

Nowcasting the Spatial Distribution of Household Income Inequality in Ireland

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Overview

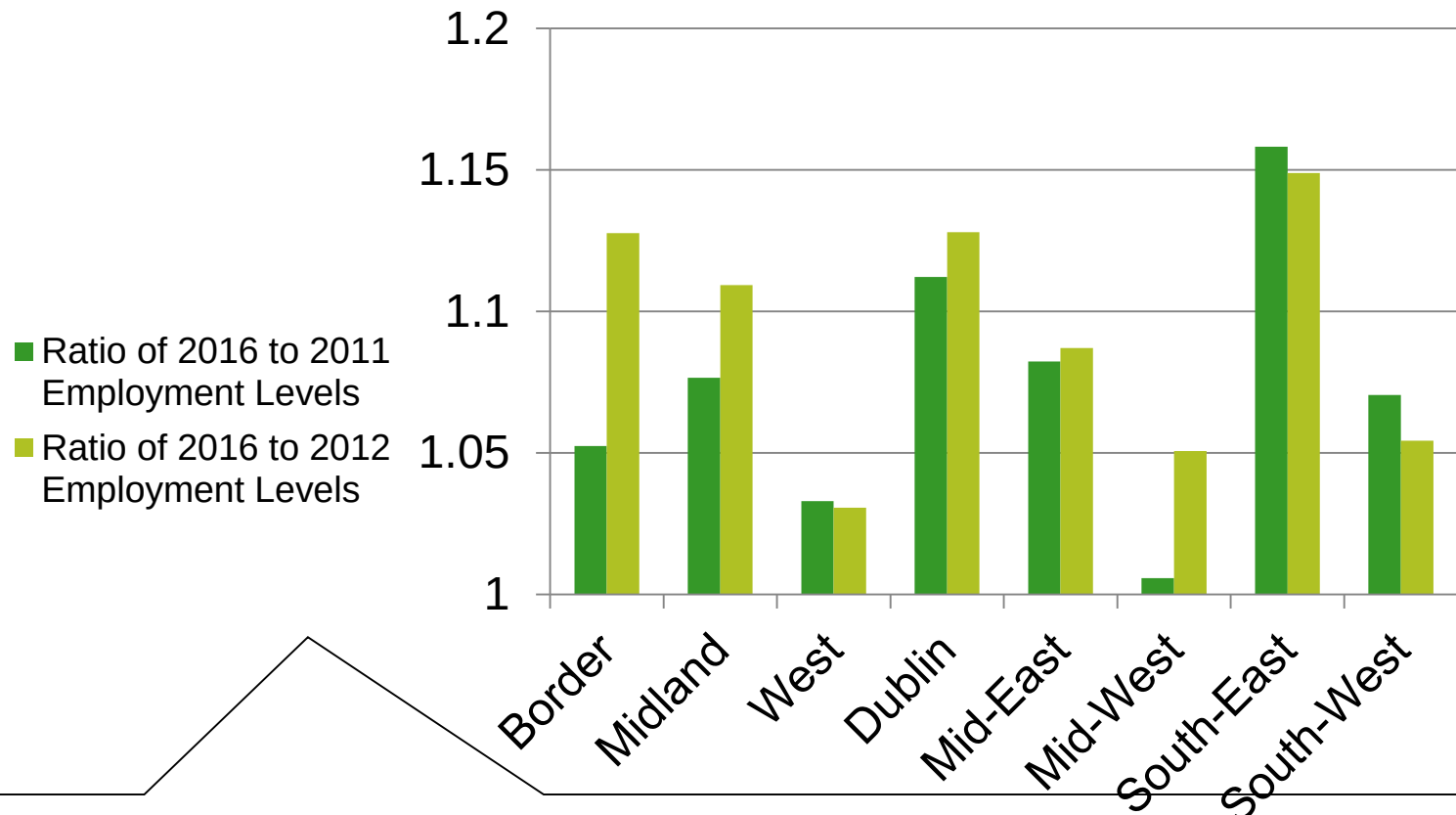
- Background and Data
- Nowcasting Methods
- Results
- Conclusions
- Future Research

Paid Employment Growth



Employment growth since lowest point in 2012 Q1 – 221,000 jobs
- However 5% less than peak → **challenge to create jobs**

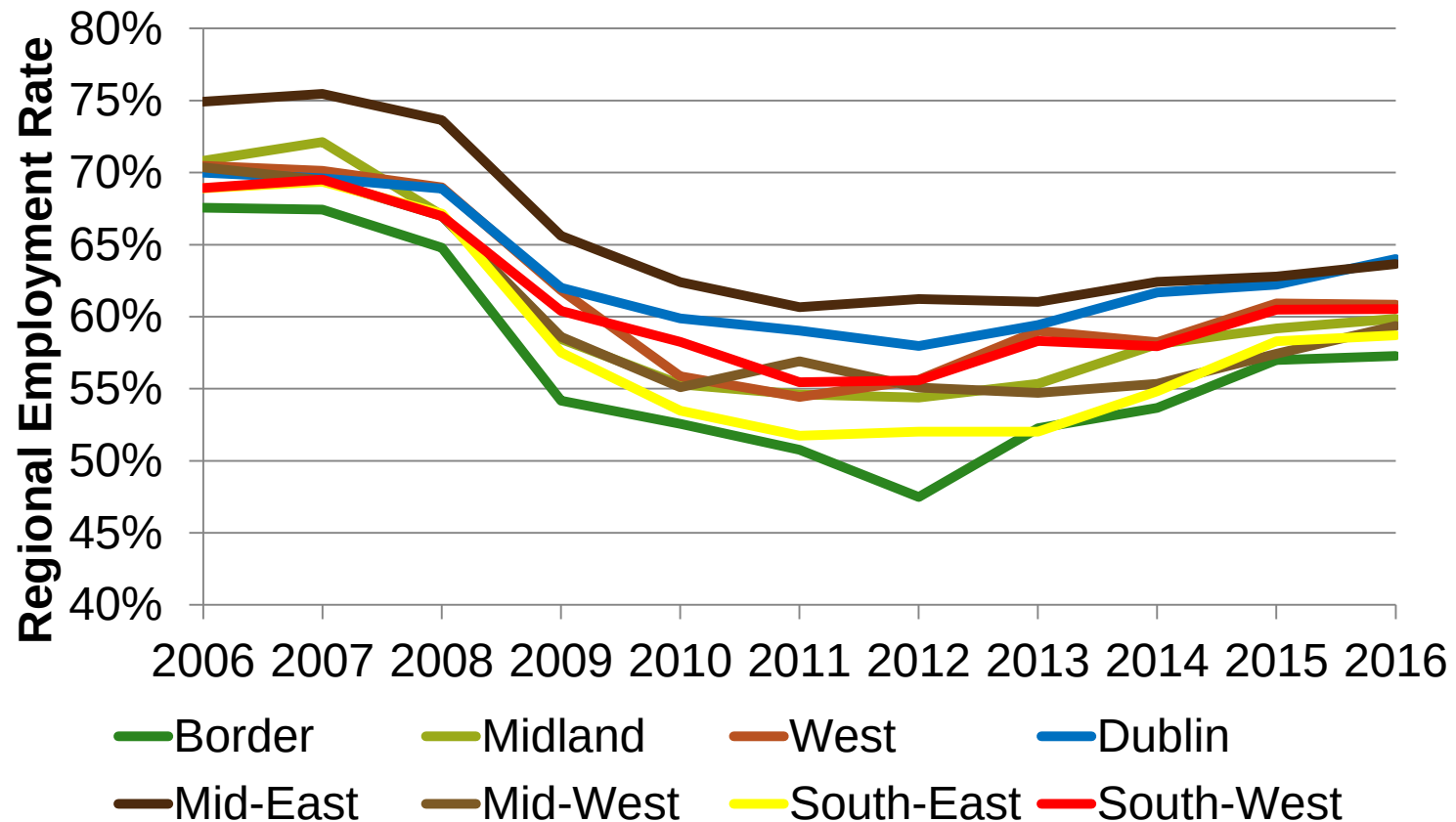
Regional Paid Employment Growth



Employment Growth Highest on East Coast and in Commuting reach of Dublin

West and Mid-West Regions – Weakest Employment Growth

Regional Male Paid Employment Rates 2006-2016



Source: Quarterly National Household Survey

Data

Data Sources

Baseline Data

- SMILE Model [Spatial Model of the Irish Local Economy]
 - A Statistical Match
 1. Small Area Population Statistics 2006 and 2011
 2. Survey of Income and Living Conditions
 - *Adjusted with the CSO County Incomes

See: Morrissey and O'Donoghue (2010)

Data Sources

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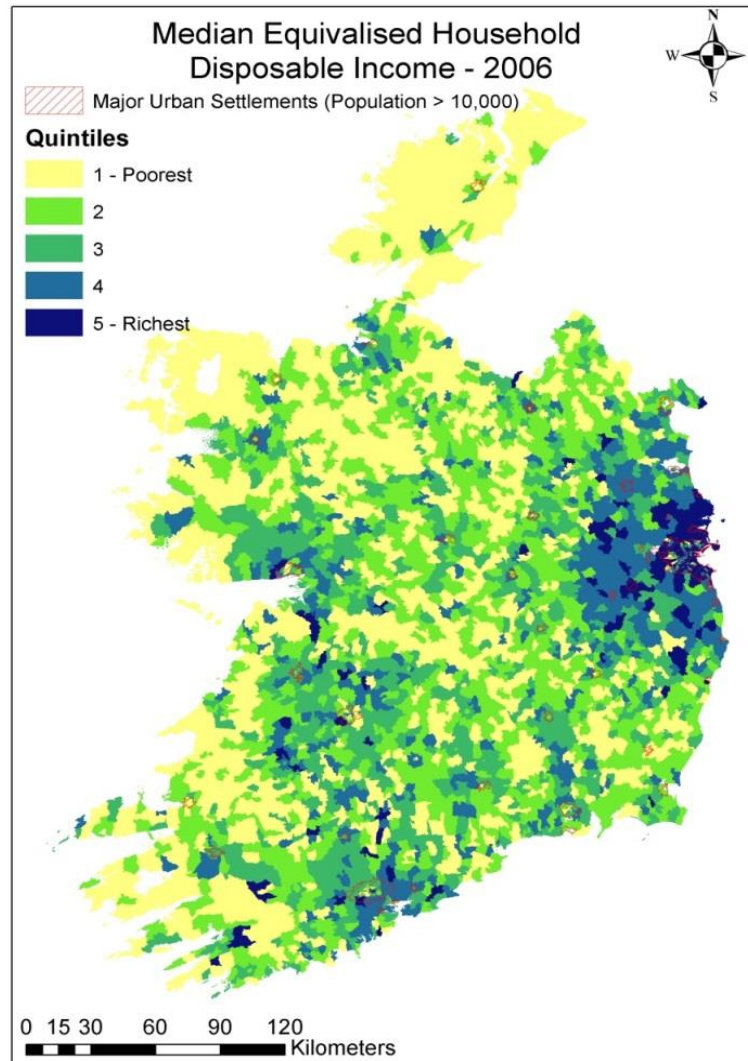
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Nowcasted Data

- SMILE Model updated using the following:
 - Quarterly National Household Survey for Employment Rates
 - The CSO Quarterly Earnings, Hours and Employment Costs Survey
 - The CSO County Incomes

See: Morrissey and O'Donoghue (2010)

SMILE Baseline Data



Disposable Income Per Person by County in 2014

1	Dublin	21,963	10	Wexford	18,213	19	Kerry	17,234
2	Limerick City and County	20,395	11	Kilkenny	18,147	20	Clare	17,201
3	Kildare	19,385	12	South Tipperary	18,137	21	Mayo	16,978
4	Cork City and County	19,234	13	Galway City and County	17,929	22	Cavan	16,889
5	Waterford City and County	18,870	14	Sligo	17,868	23	Longford	16,663
6	Wicklow	18,850	15	Louth	17,626	24	Offaly	16,460
7	Carlow	18,686	16	Leitrim	17,565	25	Monaghan	16,395
8	Meath	18,520	17	Westmeath	17,408	26	Roscommon	16,281
9	North Tipperary	18,305	18	Laois	17,365	27	Donegal	15,061

Nowcasting

Nowcasting Local Employment

1. Calculate the employment rate that would exist if the national age-specific rates applied to each district
2. Divide this age-specific employment rate to the actual employment rate for each district
Measure of relative employment strength for each district i.e. a spatial fixed effect

$$LM_{s,2006} = \frac{IW_{Tot,2006}}{\hat{IW}_{Tot,2006}}$$

3. Multiply the 2016 age-specific employment rate of the district by the value of the labour market strength variable

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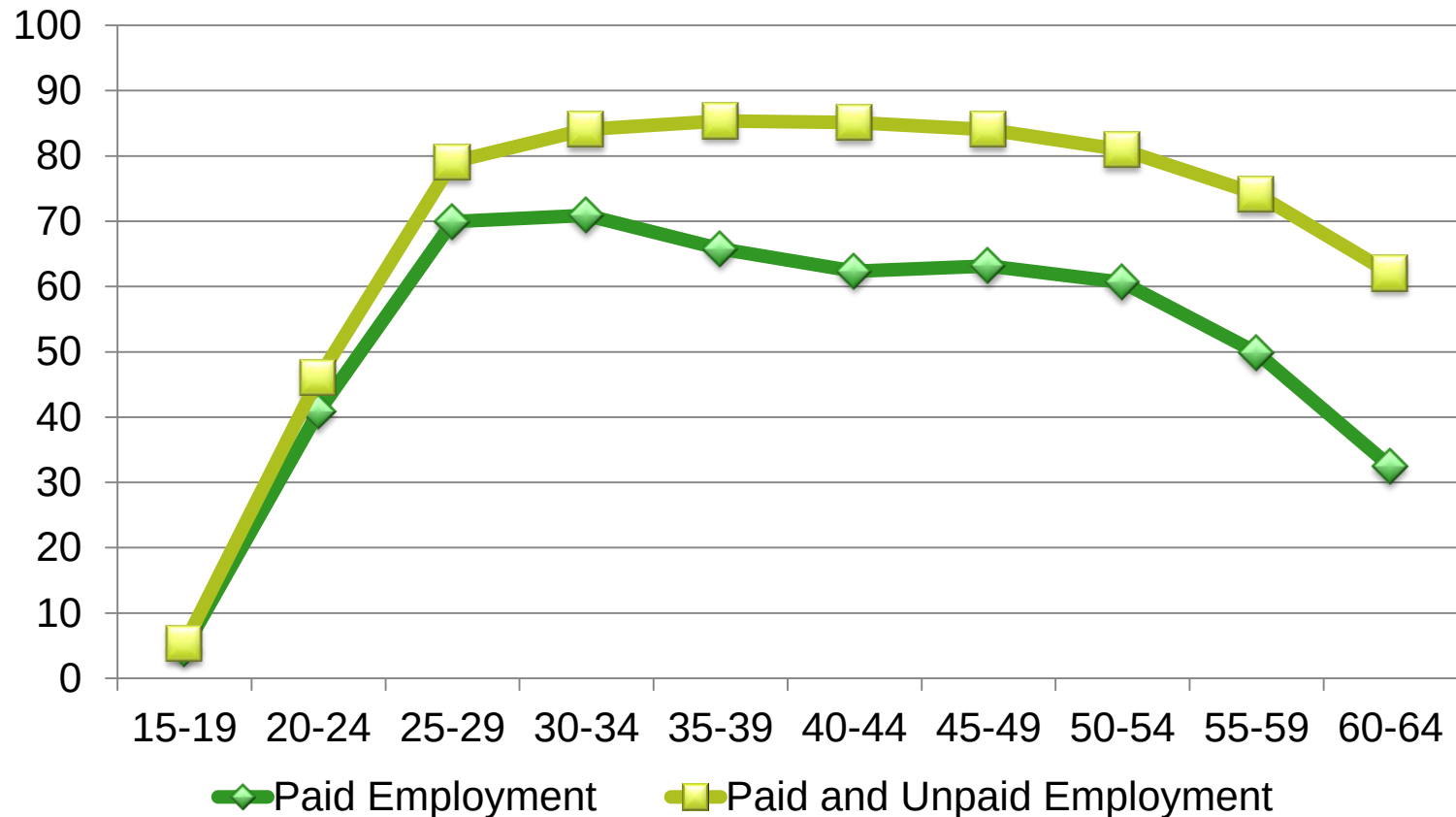
Age-Specific Employment Rates

Age Specific Paid Employment Rates 2006-2016

Age Group	15-19	20-24	25-34	35-44	45-54	55-59	60-64
Males							
Q2 2006	27.6	75.4	88.7	90.4	85.6	73.8	57.2
Q2 2011	8.7	45.1	70	78.3	75.2	65.4	49.7
Q2 2016	14.3	56.5	77.6	84.4	80.5	73.6	56.9
Females							
Q2 2006	21	64.9	75.5	64.4	61.9	47	30.8
Q2 2011	10.6	50.8	69.6	62.1	63.4	53.3	33.1
Q2 2016	14.8	54.3	72.2	69.6	64.8	58.7	37.4

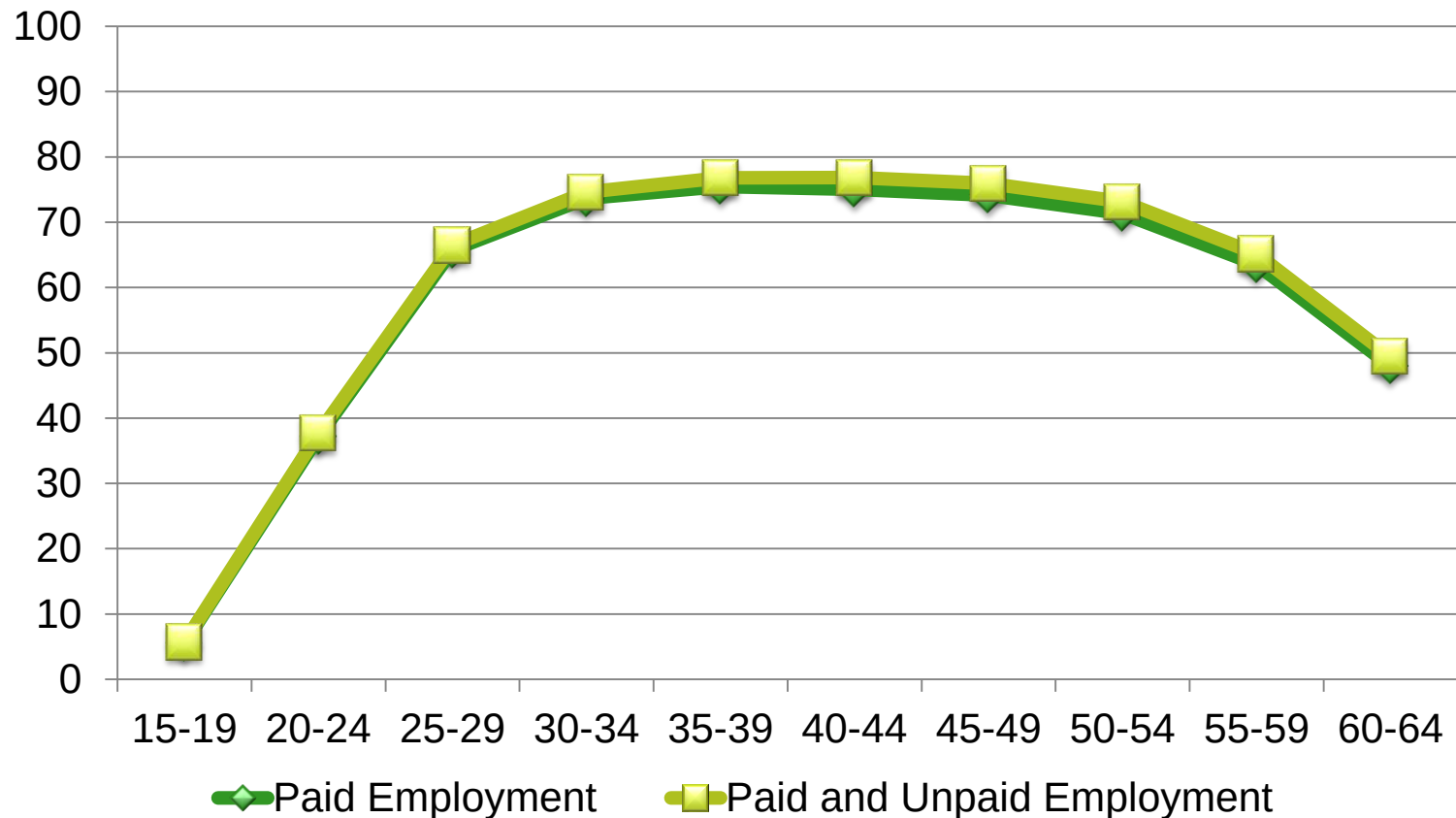
Source: Quarterly National Household Survey

Female Paid and Unpaid Employment Rates by Age Group in 2011



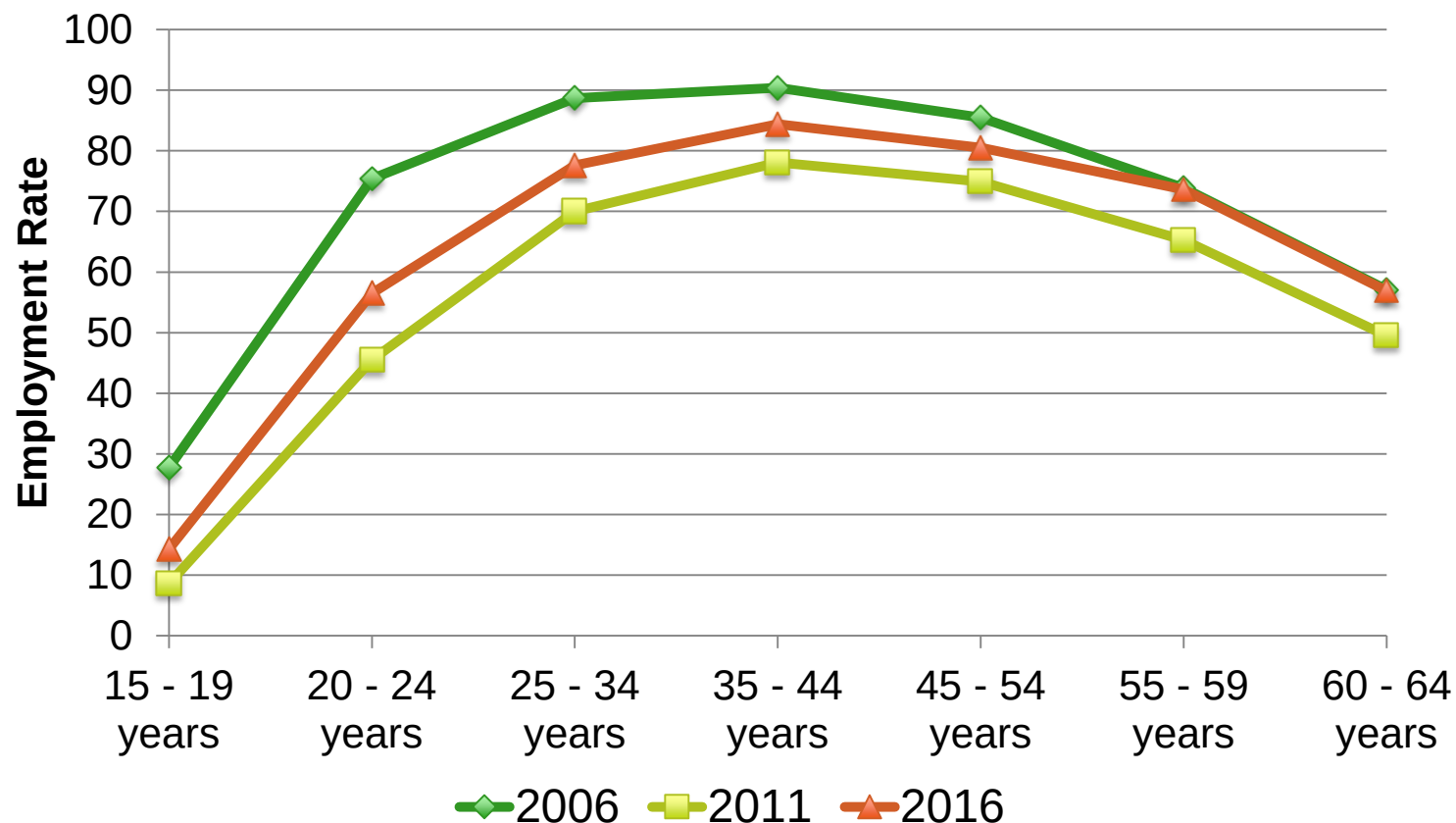
**In this case, unpaid employment includes assisting relatives and looking after home/family

Male Paid and Unpaid Employment Rates by Age Group in 2011



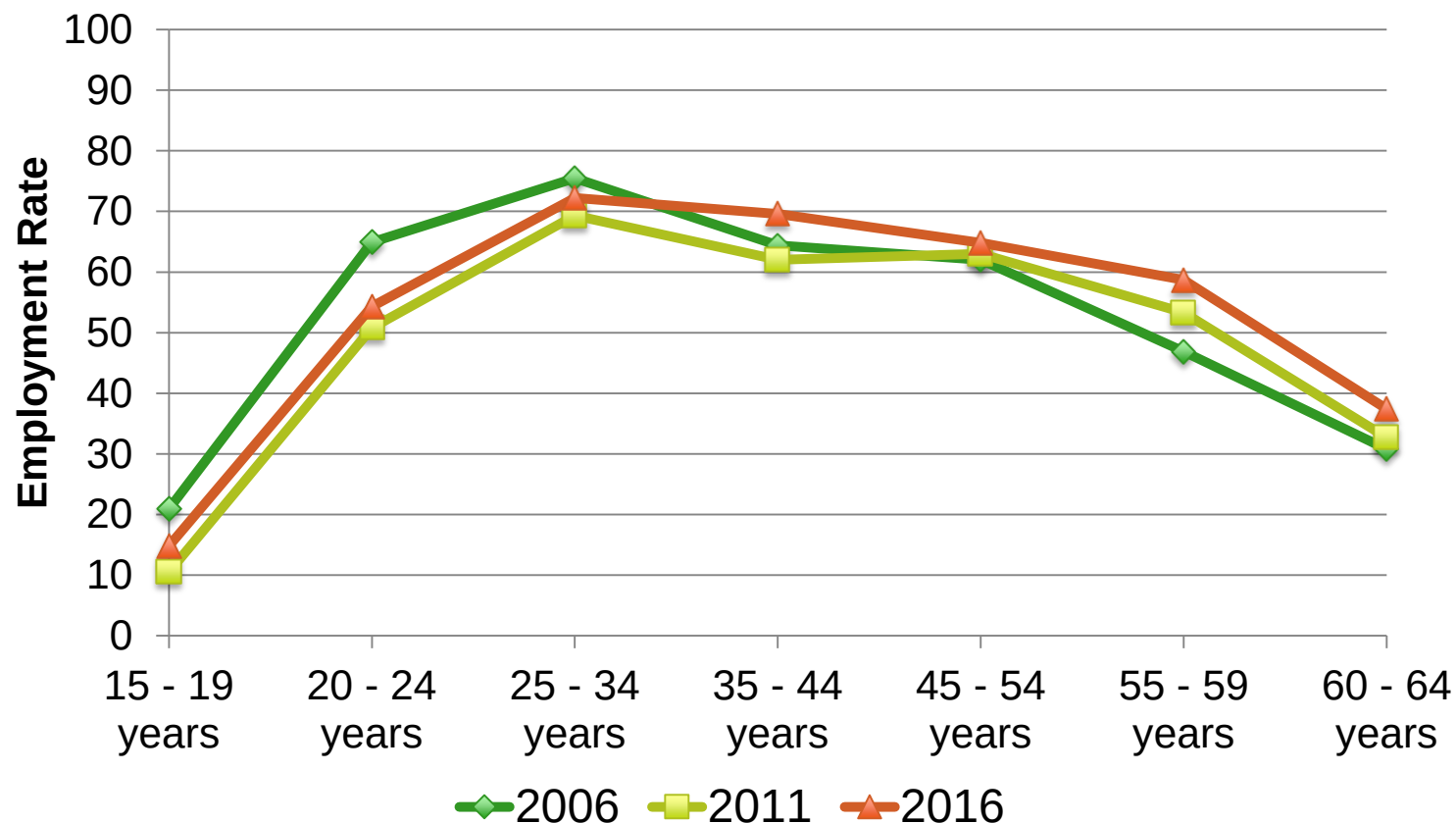
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ILO Male Paid Employment Rates by Age Group



Source: Quarterly National Household Survey 2006-2016

ILO Female Paid Employment Rates by Age Group



Source: Quarterly National Household Survey 2002-2016

Spatial Correlation in Male and Female Employment Rates

- The Correlation in District-level Male and Female Employment Rates ~ 0.64 in 2011 (SMILE Model)
- Appears highest in the major urban centres where locality is a high determinant of employment status, partly driven by age demographics
- The Rise in Female Employment since 1991 and the spatial concentration in overall employment rates?

Validation

Validation: Correlation of 2011 Actual District Employment to Imputed Employment

	1	2	3	4	5
Male	0.668	0.690	0.843	0.852	0.583
Female	0.618	0.628	0.701	0.677	0.327

Note: Scenario 1: National Employment Growth
 2: Age-Sex adjusted employment growth,
 3: Age-Sex adjusted employment growth with 2000 spatial fixed effect,
 4: Age-Sex adjusted employment growth with average spatial fixed effect,
 5 Local social welfare office data

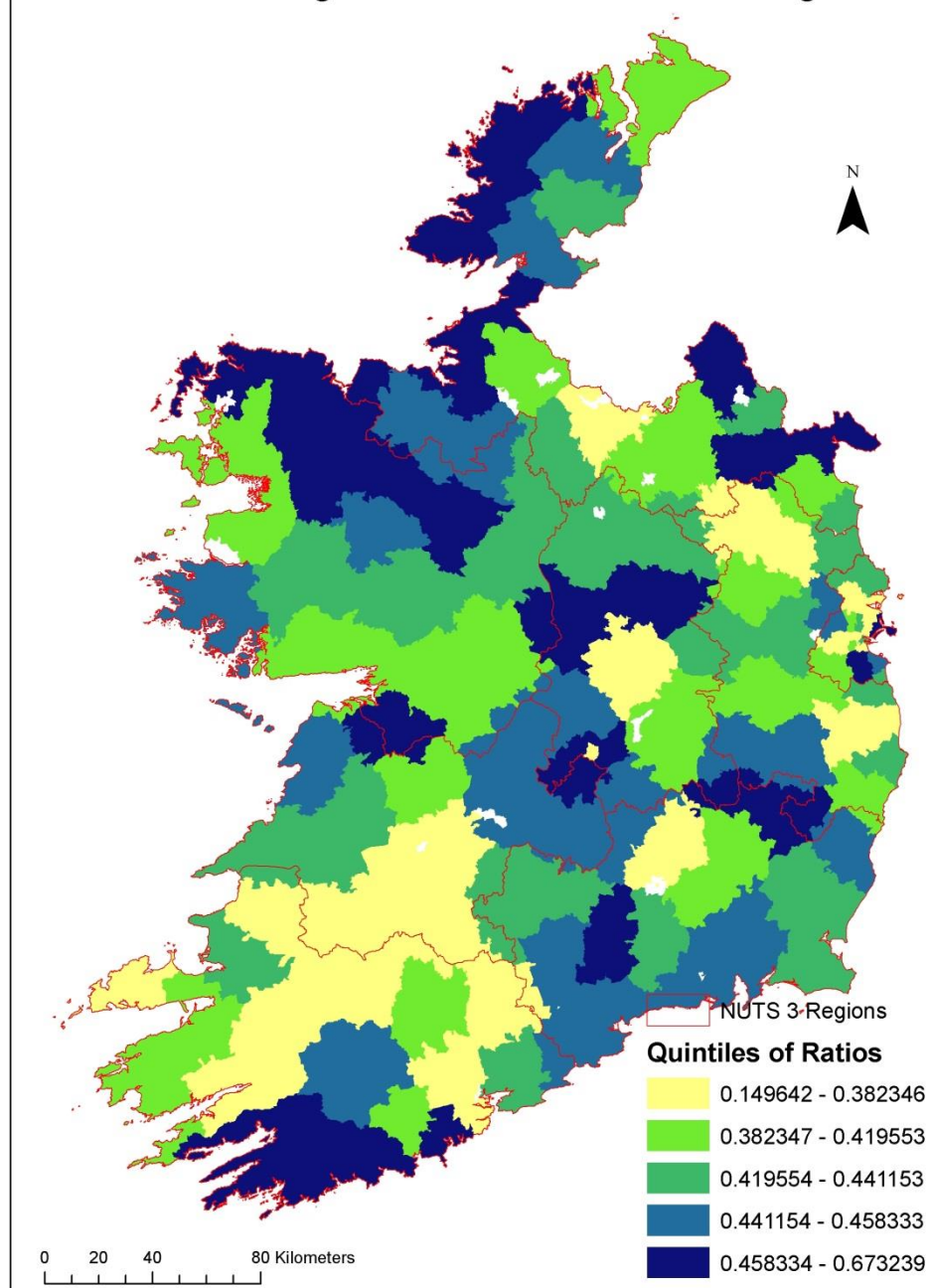
Model Applies this option given the highest Correlation

Change in Live Register

Where Are the Biggest Changes in LR?

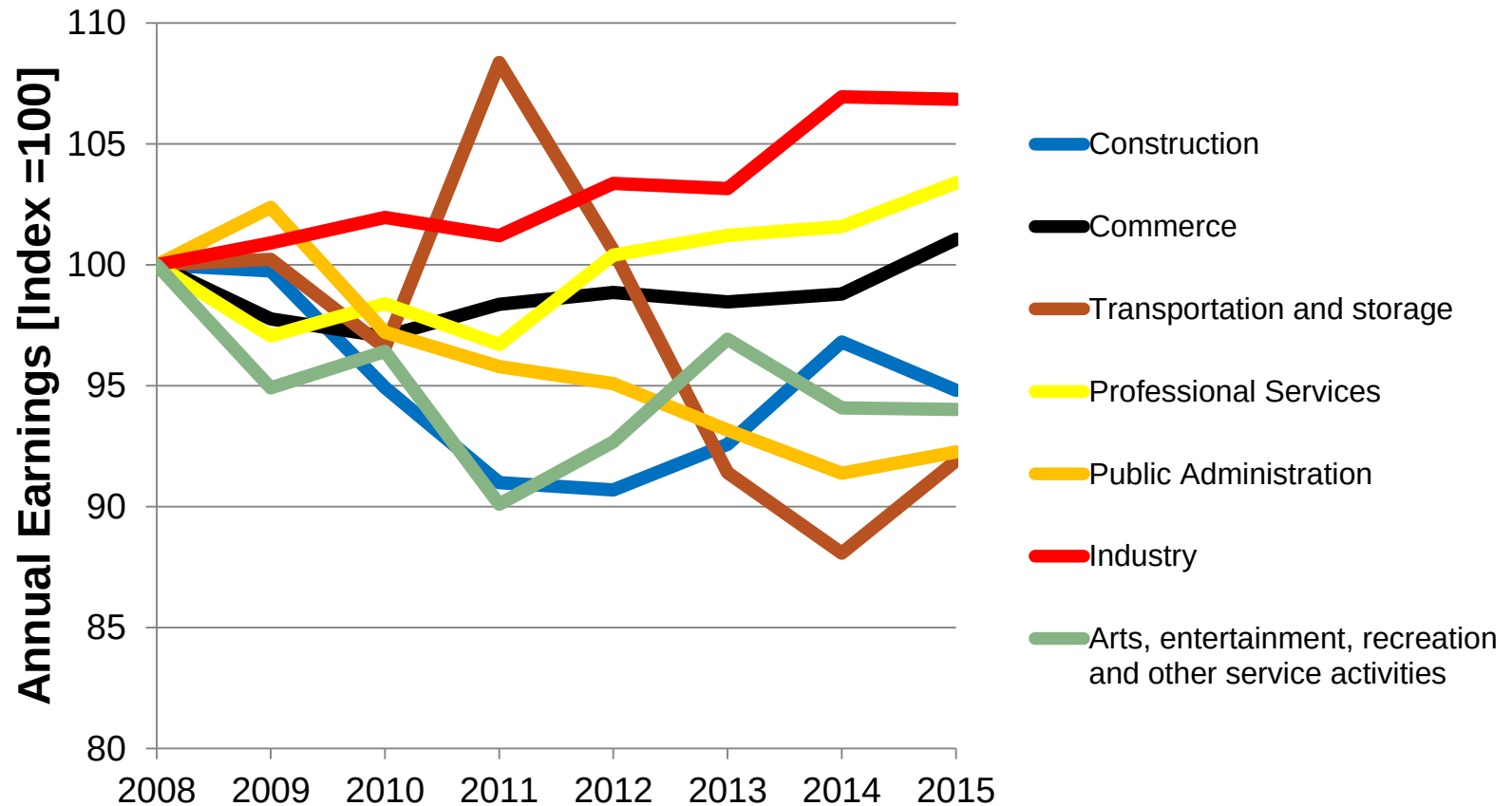
- Cities not visible in Map
- Along West Coast
 - Wild Atlantic Way Effect?
- Lowest falls in midlands

Ratio Live Register - 2016 vs. Max Live Register

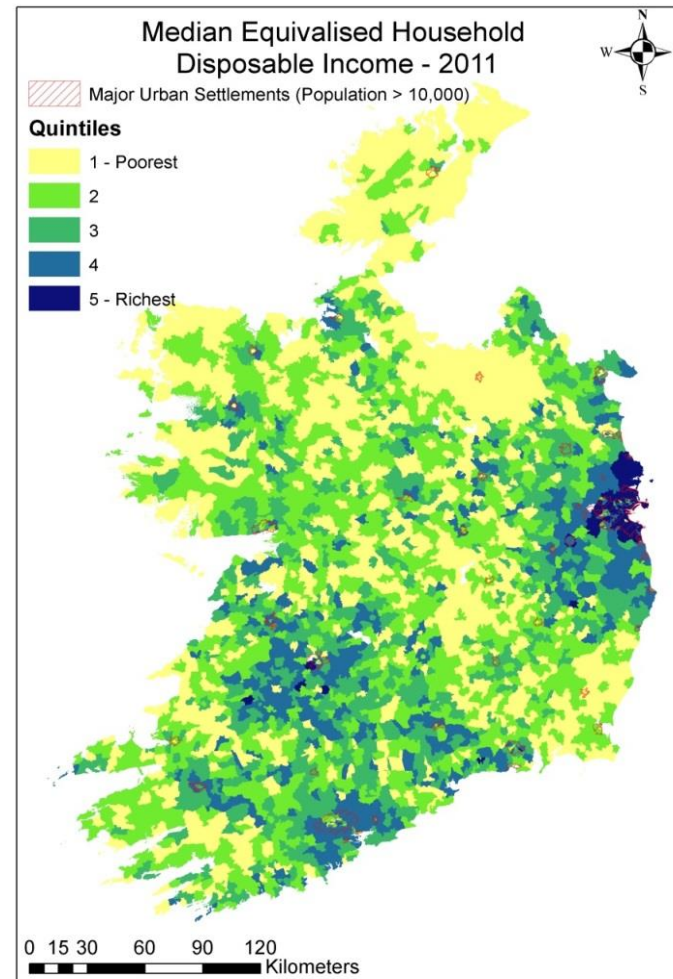
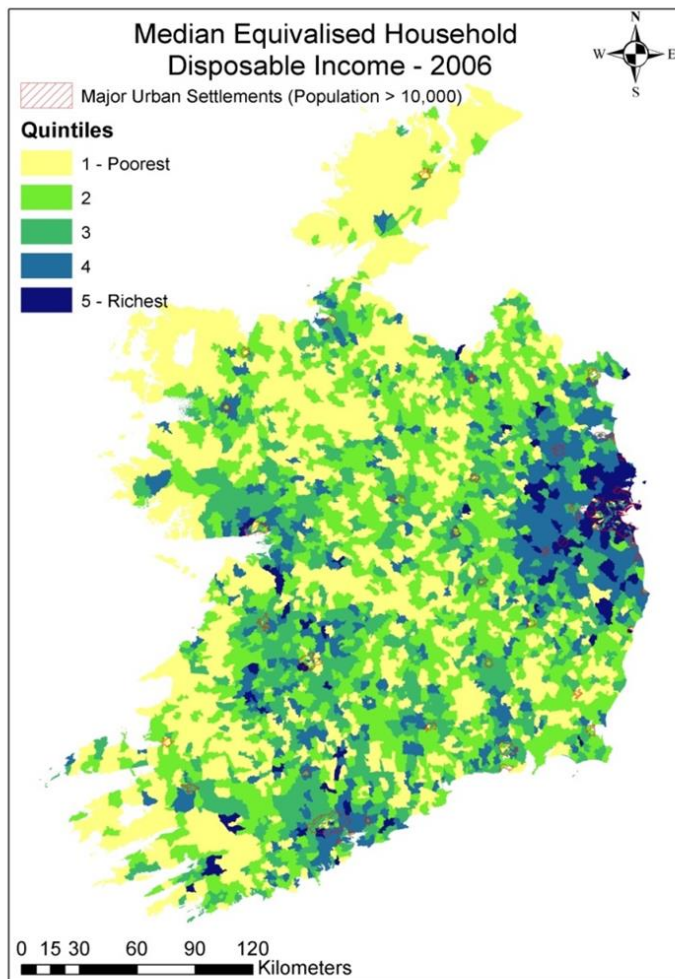


Earnings Growth

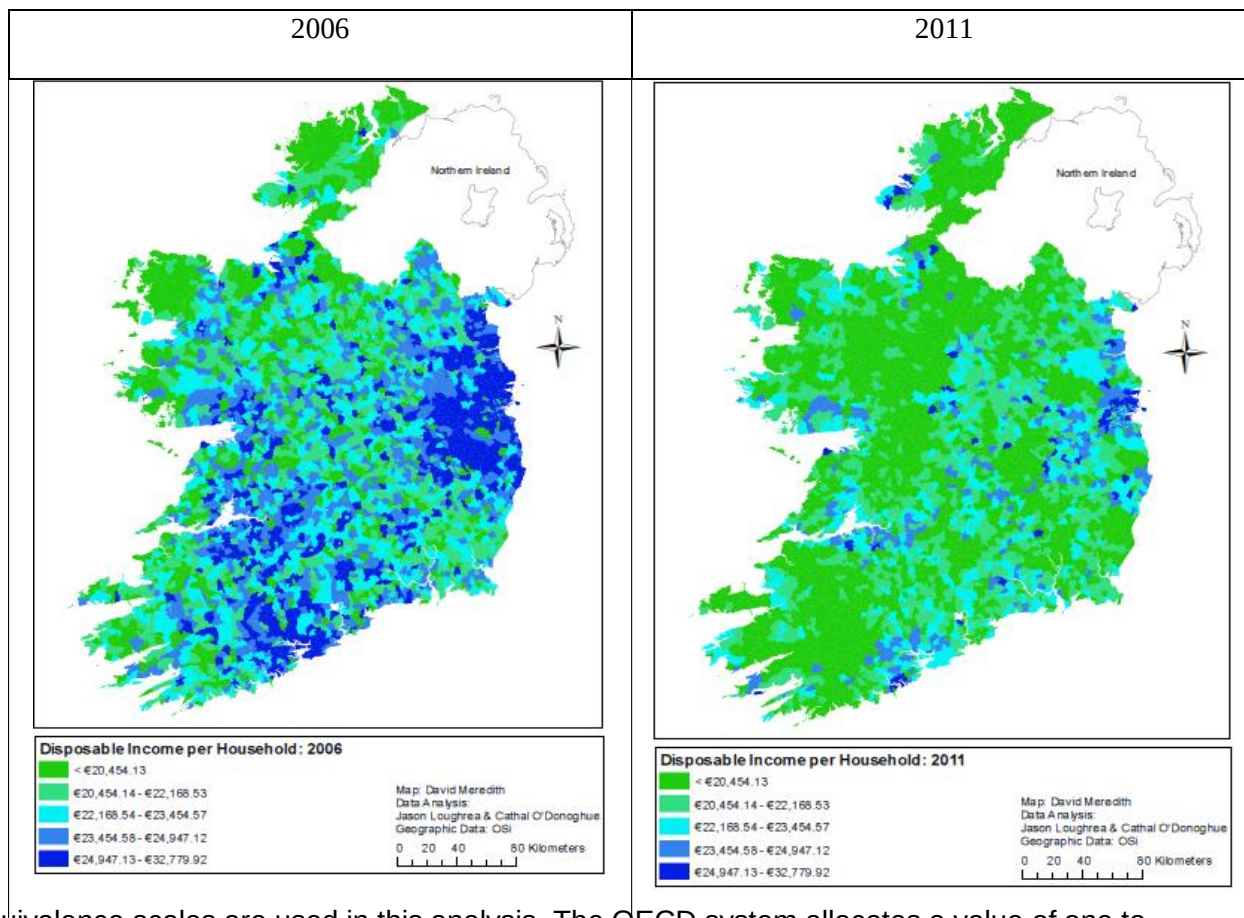
Earnings Growth By Sector



Results: Nowcasting 2011



Equivalised Disposable Income by District



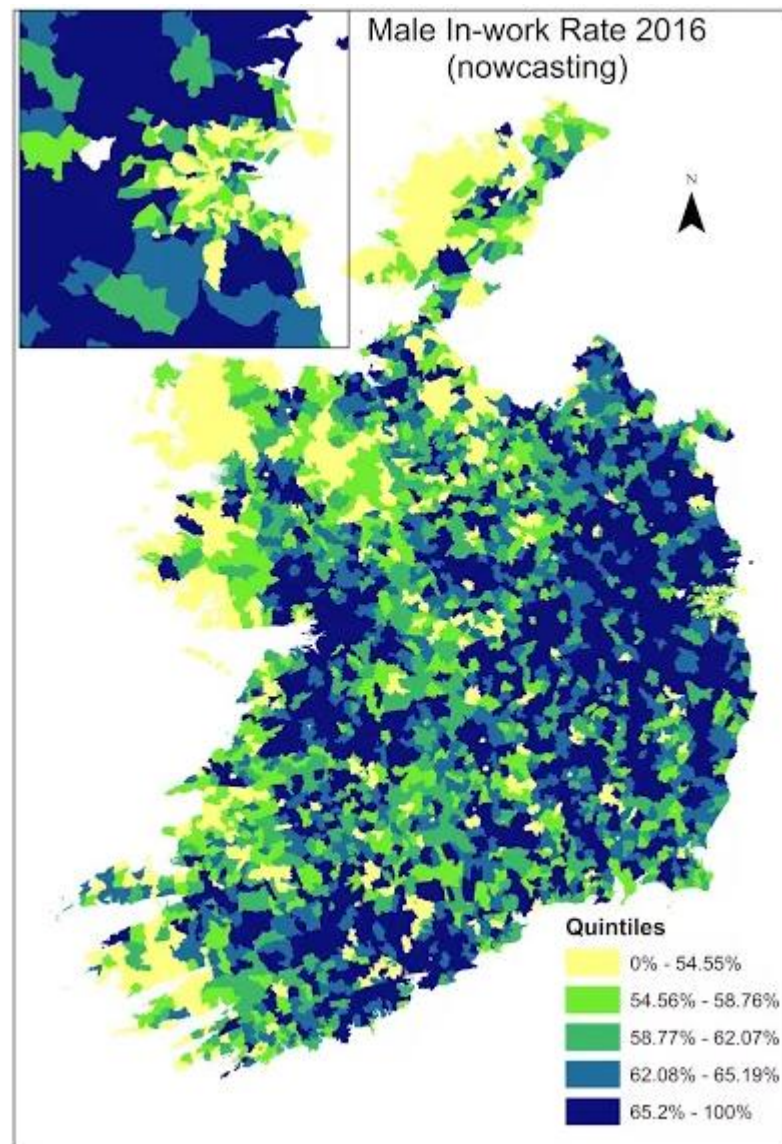
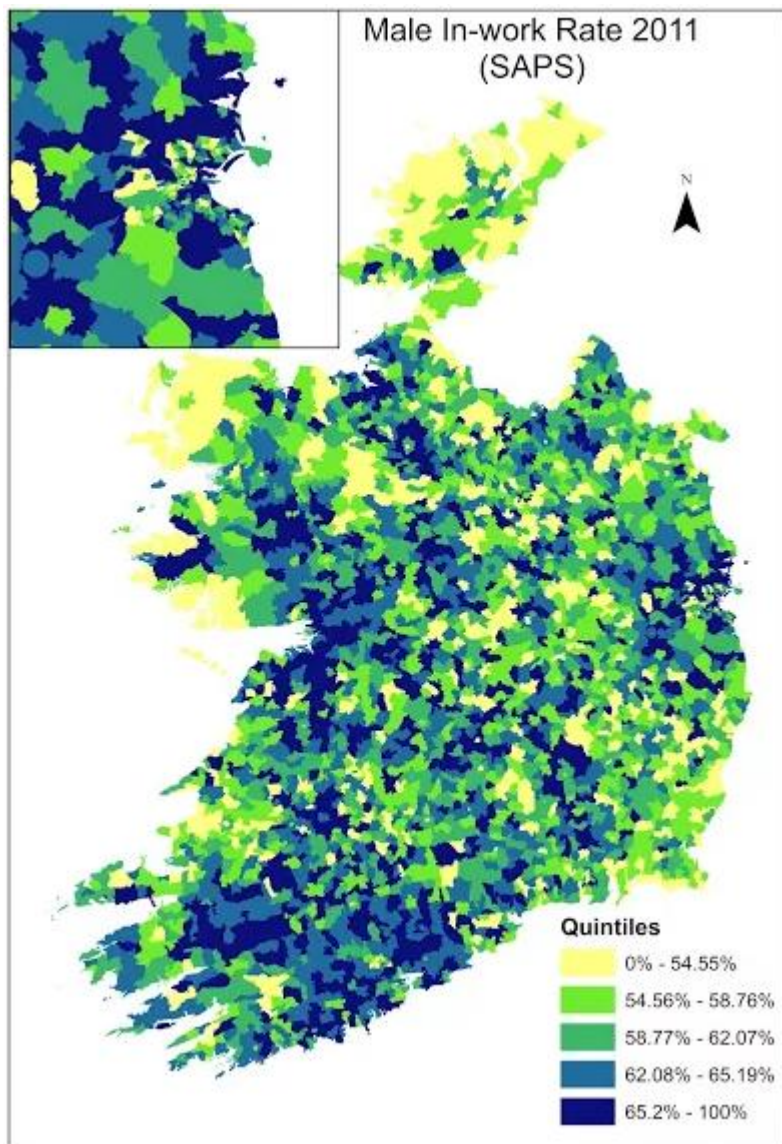
**The OECD Equivalence scales are used in this analysis. The OECD system allocates a value of one to the first adult in each household, a value of 0.5 to each additional adult and 0.3 for each child within each household.

Inter and Intra District Variability

	2006	2011	2006	2011
	Market Income		Disposable Income	
Inter District Share	2.3	3.3	2.8	4.0
Intra District Share	97.7	96.7	97.2	96.0

Note: Inequality is measured by I_2 , half the squared coefficient of variation, based upon equivalised income, utilising a single parametric equivalence scale, with the parameter equal 0.7.

Results: Nowcasting 2016



Conclusions and Next Steps

- Intra-District Inequality accounts for the vast share of Income Inequality
 - However, Between-District Inequalities appear to account for an increasing share of the Inequality in 2011 relative to 2006, 2016?
- Age-Specific Employment Rates are useful for nowcasting local employment rates when Age and Gender are important determinants
 - However, National Employment trends may not always be captured by Age and Gender
 - Region Specific or Industry Specific factors may be more important in future inter-censal periods
- Create SMILE model simulated income measure for 2016
- Identify Spatial Variability in Income Inequality
- Local Poverty Rates

Thank You
Questions and Comments are Welcome

National Planning Framework

- Recognise
 - Quite a young population in towns, even in more remote areas
 - Skills level often lower, particularly in weakest towns
 - Higher unemployment, **Jobless Households**
 - Negative Equity
 - » Likely to remain so for the foreseeable future
- The issue will not go away
 - Long term challenge for services and economic development
- Existing NSS weak on towns → vital to have a national policy for these area
 - Nationally as many people live in rural towns as in Greater Dublin!!

Trends in Spatial Distribution of Income

