# Local Labour Market Concentration Suppresses Earnings and Employment in Ireland

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May 1, 2023

**Abstract**

This note summarizes the findings of our report to the Low Pay Commission of Ireland. We find that many local labour markets in Ireland are *concentrated*: a small number of employers dominate employment. Workers in these markets earn less. Following minimum wage hikes, hours increase for low-wage workers in concentrated markets, suggesting that employers had been suppressing employment. We document the success of the National Minimum Wage in increasing earnings without substantial negative side effects on employment, and provide some evidence on its limitations.

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‡This report is funded by the Low Pay Commission. We use statistical data from Ireland's Central Statistics Office (CSO). The permission for controlled access to confidential micro data sets has been granted in line with the Statistics Act, 1993. The use of these statistical data does not imply the endorsement of the CSO in relation to the analysis or interpretation of the statistical data. We would like to thank Jim Dalton, Morgan O'Donnell, Sam Scriven, Barry Sobey, Rory Cramp, Brian Lenehan, and Anthony Macken for support with the data. **Contact:** kevin.devereux@pku.edu.cn or zuzanna.studnicka@ucd.ie

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# 1 Executive Summary

- In January 2023 Ireland embarked on a multi-year plan to raise the National Minimum Wage (NMW) to 60% of the median wage (from around 52% in 2022). The goal of this 'living wage' initiative is to improve living standards for low-wage earners.

- Low-wage earners may face employment loss or hours reductions if employers find their jobs inviable at the new minimum wage. In this case, some workers benefit from higher wages while others become worse off.

- We find strong evidence of hours *gains* for minimum wage workers (MWWs) in concentrated labour markets following the 2017 and 2018 hikes in the NMW, with null effects or hours losses in competitive markets.

- Whether a local labour market (LLM) experiences employment gains or losses from a minimum wage hike depends on labour market *concentration*. A concentrated labour market is one in which a small number of employers dominate employment. Conversely, a *competitive* labour market is one in which many employers – with comparable market share – compete.

- Nationally, hours increased for MWWs following the 2017 and 2018 hikes, but lower-income/less productive regions showed hours losses, especially for competitive LLMs.

- There exists some minimum wage high enough to make marginal jobs inviable in any market. Above this threshold, further hikes reduce employment. We find suggestive evidence that Ireland had reached this threshold by 2019.

- The pandemic and accompanying restrictions make analysis of the NMW's effect on employment during 2020 to 2021 impractical. In addition, changes in Irish workplaces – including working-from-home and shortened work weeks – as well as industrial realignment likely changed the threshold at which the NMW causes job losses.

- Looking forward, the NMW remains a proven policy tool for improving living standards, but its limitations must be studied and understood. The Low Pay Commission (LPC) has ordered a timely report on the effects of the 2023 NMW hike on employment to be initiated as soon as the first-quarter employment numbers are made available by the Central Statistics Office (CSO).

# 2 Context

In January 2023 Ireland took an unprecedented first step towards raising the National Minimum Wage (NMW) to 60% of the median wage. In nominal terms, the €0.80 increase is the second highest hike in Ireland's history, behind only July 2011's anomalous reversal of the January 2011 decrease of €1.00. The Irish Low Pay Commission (LPC) plans to implement similar hikes in each of the next three years in order to hit the 60% target by 2026 (Low Pay Commission 2022).

Beyond the numbers, the framing of the new target as a "living wage" (LW) represents a potential paradigm shift in how Ireland sets the NMW. Considerations such as "national competitiveness and the level of employment and unemployment [...] are typically absent from the choice of a LW" (Doris et al. 2022), although the LPC explicitly considers these factors under its primary aim, which reads as follows:

> "To have a minimum wage that provides an incentive to work, is set at a rate that is both fair and sustainable, and helps as many people as possible, without a significant adverse effect on competitiveness or a significant negative effect on employment."

The NMW is an effective tool for increasing living standards, as we show in the following sections. Low to moderate NMW hikes increase both earnings and employment. However, if the NMW is raised high enough to cause employment loss or large reductions in hours for low-wage workers, standards of living will decrease for some, and inequality will rise. To achieve its aim of increasing living standards, a LW must be set with regard for employment.

Additionally, the NMW is a blunt tool in the sense that it can target neither different regions – which differ in their response to the NMW – nor the sources of the erosion of living standards.[1] Understanding the limitations of the NMW is crucial to designing effective policy.

# 3 Labour Market Theory

Whether minimum wage hikes have a positive, negative, or null effect on employment is determined by economic conditions. The fundamental consideration is whether the minimum wage meets (or exceeds) the value produced by the marginal worker; above this *threshold level*, employers will respond to further minimum wage hikes with layoffs or hours reductions.[2]

Whether a given minimum wage exceeds the *marginal worker value threshold* depends on three key factors: a) productivity levels, b) labour supply, and c) market structure. All else equal, the higher are productivity levels, the more valuable are workers, so the higher the threshold. All else equal, the less attached workers are to the labour market, the higher the wage they demand in the absence of minimum wage legislation, so the higher the threshold level. The role of market

[1]Doris et al. (2022) show that household expenditure and inflation are concentrated in housing expenditure (namely rent). The Living Wage Technical Group (2021) calculates that their 2022 LW recommendation (based on costs of living rather than median wages) would be €0.45 lower had housing costs stayed at 2020 levels.

[2]Underlying this theory are the following assumptions: the higher are wages, the more people are willing to work (upward-sloping labour supply); and the more workers, the lower the value produced by the marginal worker (downward sloping labour demand).

structure is more subtle, as explained below.

Market structure reflects the nature of competition in a marketplace. In a *competitive* labour market, many employers compete for workers, bidding wages up until they pay workers the value they produce. In this case, either the minimum wage does not bind – and so is irrelevant – or it exceeds the value workers produce, and moves the firm to lay off workers (or reduce hours) until those the remaining workers produce, per hour, a value equal to the minimum wage.

In contrast, a *concentrated* labour market is one in which few employers (or even a single employer) face little (or no) competition. Employers holding large market share decline to bid wages up – and attract more workers – so as to avoid matching higher wages to their existing employees. This suppresses both wages and employment below competitive levels. For such employers, the marginal cost of hiring additional workers is not only their wages, but also the accompanying increase in wages paid to existing employees. Because a binding minimum wage hike forces the employer to pay its existing employees more, it makes hiring additional workers less costly on the margin. Therefore minimum wage hikes can increase both wages and employment in concentrated markets – up to the value the marginal worker produces. Above this *full employment threshold*, employers once again conduct layoffs (or hours reductions).

This framework yields several predictions, which we test in the following sections. These are as follows.

1. Competitive markets pay higher wages than concentrated markets.
2. In competitive labour markets, binding minimum wage hikes reduce employment.
3. In concentrated labour markets, binding minimum wage hikes increase employment up to a threshold level. This threshold is the value produced by the marginal worker.
4. Above this threshold, binding minimum wage hikes reduce employment, even in concentrated markets.

# 4 Data Sources

We test the predictions of the economic theory discussed in the previous section using the Labour Force Survey (LFS) and Business Register (BR), both of which are provided by the Central Statistics Office (CSO). The LFS is a representative sample of Irish households, reporting hours worked, income decile (and in more recent vintages, actual income amount), and the industry and region of employment. The BR is a comprehensive list of Irish businesses, reporting the industry and region of registration, and the number of employees each year.

The characteristic advantage of the Irish data above comparable foreign data is the ability to identify minimum wage workers precisely. The LFS asks respondents the following, along with a follow-up question on the reason why.

> "The National Minimum Wage is €X per hour. Are your gross hourly earnings excluding bonuses, overtime and allowances:
>
> - Less than €X per hour
> - Exactly €X per hour
> - More than €X per hour?"

Implemented in 2016, this simple addition has proven invaluable to identifying the impact of minimum wage legislation on the workers directly affected by it (including work by McGuinness et al. 2019 as well as our own). A common alternative is to approximate the effects using employment in low-wage industries, employment among teenagers, or to divide self-reported earnings by self-reported hours worked (both of which are subject to measurement error). Because they only noisily identifying the population of interest, these approaches are statistically less reliable and less policy-relevant.

## 4.1 What is a Local Labour Market?

To understand the effect of employer concentration on workers, we first need to identify the relevant market. Following recent studies on the US, UK, and various EU economies, we define a local labour market (LLM) as all employment in a given industry, in a given region (specifically: a two-digit NACE industry in a NUTS 3 region). The literature has found that industry-region pairs well approximate the set of jobs relevant to a worker, for which we provide further evidence.[3]

### 4.2 How to Measure Concentration?

We measure concentration using the Herfindahl-Hirschman Index (HHI), used by the US Federal Trade Commission as well as by scholarly researchers in economics. The index ranges from zero (indicating a perfectly competitive market) to one (indicating a single employer, or *monopsonist*). A market split evenly by two employers would have a HHI of one-half, and if split evenly by four employers would have a HHI of one-quarter.

## 5 Findings

Our report to the Low Pay Commission is comprised of two research papers. The first documents local labour market (LLM) concentration in Ireland from 2008 to 2019, and tests whether workers in concentrated LLMs earn less (prediction 1). The second tests whether National Minimum Wage (NMW) hikes have different effects on employment depending on LLM concentration (predictions 2 and 3), and whether successive hikes have diminishing returns (prediction 4).

### 5.1 Concentration and Earnings

In Devereux and Studnicka (2023a) we present the first evidence on local labour market (LLM) concentration in Ireland. LLM concentration in Ireland surged during the financial crisis, before falling to pre-crisis levels by 2012. It declined further until stabilising in 2016. This trend mirrors those of the US and UK over

[3] Most regions in Ireland show little cross-region commuting, with the exception of Dublin and the Mid-east (consisting of Wicklow, Kildare, Meath, and Louth). For this region we combine these two regions into a single commuting zone.

the same time period. In Ireland, the surge and subsequent decline in concentration were driven by the number of active firms: concentration surged as firms shut down during the crisis, and fell as new firms opened up during the recovery.

There is substantial variation in average LLM concentration across regions. The Midland has the highest average concentration in every year from 2008 to 2019, and Greater Dublin (consisting of Dublin and the surrounding counties) the lowest. There is also large sectoral variation, with the typically low-wage sectors of *manufacturing* and *accommodation and food services* having low levels of concentration, and *manufacturing* having concentration around the middle of the range. Other sectors have a higher level of concentration on average.

We find that workers in concentrated LLMs earn slightly less on average. Leveraging national trends in firm openings and closings within industry to explain local changes in concentration, we find that concentration causes a large and statistically significant reduction in earnings. A 10% increase in concentration reduces earnings by 2.7%, while a 100% increase in concentration – equivalent to a shift from two equally-sized competitors to a single monopsonist – would reduce earnings by 27%. This effect is about twice the magnitude seen in US studies. Further work, perhaps exploiting within-market mergers, should be done to ensure the reliability of these findings.

These results have implications for competition regulation and minimum wage legislation. Given that concentration allows employers to suppress labour market earnings, regulators should be cognisant of the effects of mergers on labour markets – not just product markets. This evidence also suggests the viability of minimum wages to increase workers' earnings without substantial employment losses – in fact, with potential gains to employment. We investigate this in the second paper.

## 5.2 Concentration, Minimum Wages, and Employment

In Devereux and Studnicka (2023b) we study the change in hours for minimum wage workers (MWWs) in concentrated LLMs in Ireland over the period of 2016 to 2019. For the nation as a whole, the successive NMW hikes increased hours for this group through 2018 without negative effects for MWWs in non-concentrated LLMs. In contrast, the 2019 NMW hike caused no further increase in hours, with negative – albeit statistically insignificant – estimates for some specifications.

Both results – hours increases for workers in concentrated markets, with a declining response to successive minimum wage hikes – are consistent with the labour market theory detailed in section 3. The first result shows the potential for minimum wage hikes to increase wages for low-wage workers without employment losses (prediction 3). This is in line with a large, though contested, literature showing positive employment effects of minimum wages. The second result provides suggestive evidence of a reversal in the relationship between the minimum wage level and hours after the threshold level is reached (prediction 4). Theory predicts that even in concentrated labour markets, minimum wage hikes will reduce employment after exceeding the threshold determined by the value produced by the marginal worker. Our results suggest that Ireland's NMW may have reached this threshold by 2019, but the small and statistically insignificant effects are inconclusive. The onset of the pandemic and accompanying restrictions in 2020 makes analysis of the subsequent NMW hikes difficult.

Together our results a) show the viability of the Irish NMW to increase wages for low-wage workers in concentrated LLMs without negative side effects in non-concentrated LLMs; and b) suggest that by 2019 the Irish NMW had reached a level somewhere around the national average full employment wage for MWWs, above with further hikes risk employment losses. The latter is less certain, and does not provide a strong caution against further NMW hikes, as much has changed in the Irish economy since 2019. Career interruptions and retirements, changes in industrial composition, and reorganisations of the workplace – including remote work and shortened work weeks – may affect productivity in such a way as to change the full employment wage threshold.

Our main results mask substantial underlying heterogeneity across regions, industries, and groups of workers. The headline results are driven by Greater Dublin (the combination of Dublin and the Mideast region), the Southeast, and Southwest. However, the West and Midlands show hours losses (in line with prediction 2), suggesting vulnerability to further hikes. Surprisingly, typical low-wage sectors – *wholesale and retail*, *accomodation and food services*, and *manufacturing* – do not drive the overall responses; these are driven by MWWs in other sectors. Among worker groups, the main results are driven by prime age workers (ages 25 to 54), as well as Irish nationals.

# 6 Implications

Whether labour markets are competitive or concentrated determines which policies will help workers, and which are likely to backfire. Our report to the Low Pay Commission (LPC) provides the first evidence of local labour market (LLM) concentration in Ireland and its effect of earnings, and evaluates the efficacy of hikes in the National Minimum Wage (NMW).

We show that the NMW has been an effective tool to increase earnings for low-wage workers in Ireland. In concentrated LLMs, NMW hikes have increased employment among minimum wage workers (MWWs), and in competitive LLMs, NMW hikes have decreased MWW employment only in low-income regions. We find suggestive evidence that the NMW reached the limit of its efficacy in 2019, but much has changed since then and further study is needed.

At €0.80, the recent NMW hike of 2023 was larger than the respective hikes from 2017 to 2019 of €0.10, €0.30, and €0.25 that we considered in our study. Pandemic restrictions make the intervening years difficult to analyse, since disruptions to workplaces overshadow any effect the 2020 to 2022 NMW hikes had on hours and employment relationships. The coming months will provide fresh evidence relevant to the viability of future hikes.

In future reports the the LPC we plan to a) estimate the first-quarter employment effects of the 2023 NMW hike in time to brief the LPC in advance of their 2023 report; and b) provide a comprehensive evaluation of cross-region commuting, concentration, and minimum wages in Ireland in order to probe the viability of regional minimum wage regulation.

# References


Devereux, K. and Studnicka, Z. (2023a). Local labour market concentration and earnings in Ireland. *UCD Economics Working Papers*.

Devereux, K. and Studnicka, Z. (2023b). When and where do minimum wages increase employment? Evidence from Ireland. *UCD Economics Working Papers*.

Doris, A., O'Neill, D., Sweetman, O., et al. (2022). The introduction of a living wage in Ireland. *Economics Department Working Paper Series*, (316):22.

Living Wage Technical Group (2021). Living wage update 2021/2022.

Low Pay Commission (2022). Living wage report.

McGuinness, S., Redmond, P., and Delaney, J. (2019). *The prevalence and effect on hours worked of the minimum wage in Ireland: a sectoral and regional analysis*. Number 93. Research Series.