Susan Scott
- 245 Non-cash Benefits and the Distribution of Economic Welfare
Tim Callan and Claire Keane
- 244 Scenarios of Carbon Dioxide Emissions from Aviation
Karen Mayor and Richard S.J. Tol
- 243 The Effect of the Euro on Export Patterns: Empirical Evidence from Industry Data
Gavin Murphy and Iulia Siedschlag
- 242 The Economic Returns to Field of Study and Competencies Among Higher Education Graduates in Ireland
Elish Kelly, Philip O'Connell and Emer Smyth
- 241 European Climate Policy and Aviation Emissions
Karen Mayor and Richard S.J. Tol
- 240 Aviation and the Environment in the Context of the EU-US Open Skies Agreement
Karen Mayor and Richard S.J. Tol
- 239 Yuppie Kvetch? Work-life Conflict and Social Class in Western Europe
Frances McGinnity and Emma Calvert
- 238 Immigrants and Welfare Programmes: Exploring the Interactions between Immigrant Characteristics, Immigrant Welfare Dependence and Welfare Policy
Alan Barrett and Yvonne McCarthy
- 237 How Local is Hospital Treatment? An Exploratory Analysis of Public/Private Variation in Location of Treatment in Irish Acute Public Hospitals
Jacqueline O'Reilly and Miriam M. Wiley
- 236 The Immigrant Earnings Disadvantage Across the Earnings and Skills Distributions: The Case of Immigrants from the EU's New Member States in Ireland
Alan Barrett, Seamus McGuinness and Martin O'Brien
- 235 Europeanisation of Inequality and European Reference Groups
Christopher T. Whelan and Bertrand Maitre
- 234 Managing Capital Flows: Experiences from Central and Eastern Europe

Jürgen von Hagen and *Iulia Siedschlag*

- 233 ICT Diffusion, Innovation Systems, Globalisation and Regional Economic Dynamics: Theory and Empirical Evidence
Charlie Karlsson, Gunther Maier, Michaela Trippl, *Iulia Siedschlag*, Robert Owen and *Gavin Murphy*
- 232 Welfare and Competition Effects of Electricity Interconnection between Great Britain and Ireland
Laura Malaguzzi Valeri
- 231 Is FDI into China Crowding Out the FDI into the European Union?
Laura Resmini and *Iulia Siedschlag*
- 230 Estimating the Economic Cost of Disability in Ireland
John Cullinan, Brenda Gannon and *Seán Lyons*
- 229 Controlling the Cost of Controlling the Climate: The Irish Government's Climate Change Strategy
Colm McCarthy, *Sue Scott*
- 228 The Impact of Climate Change on the Balanced-Growth-Equivalent: An Application of *FUND*
David Anthoff, Richard S.J. Tol
- 227 Changing Returns to Education During a Boom? The Case of Ireland
Seamus McGuinness, Frances McGinnity, Philip O'Connell
- 226 'New' and 'Old' Social Risks: Life Cycle and Social Class Perspectives on Social Exclusion in Ireland
Christopher T. Whelan and Bertrand Maitre
- 225 The Climate Preferences of Irish Tourists by Purpose of Travel
Seán Lyons, Karen Mayor and Richard S.J. Tol
- 224 A Hirsch Measure for the Quality of Research Supervision, and an Illustration with Trade Economists
Frances P. Ruane and Richard S.J. Tol
- 223 Environmental Accounts for the Republic of Ireland: 1990-2005
Seán Lyons, Karen Mayor and Richard S.J. Tol
- 2007** 222 Assessing Vulnerability of Selected Sectors under Environmental Tax Reform: The issue of pricing power
J. Fitz Gerald, M. Keeney and S. Scott
- 221 Climate Policy Versus Development Aid

Richard S.J. Tol

- 220 Exports and Productivity – Comparable Evidence for 14 Countries
The International Study Group on Exports and Productivity
- 219 Energy-Using Appliances and Energy-Saving Features: Determinants of Ownership in Ireland
Joe O'Doherty, *Seán Lyons* and *Richard S.J. Tol*
- 218 The Public/Private Mix in Irish Acute Public Hospitals: Trends and Implications
Jacqueline O'Reilly and *Miriam M. Wiley*
- 217 Regret About the Timing of First Sexual Intercourse: The Role of Age and Context
Richard Layte, *Hannah McGee*
- 216 Determinants of Water Connection Type and Ownership of Water-Using Appliances in Ireland
Joe O'Doherty, *Seán Lyons* and *Richard S.J. Tol*
- 215 Unemployment – Stage or Stigma?
Being Unemployed During an Economic Boom
Emer Smyth
- 214 The Value of Lost Load
Richard S.J. Tol
- 213 Adolescents' Educational Attainment and School Experiences in Contemporary Ireland
Merike Darmody, *Selina McCoy*, *Emer Smyth*
- 212 Acting Up or Opting Out? Truancy in Irish Secondary Schools
Merike Darmody, *Emer Smyth* and *Selina McCoy*
- 211 Where do MNEs Expand Production: Location Choices of the Pharmaceutical Industry in Europe after 1992
Frances P. Ruane, *Xiaoheng Zhang*
- 210 Holiday Destinations: Understanding the Travel Choices of Irish Tourists
Seán Lyons, *Karen Mayor* and *Richard S.J. Tol*
- 209 The Effectiveness of Competition Policy and the Price-Cost Margin: Evidence from Panel Data
Patrick McCloughan, *Seán Lyons* and *William Batt*
- 208 Tax Structure and Female Labour Market Participation: Evidence from Ireland

Tim Callan, A. Van Soest, J.R. Walsh

207

Distributional Effects of Public Education Transfers in
Seven European Countries

Tim Callan, Tim Smeeding and Panos Tsakloglou