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The impact of a minimum wage increase on prices

PAUL REDMOND, ELISA STAFFA AND SEAMUS MCGUINNESS

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Executive summary

Minimum wage increases have the potential to impact a range of outcomes. Much of the existing evidence focuses on the employment outcomes of minimum wage workers following a minimum wage change. However, another important channel of adjustment that has received comparatively less attention is the impact on prices. When facing wage pressure and higher labour costs following a minimum wage increase, some firms may respond by raising prices and therefore shift part of the cost increase to consumers. From a policy perspective, the possibility of minimum wage related price increases can lead to concerns around general price inflation, affordability and competitiveness.

In order to assess the relationship between minimum wage policy and prices, we use data on approximately 600 price categories in Ireland over the period 2012-2025. Our approach is to examine the causal impact of minimum wage increases on the prices of goods or services that are produced using high concentrations of minimum wage employees. Price categories that are associated with occupations or sectors that employ a high number of minimum wage employees include: hairdressing, takeaway food/coffee, restaurant meals, hotels, alcohol sold in licenced premises. Price changes that occur within these categories may relate to general inflation dynamics and/or minimum wage changes. We use a triple differences estimator to attempt to separate these effects, allowing us to isolate the causal effect of a minimum wage increase on prices. We apply this to eight minimum wage increases that occurred in the following years: 2016, 2017, 2018, 2021, 2022, 2023, 2024, 2025.

For seven of the eight minimum wage increases that we analyse, we detect no impact on prices. For a subset of price categories, we detect an impact on prices following the 2024 minimum wage increase which, at 12.4 per cent, was the largest minimum wage increase to date. The price categories that appear to be impacted by the 2024 minimum wage increase include hairdressing, takeaway meals/coffee and restaurant meals. The implied elasticity associated with the 2024 minimum wage increase is 0.2, meaning that a 10 per cent increase in the minimum wage led to a 2 per cent increase in prices among the impacted categories in 2024. The price effects occur up to three

months following the minimum wage increase, which is in line with international evidence. We do not find evidence of minimum wage related price effects for hotels, guesthouses, B&Bs and alcohol served in pubs.

While our evidence indicates that larger minimum wage increases can lead to price increases among certain categories of goods and services, the effect of minimum wage increases on the overall Consumer Price Index (CPI) are likely to be relatively small. The CPI weights associated with the impacted price categories make up just 11 per cent of the overall CPI. The elasticity of 0.2 detected for 2024, along with the fact that other smaller minimum wage increases show no statistically significant impact on prices, suggest that the contribution of modest minimum wage increases to the CPI is negligible.

For the larger 2024 minimum wage increase, for which we detect a price effect, we carry out a simulation exercise to evaluate the potential contribution of minimum wage induced price effects on the overall CPI. We first calculate the inflation rate based on the weighted price index of all price categories from December 2023 to December 2024. We then remove the estimated price effects associated with the impacted categories that we detect using our triple differences estimator. We calculate an actual inflation rate of 1.8 per cent. We estimate that, in the absence of a minimum wage increase in 2024, the inflation rate would have been 1.5 per cent.

Our analysis reveals that other policies and events that occurred from 2016 to 2025, apart from minimum wage increases, had a far greater impact on prices in sectors such as hairdressing and food outside the home. VAT adjustments in 2019 and 2023, whereby the VAT rate increased from 9 per cent to 13.5 per cent, along with the first re-opening of the economy in mid-2020 following the onset of the COVID-19 pandemic, led to price increases that were up to three to four times larger than the 2024 minimum wage effect.

We also estimate the percentage of the total wage bill in Ireland that is attributable to minimum wage employment. We estimate that 2.7 per cent of total employee compensation goes to minimum wage employees. Our estimate is very similar to recent estimates that calculate the percentage of the total wage bill in the UK that goes to workers on the UK Living Wage.

The research shows that the majority of minimum wage increases that took place between 2016 and 2025 had no significant impact on inflation and, by extension, consumer affordability and general competitiveness. However, larger minimum wage increases, such as the 2024 increase, can potentially contribute to inflation. The study demonstrates that other policies, such as VAT increases, have had a much greater impact on the price of minimum wage intensive goods and services.

Chapter 1

Introduction

1.1 Introduction

The minimum wage literature has largely focused on how a minimum wage change affects employment of minimum wage workers (i.e. the extensive margin), or the number of hours worked by minimum wage workers (i.e. the intensive margin). Recent work for Ireland shows that minimum wage increases have led to some reductions in the hours worked of low-paid workers, but no impact on employment (see e.g. Redmond and McGuinness, 2024; Redmond et al., 2025; Redmond et al., 2026). However, when facing wage pressure and higher labour costs following a minimum wage increase, firms can potentially respond by raising prices and therefore shift part of the cost increases to consumers; this is often called ‘price pass-through’. This is more likely to occur in occupations or sectors that employ high numbers of minimum wage workers and sell non-traded goods or services.¹ Relative to the evidence on employment effects, the literature on minimum wage price pass-through is relatively under-developed, and this appears to be related to difficulties in sourcing relevant data and employing empirical techniques that allow for causal inference.

Using disaggregated price data for approximately 600 price categories in Ireland, we estimate the effect on prices of a series of minimum wage increases that occurred over the period 2016 to 2025. We examine price changes among price categories that are produced using a high concentration of minimum wage employees. The price changes among these ‘treated’ categories is then compared to price changes among the general CPI, absent the treated categories, following a minimum wage increase. We then account for potential seasonal variation that may have occurred even in the absence of a minimum wage increase using pre-treatment (pre-2016) placebo periods. Our estimator can, therefore, be viewed as a triple differences estimator; it takes the difference in the price change among treated and control price categories following a minimum wage increase, and examines whether this difference is different to the price dynamics that

¹ Tradable goods or services can be traded internationally, while non-tradable goods or services are produced and consumed locally. Examples of tradable goods include manufacturing goods, digital services, etc.; examples of non-tradable goods include personal care services and restaurant meals.

are observed over the same months in years when the minimum wage was unchanged.

For seven of the eight minimum wage increases that we investigate, we detect no statistically significant price pass-through. We do detect an impact on some prices for the 2024 minimum wage increase which, at 12.4 per cent, was the largest minimum wage increase to date.

However, the magnitude of the price pass-through is relatively modest and relates to a small subset of price categories. The implied elasticity from the 2024 minimum wage estimate suggests that a 1 per cent increase in the minimum wage is associated with a 0.2 per cent increase in prices for the following categories: hairdressing, takeaway coffee and sandwiches, takeaway meals and restaurants.

The impact of modest minimum wage increases on overall inflation (as measured by the Consumer Price Index (CPI)) is likely to be quite limited. We detect no effect for most of the minimum wage increases that we study, that are typically in the range of a 3 to 6 per cent increase. For the larger 2024 minimum wage change, for which we find an effect, we strip out the minimum wage impacts to simulate a counterfactual inflation rate. From December 2023 to December 2024, we calculate an inflation rate of 1.8 per cent. In the absence of a minimum wage change, we estimate that inflation would have been 1.5 per cent.

From a policy perspective we find that the vast majority of minimum wage increases in Ireland have generally not impacted annual inflation rates and, by extension, consumer affordability and general competitiveness. However, some inflationary pass-through effects are possible for larger minimum wage increases, such as the one that occurred in 2024. The study demonstrates that other policies, such as VAT increases, have had a much more significant impact on prices than minimum wage changes.

1.2 Related literature

Clemens (2021) provides a theoretical framework to understand the potential price ‘pass-through’ mechanism associated with minimum wage changes and how it relates to the market structure that the firm operates in. If the demand for a firm’s output is not perfectly elastic, the firm may be able to raise its prices following a minimum wage increase. Firms operating in markets for traded goods and services typically face highly elastic demand, and this limits their ability to

increase prices. In contrast, firms producing non-tradable goods and services face less elastic demand and have greater capacity to pass rising costs on to consumers (Moretti 2010; 2011). Examples of non-tradable goods include personal care services and restaurant meals.

Early empirical work by Card and Krueger (1994) found that a minimum wage increase in New Jersey led to price increases in fast-food restaurants.² Using price survey data collected among store managers, they found that the 10 per cent minimum wage increase raised prices in New Jersey by up to 4 per cent compared to Pennsylvania (where no minimum wage change occurred). More recent work by Ashenfelter and Jurajda (2022) investigated the effect of a series of state and local minimum wage increases in the US over 2016-2020 on Big Mac prices, by employing survey data from almost all McDonald's restaurants in the US. The authors found evidence of a near-full (~70 per cent) pass-through; higher labour costs were passed on to consumers via higher menu prices.

Also for the US, Aaronson (2001) and MacDonald and Aaronson (2006) analysed the impact of federal and state minimum wage increases using microdata on the Food Away from Home (FAFH) component of the CPI for several metropolitan and urban areas in the 1980s and 1990s. Minimum wage increases were associated with statistically significant price increases, mainly occurring within a three-month window after the minimum wage change. Price increases were found to be larger in fast food restaurants and in low-wage areas, where reliance on minimum wage employment was greater. Findings showed that a 10 per cent increase in the minimum wage was associated with a 0.7 per cent increase in FAFH prices (Aaronson, 2001), or with a 0.8 per cent increase in fast food prices (MacDonald and Aaronson, 2006). Again, using microdata on the Food Away from Home (FAFH) component of the CPI over 1978-2015, MacDonald and Nilsson (2016) found that a 10 per cent increase in the minimum wage was associated with a 0.36 per cent increase in prices, a size increase smaller than previous studies. Similarly, Basker and Khan (2016), Allegretto and Reich (2018) and Cooper et al. (2020) find evidence of price increases in restaurants following minimum wage increases in the US.

Other studies find no effect on prices following minimum wage increases. Katz and Krueger (1992) investigated how the 1991 federal

² See Lemos (2008) for an early review of the literature.

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minimum wage increases in the US affected prices in the fast-food industry (i.e. three standard items: a medium soda, a small order of French fries, and a main course) in Texas, using data from a longitudinal survey of fast-food restaurants. They found no evidence that prices rose more in restaurants facing larger wage increases relative to restaurants not affected by the minimum wage increase. Otten et al. (2017) investigated whether Seattle's city-level minimum wage increases in 2015-2016 led to higher supermarket food prices, by employing data collected on 106 food items at affected chain supermarket stores in Seattle and same-chain unaffected stores in King County, one month before, one month after, and one year after the policy enactment. They found no evidence of supermarket price increase in Seattle and no evidence of price-through to consumers of the minimum wage increase.

Several studies examine minimum wage increases in Europe. Using CPI data for France, Fougère et al. (2010) investigated the price effect of a minimum wage increase on meals in traditional and fast-food restaurants. They found that a 1 per cent minimum wage increase had a positive and significant impact on prices in both traditional and fast-food restaurants: the estimated elasticity of prices with respect to the minimum wage was around 0.10 for both types of restaurants. Harasztosi and Lindner (2019) analyse the price effect of a large minimum wage increase in Hungary in 2000-2001 using firm-level price indices. They found significant evidence of pass-through: around 75 per cent of the labour cost increase was passed onto consumers. Moreover, they found that price responses were greater in non-tradable industries than in tradable industries, in line with economic theory that predicts firms producing non-tradable goods and services face smaller demand elasticities than traded goods and have greater capacity to pass price increases on to consumers. Link (2024) shows that firms in Germany raised their prices after the introduction of a national minimum wage in 2015. Kunaschk (2024), also for Germany, focuses specifically on the hairdressing sector, showing that hairdressing prices rose sharply after the minimum wage introduction.

Machin et al. (2003) estimate the effects of the introduction in 1999 of the UK national minimum wage on the residential care homes industry, a sector with a large number of low paid workers. They found no evidence that the minimum wage increase was passed on through higher bed prices in this sector. However, the authors noted that price regulations in this particular market limited the extent of price

adjustments. Draca et al. (2005) also investigated the price effect related to the 1999 introduction of the UK national minimum wage, by employing pre and post policy introduction consumer price data and producer price data across three low-pay industries: restaurants, takeaway and canteens. The authors did not find any significant effects of the introduction of the UK minimum wage on prices.

While the evidence on the impact of a minimum wage increase on prices is somewhat mixed, the weight of evidence does seem to point to a price effect. As part of a recent review of the minimum wage literature, Dube and Lindner (2024) find that a majority of papers in this area, most of which focus on restaurants, find evidence that minimum wage increases can lead to higher prices.

Chapter 2

Minimum wage policy in Ireland

A statutory minimum wage was first introduced in Ireland in 2000 under the National Minimum Wage Act (2000). The minimum wage was initially set at a rate of €5.58 (£4.40) per hour, and increased year-on-year until the onset of the Global Financial Crisis in 2008. The minimum wage remained at €8.65 per hour from 2008 until 2015.³ Following its establishment in 2015, the Low Pay Commission recommended that the minimum wage be increased to €9.15 per hour in 2016. Since then, the minimum wage has undergone annual increases, with each increase generally taking effect on 1 January each year.⁴

The annual minimum wage rates from 2015 to 2025 are shown in Table 2.1. The average yearly minimum wage increase from 2016 to 2022 was just under 3 per cent. In November 2022, the Irish Government committed to moving towards a living wage by 2026, with a target of 60 per cent of median income. Achieving this target required larger increases than previous years (Low Pay Commission, 2023). In 2023, the minimum wage increased by 7.6 per cent, and in 2024 by 12.4 per cent, the largest increase to date. There was a further 6.3 per cent increase in 2025. The living wage target has since been deferred to January 2029.

Table 2.1 also shows annual rates of inflation. Over the 2015-2025 period, inflation in Ireland followed a distinctly non-linear path, remaining below 1 per cent and even negative through the mid-to-late 2010s (falling as low as -0.3 per cent in 2020) before surging sharply in the post-pandemic period, peaking at 7.8 per cent in 2022 amid the broader European cost-of-living crisis. For most years, the minimum wage increase was higher than the inflation rate, with the exceptions being 2021 and 2022.

³ There was a temporary reduction in the minimum wage in January 2011, from €8.65 per hour to €7.65 per hour. This was reversed six months later (Redmond, 2020).

⁴ There was one exception in 2020, where the minimum wage increase took effect on 1 February 2020.

Table 2.1 Minimum wage rates in Ireland (2015 to 2025)

Year	Minimum Wage Rate (€)	Minimum wage increase (%)	Inflation (%)
2015	€8.65	-	
2016	€9.15	5.8	0.0
2017	€9.25	1.1	0.4
2018	€9.55	3.2	0.5
2019	€9.80	2.6	0.9
2020	€10.10	3.1	-0.3
2021	€10.20	1.0	2.4
2022	€10.50	2.9	7.8
2023	€11.30	7.6	6.3
2024	€12.70	12.4	2.1
2025	€13.50	6.3	2.2

Source: Low Pay Commission and Central Statistics Office, authors' calculations.

Chapter 3

Data and descriptive statistics

We use disaggregated Consumer Price Index (CPI) data for Ireland, consisting of approximately 600 price categories. These data are compiled and made available by the Central Statistics Office (CSO) in Ireland. The dataset spans the period from January 2012 to September 2025. Therefore, it includes four years during which the minimum wage did not change (from January 2012 to December 2015), as well as ten years when minimum wage increases occurred.

The data are indexed to January 2012. That is, all price categories start at a base value of 100 in January 2012. Prices are collected and updated on a monthly basis, giving us 12 data points for each category in each year.⁵ The CSO also provides weights for each price category. The weight is the proportion of total consumer expenditure spent on a price category. Therefore, the larger the weight, the greater the impact that item will have on the overall CPI inflation rate.

We use the incidence of minimum wage employment within occupations and sectors to identify price categories that are likely to be impacted by minimum wage increases. For example, the CPI data contain five price categories related to hairdressing: gents dry cut; children's haircut; ladies wash and blow dry; ladies hair colour and highlights; ladies shampoo cut and dry. These price categories map to the 'Hairdressers' occupation listed in the Irish Labour Force Survey (LFS) data (ISCO 5141). We calculate the percentage of hairdressers that are on minimum wage by using a question in the LFS that directly asks employees whether they are earning the minimum wage. Approximately 30 per cent of hairdressers in Ireland are minimum wage employees.⁶ Hairdressing, therefore, is an occupation that employs a relatively high percentage of employees on minimum wage and may be more susceptible to changes to labour costs following a minimum wage increase.

⁵ To collect price data, the CSO employs a team of 30 price collectors that are spread through the country. These prices collected in store are combined with prices collected centrally in the CSO offices and transaction data provided by grocery retailers.

⁶ LFS results are based on analysis of strictly controlled research microdata files (RMFs) provided by the CSO. The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

Table 3.1 lists other categories for which we can map the CPI price data to LFS occupations or sectors, and which employ a relatively high percentage of minimum wage employees. These can be thought of as our ‘treated groups’ – that is, occupations or sectors whose wage bill is likely to be impacted by a minimum wage increase due to the high incidence of minimum wage employment within that occupation.⁷ Note that the incidence of minimum wage employment in all of our treated categories is above 30 per cent.⁸

The items listed in Table 3.1 do not comprise an exhaustive list of price categories that could be influenced by minimum wage changes. Some individual price categories cannot be included. For example, the CSO carries out a CPI Rebase every five years. As part of this, some price categories may be dropped, or new ones introduced. Some price categories, such as ‘pizza – eat in’ and ‘pasta and noodles – eat in’ did not enter the CPI until later in the time period (around 2017) and are, therefore, not included in the ‘Restaurants’ category in Table 3.1. There were also impacts on other categories relating to CPI Rebases in 2011 and 2016, including ‘light meal in a fast-food restaurant’ and ‘meal in an ethnic restaurant’, and as such, these items are not included in the ‘Restaurants’ category. However, despite some issues with individual price items, the categories included in the ‘Restaurants’ category captures a broad array of relevant price items to allow for a reliable investigation of price impacts within this group.

In addition to having a high incidence of minimum wage employment, most of the occupations and sectors shown in Table 3.1 tend to produce a non-tradable good or service which is sold locally. For example, restaurants, coffee shops and hairdressing salons employ waiters, baristas, food preparation assistants and hairdressers to produce goods and services which are then typically sold locally. These types of labour-intensive, non-tradable goods and services often face smaller demand elasticities than traded goods and are, therefore, most likely to display price pass-through to consumers following a

⁷ The categories used in our study are consistent with the existing literature. For example, Aaronson (2001) and MacDonald and Aaronson (2006) focus on the Food Away From Home component of the CPI in the US, and Kunaschk (2024) focuses on hairdressing as a category likely to be affected by minimum wage increases.

⁸ The incidence of minimum wage employment in Ireland was in the range of approximately 6 to 7 per cent from 2017 to 2024, before increasing to 8.5 per cent in 2025 (see Redmond et al., 2026).

minimum wage increase (see e.g. Clemens, 2021; Harasztosi and Lindner, 2019; Ashenfelter and Jurajda, 2022).

Table 3.1 Mapping price categories to minimum wage intensive occupations

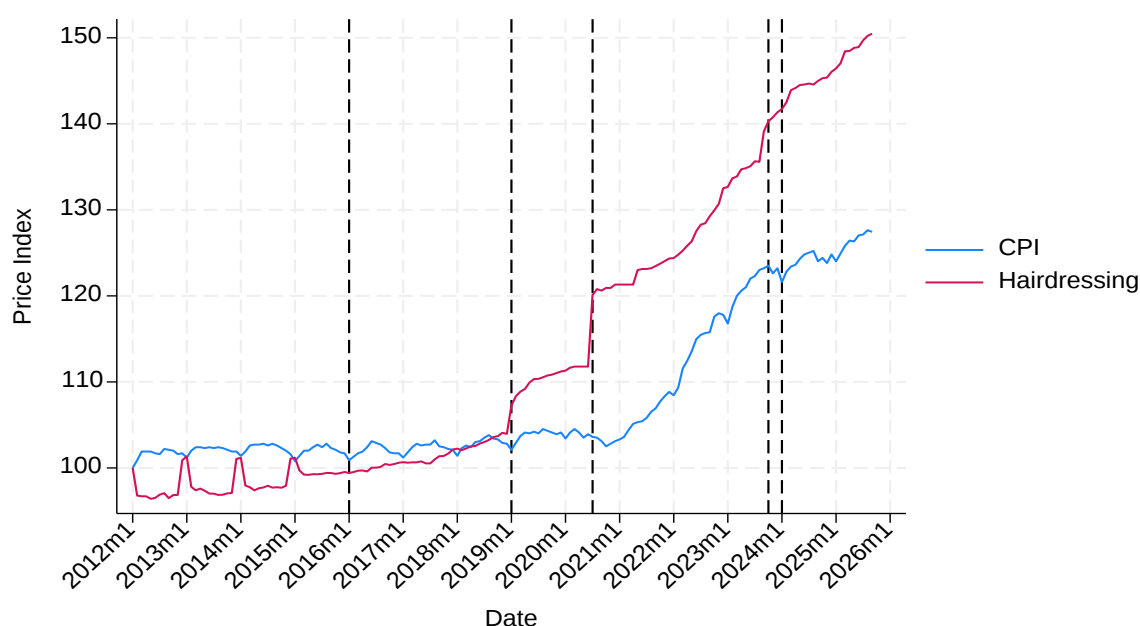
Group	CPI Price Categories	Related LFS Occupations or Sectors
Hairdressing	Gents dry haircut; children's haircut; ladies wash and blow-dry; ladies hair colour and highlights; ladies shampoo cut and dry	ISCO 5141 (Hairdressers) • 33% of employees on minimum wage
Takeaway coffee and sandwiches	Sandwich/wrap/roll/bagel – takeaway; tea/coffee – takeaway	ISCO 9410 (Food Preparation Assistant) • 47% of employees on minimum wage
Takeaway meal	Takeaway meal	ISCO 9410 (Food Preparation Assistant) • 47% of employees on minimum wage
Restaurants	Lunch – main course only; dinner; burger and bun eat in; soup eat in; tea or coffee eat in	NACE I (Accommodation and Food) • 36% of employees on minimum wage
Hotels, guesthouses and B&Bs	Hotels; guesthouses and B&Bs	NACE I (Accommodation and Food) • 36% of employees on minimum wage
Alcohol in pubs	Whiskey, brandy, vodka, gin – glass single measure; wine – standard glass or 187 ml bottle; cider draught 1 pint; cider bar can/pint bottle; lager draught bar 1 pint, lager bottled bar; stout draught bar 1 pint; ale draught bar 1 pint	ISCO 5132 (Bartenders) • 41% of employees on minimum wage ISCO 5131 (Waiters) • 62% of employees on minimum wage

Sources: CPI data from the Central Statistics Office; Irish Labour Force Survey; authors' calculations.

In Figures 3.1 to 3.6, we graph the price indices for each of the individual categories shown in Table 3.1. In each graph, we also show the overall CPI for the purposes of comparison. Starting with Hairdressing (Figure 3.1), there are some notable patterns. From January 2012 to December 2015, during which time the minimum wage was unchanged, hairdressing prices were displaying a slight upward trend relative to the overall CPI. This trend continued in the years following the January 2016 minimum wage increase (denoted by a vertical line at 2016m1) but does not appear to have been altered by the 2016 minimum wage change. The first notable price change in the series coincides with the January 2019 VAT change (indicated with a vertical line), which reversed a temporary VAT rate reduction for hospitality and tourism (which includes hairdressing services),

resulting in the VAT rate increasing from 9 per cent to 13.5 per cent.⁹ Due to challenges faced by tourism and hospitality as a result of COVID-19, the VAT rate was again reduced to 9 per cent in November 2020, before being reversed in September 2023. This shows up as another price jump in September 2023. The most significant increase in prices for hairdressing coincides with the re-opening of the economy (including hairdressing services) in June and July 2020, following the first COVID-19 lockdown.¹⁰ Finally, Figure 3.1 includes a vertical line to indicate the largest minimum wage increase to date, which occurred in January 2024. Relative to the general CPI, there appears to be an increase in prices for hairdressing services at this point, albeit at a substantially smaller scale when compared to the VAT and COVID-related changes.

Figure 3.1 Hairdressing price index compared to overall CPI



Sources: CPI data from the Central Statistics Office; authors' calculations.

Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred. The vertical lines at January 2019 and September 2023 indicate the VAT changes. The line at July 2020 indicates the re-opening of the economy after the first COVID-19 lockdown, and the line at January 2024 indicates the largest minimum wage increase to date in Ireland.

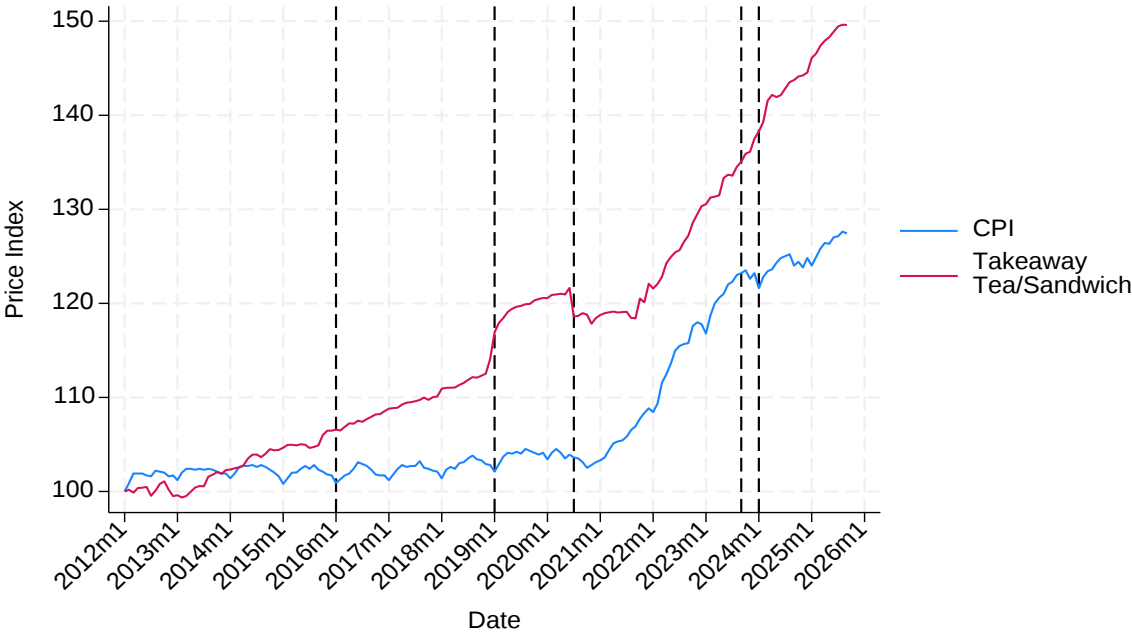
⁹ The temporary VAT rate reduction (from 13.5 per cent to 9 per cent) for hospitality and tourism was introduced in July 2011, in an effort to stimulate demand following the financial crisis (Carroll, 2025).

¹⁰ For a timeline of COVID-19 events, including lockdowns and re-openings, see <https://www.cso.ie/en/releasesandpublications/ep/p-covid19/covid-19informationhub/covid-19inirelandtimeline2020-2023/>.

Note that hairdressing price increases were justified at the time by the need for hairdressers to adopt COVID prevention measures. For more information, see: <https://www.irishtimes.com/life-and-style/Fashion/beauty/hairdressers-plan-to-impose-small-covid-charges-on-clients-1.4288562>.

Figure 3.2 shows the graph depicting the price index for takeaway tea, coffee and sandwiches. Similar to hairdressing, prices for this category were trending upwards in the years before 2016, during which time the minimum wage was unchanged. The trend continued post-2016 and does not appear to have been altered by the 2016 minimum wage increase. As with hairdressing, the first significant deviation from this change coincided with the 2019 VAT increase. At this time, there was a significant spike in the price of takeaway tea, coffee and sandwiches. Unlike hairdressing, it appears that the COVID-19 re-opening of the economy in mid-2020 coincided with a price drop for this category. The graph also shows that prices for takeaway tea, coffee and sandwiches appeared to increase (relative to the general CPI) following the 2023 VAT increase and the 2024 minimum wage increase.

Figure 3.2 Takeaway tea, coffee and sandwiches price index compared to overall CPI

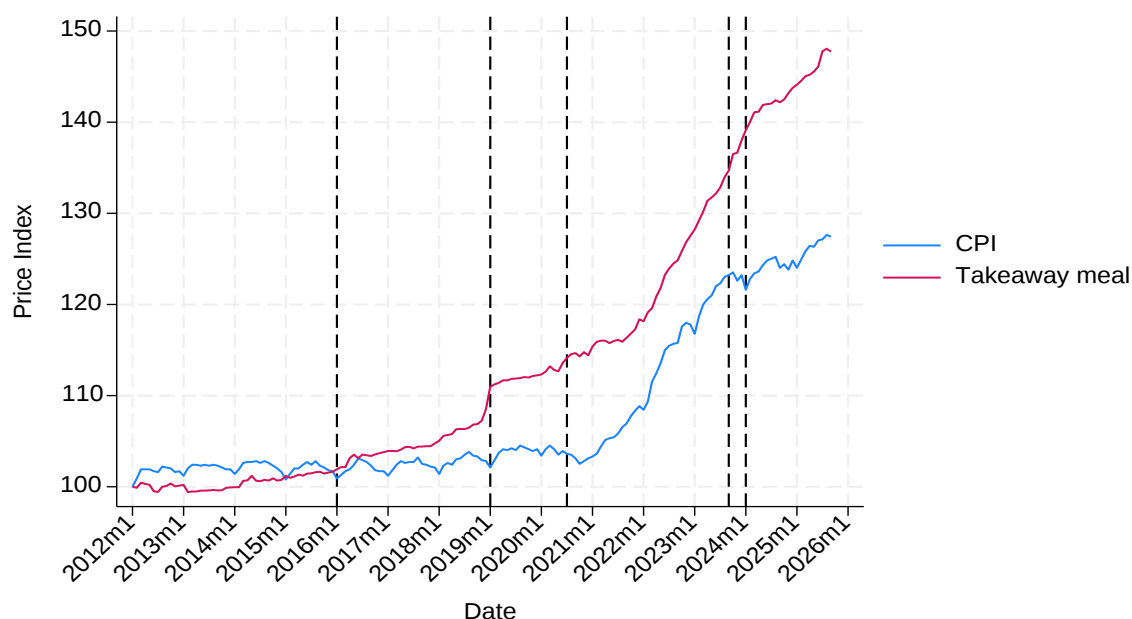


Sources: CPI data from the Central Statistics Office; authors' calculations.
Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred. The vertical lines at January 2019 and September 2023 indicate the VAT changes. The line at July 2020 indicates the re-opening of the economy after the first COVID-19 lockdown, and the line at January 2024 indicates the largest minimum wage increase to date in Ireland.

Figure 3.3 shows the price index for the 'Takeaway meal' price category. Again, a notable price increase occurs at the 2019 VAT change. Similar to Figures 3.1 and 3.2, there appears to be a widening

in the price indices that coincides with the 2023 VAT change and following the 2024 minimum wage change, with the prices of takeaway meals appearing to increase at a faster rate than the general CPI. We also observe a similar pattern for the ‘Restaurants’ category (Figure 3.4).

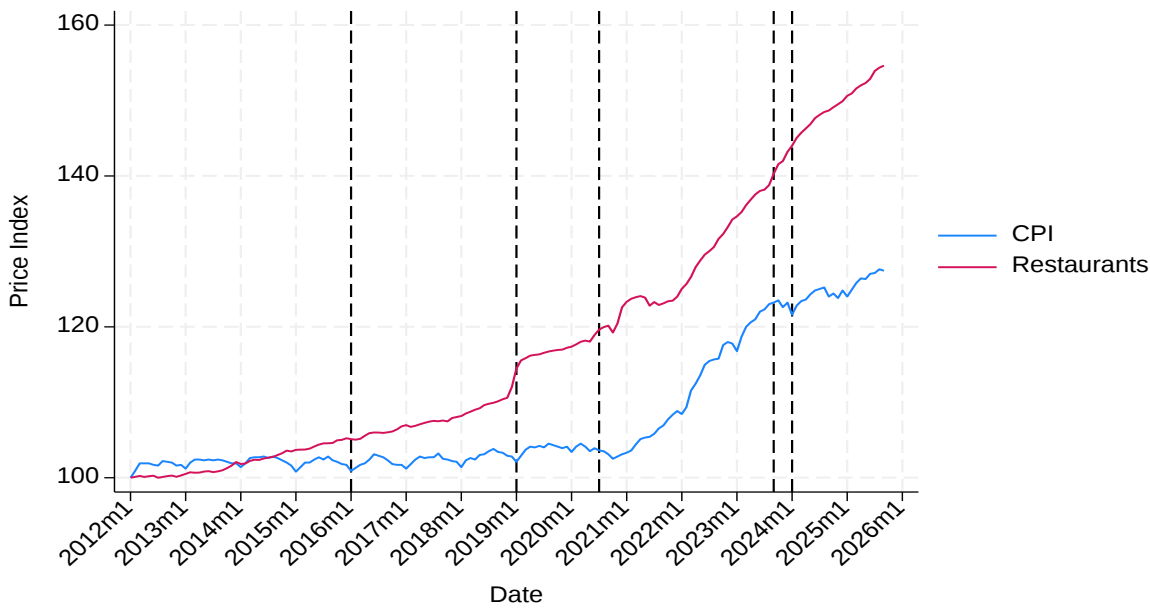
Figure 3.3 Takeaway meal price index compared to overall CPI



Sources: CPI data from the Central Statistics Office; authors' calculations.

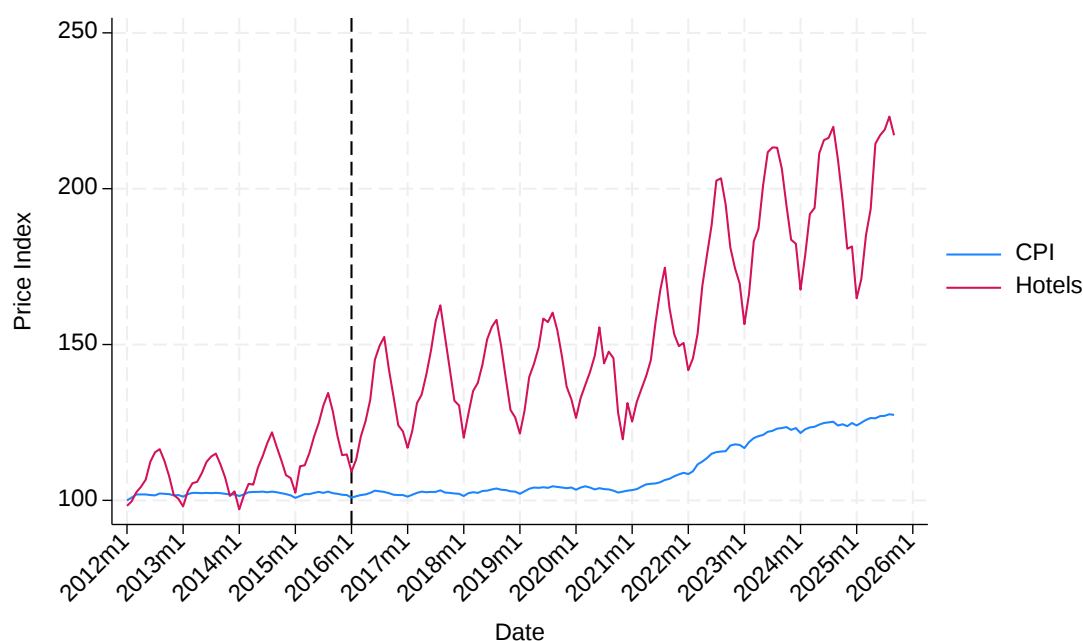
Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred. The vertical lines at January 2019 and September 2023 indicate the VAT changes. The line at July 2020 indicates the re-opening of the economy after the first COVID-19 lockdown, and the line at January 2024 indicates the largest minimum wage increase to date in Ireland.

Figure 3.4 Restaurant price index compared to overall CPI



Sources: CPI data from the Central Statistics Office; authors' calculations.
Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred. The vertical lines at January 2019 and September 2023 indicate the VAT changes. The line at July 2020 indicates the re-opening of the economy after the first COVID-19 lockdown, and the line at January 2024 indicates the largest minimum wage increase to date in Ireland.

Hotel prices are shown in Figure 3.5. Unlike other price series, hotels are characterised by strong seasonal variation, with price spikes in the summer and dips in the winter months. While there appears to be greater variation in these price swings towards the later years, unlike the other categories shown above there is no clear indication from the graphs that VAT rate changes or the minimum wage change in 2024 altered the price series in a significant way.

Figure 3.5 Hotels price index compared to overall CPI

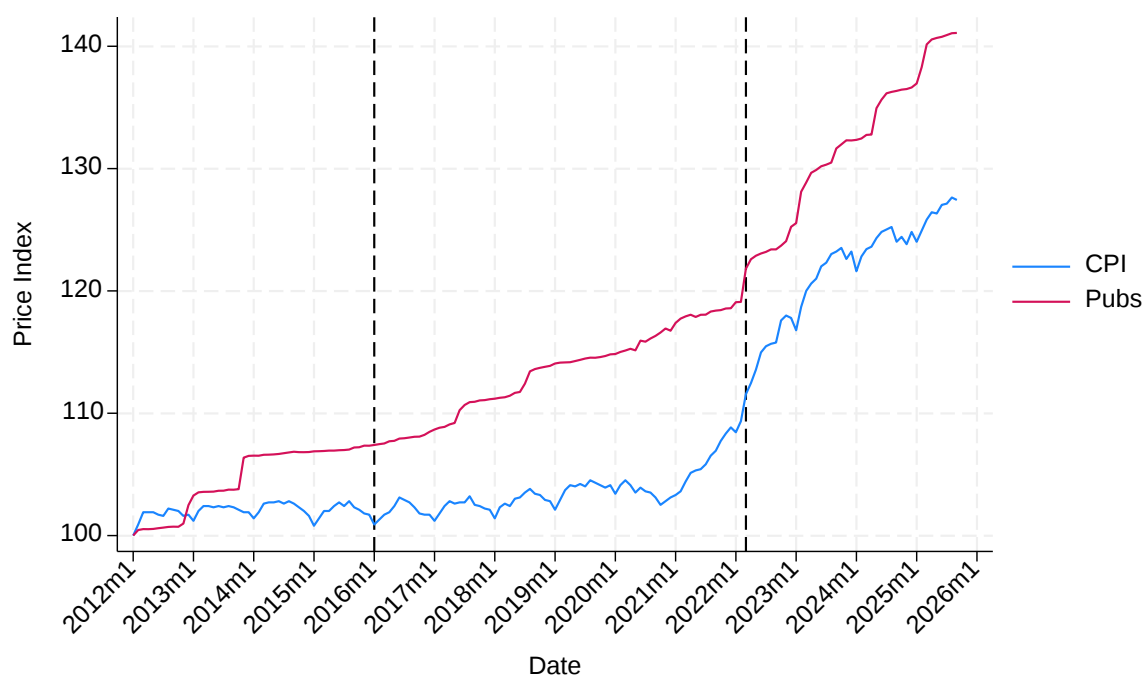
Sources: CPI data from the Central Statistics Office; authors' calculation.

Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred.

Figure 3.6 shows the price series for alcohol served in pubs and bars. This price category appears to have its own specific triggers for price changes. For example, there is a significant price spike in April 2024, which coincides with a decision by Diageo to raise the price of its beer products.¹¹ This is essentially a cost adjustment to wholesale alcohol prices, which was largely criticised by the retailers (publicans) themselves, and more broadly, the Vintners Federation of Ireland. The reasons cited by Diageo related to an increase in energy and input costs (for example, grains). There were also price increases in mid-2017 and mid-2018, early 2022 and 2023. These increases occurred at a time when other policy changes and/or further Diageo price increases, were coming into effect around alcohol – for example, the Public Health Alcohol Policy Act, 2018.¹²

¹¹ For more information, see: <https://www.irishexaminer.com/news/arid-41361343.html>.

¹² See <https://www.irishstatutebook.ie/eli/2018/act/24/enacted/en/html>.

Figure 3.6 Alcohol in pubs price index compared to overall CPI

Sources: CPI data from the Central Statistics Office; authors' calculations.

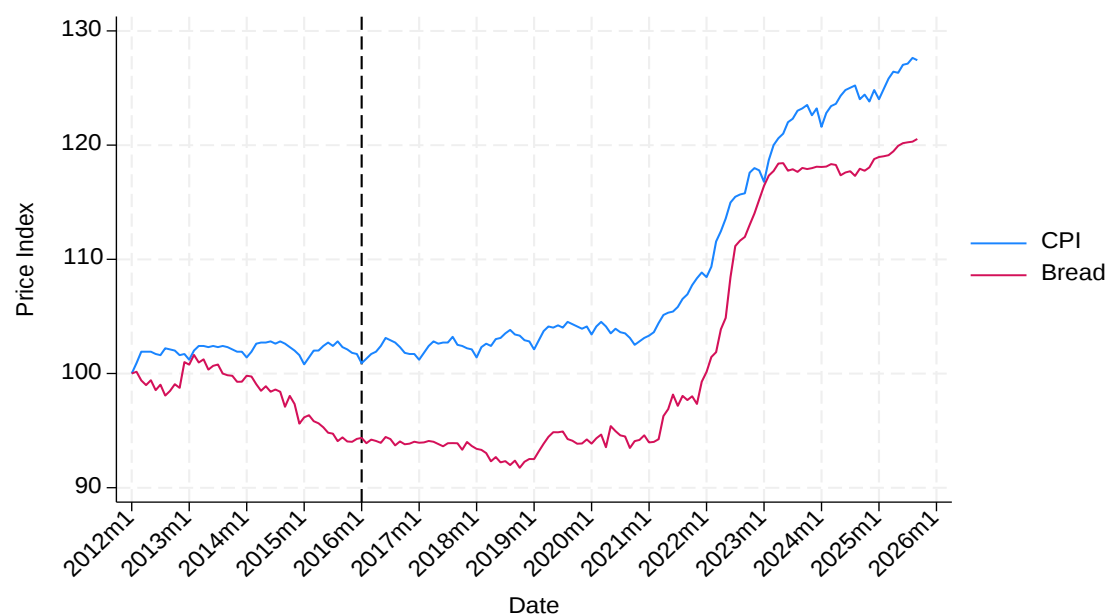
Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred.

The retail sector, in general, also employs a relatively large share of minimum wage employees. However, many of these involve tradable categories of goods that are predominantly affected by global input costs and competitive pricing, which minimises the potential pass-through of minimum wage increases. Furthermore, the rise of online retail in recent years may have further restricted the capacity for retailers to pass on price increases in response to changes to the minimum wage (Clemens, 2021). Nonetheless, we condense CPI items into broader categories and descriptively examine price changes within these categories over time. In Figures 3.7 to 3.11, we show the price indices for the following categories of goods: bread; dry food groceries; dairy; meat and fish; clothing.

For food and grocery prices (Figures 3.7 to 3.10), we see a clear downward trend in prices from approximately 2014 to 2021, followed by a significant increase in 2022. The downward trend coincides with a period in which Ireland experienced one of the lowest food price inflation rates in the EU, coinciding with increasing retail competition. The sharp increase in 2022 coincides with the Russian invasion of Ukraine, and the associated supply chain issues and energy price

increases. However, minimum wage changes do not appear to play a role in the price dynamics of these groups. The clothing (Figure 3.11) price series has displayed a downward trend from 2012 to 2025.

Figure 3.7 Bread price index compared to overall CPI



Sources: CPI data from the Central Statistics Office; authors' analysis.

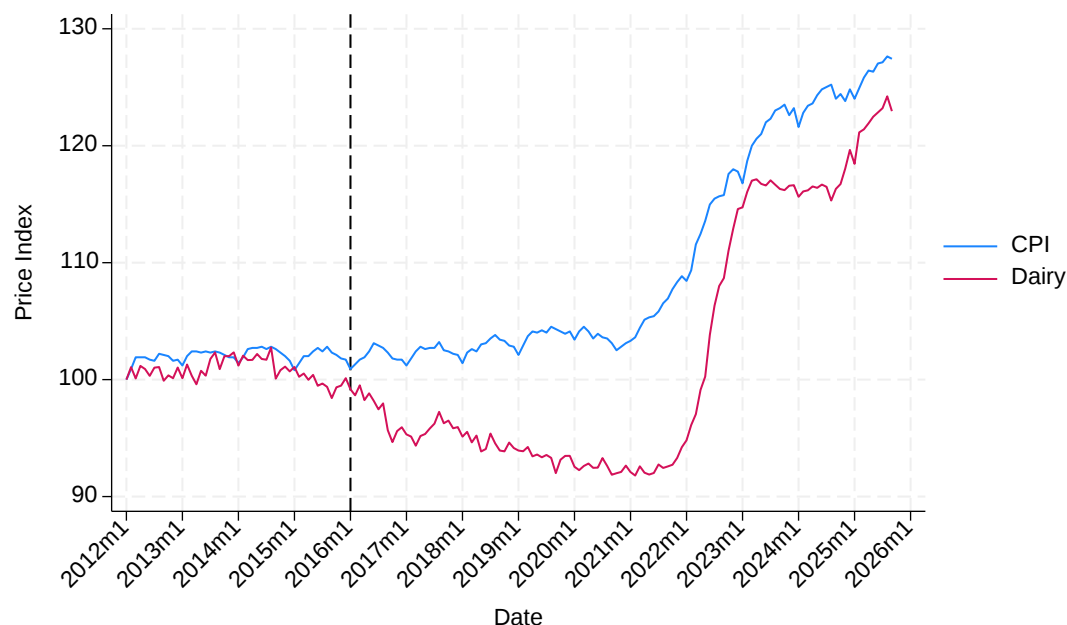
Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred.

Figure 3.8 Dry food groceries price index compared to overall CPI



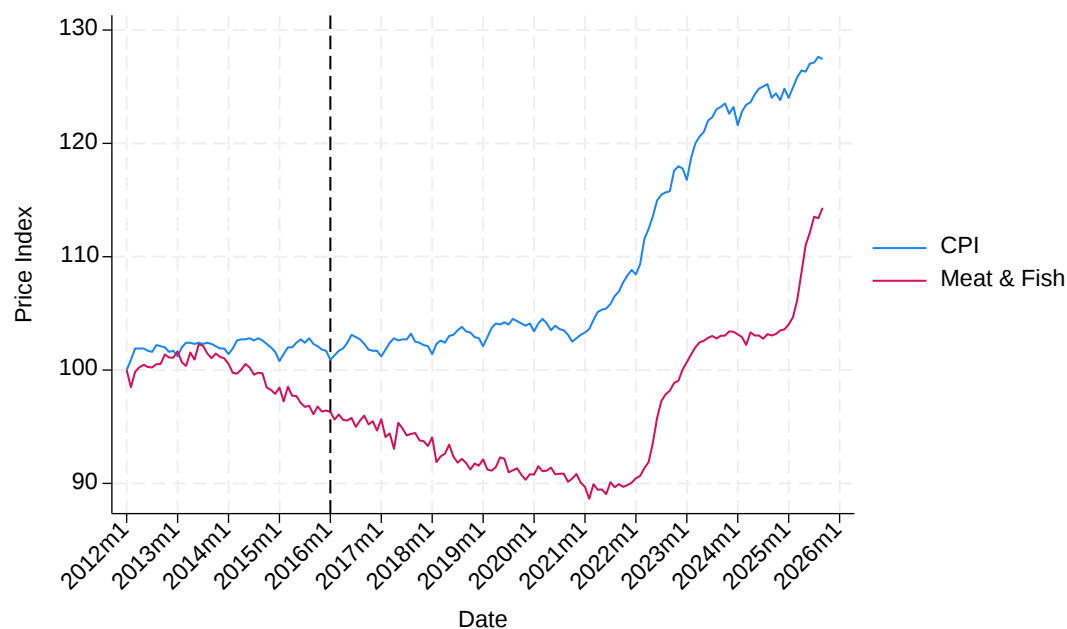
Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred.

Figure 3.9 Dairy price index compared to overall CPI

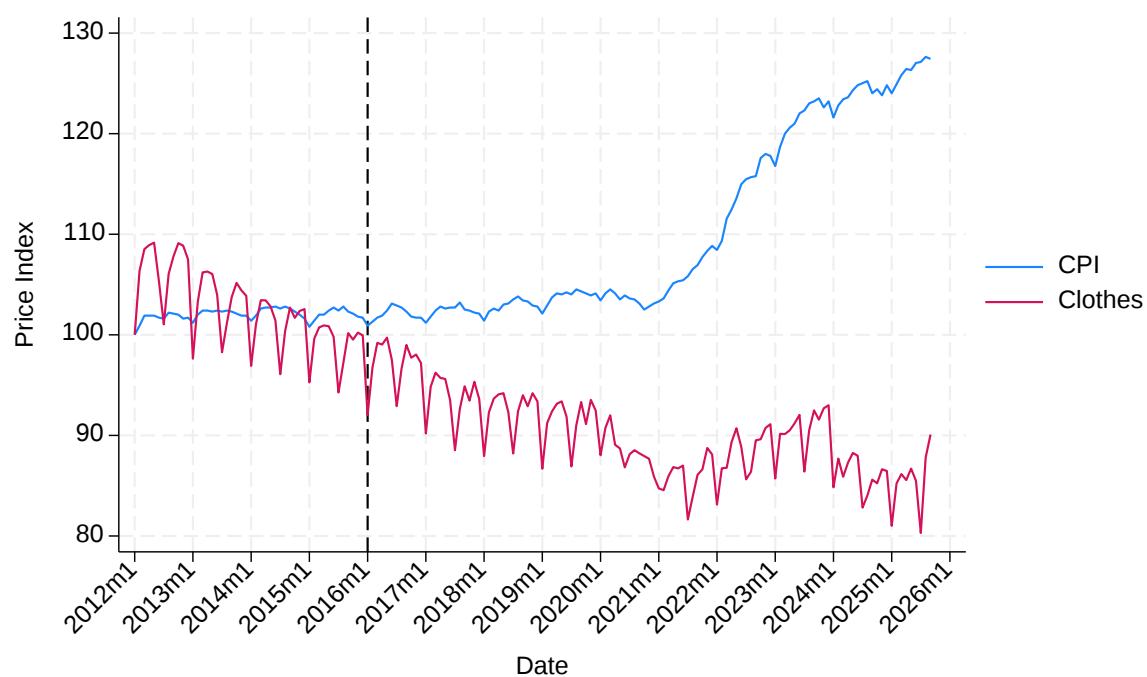
Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred.

Figure 3.10 Meat and fish price index compared to overall CPI

Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred.

Figure 3.11 Clothing price index compared to overall CPI

Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: The vertical dashed line at January 2016 indicates the first minimum wage increase in the sample; the area before this line is the pre-treatment time period when no minimum wage changes occurred.

Chapter 4

Methodology

We begin by defining our outcome variable, $Price_Diff_{i,t}$, which is the percentage point difference between the monthly price change for price category i and the monthly price change for the unweighted CPI in month t . Denoting $P_{i,t}$ as the monthly price index for category i in month t , and P_t^{CPI} as the unweighted CPI in month t , we have:

$$Price_Diff_{i,t} = \pi_{i,t} - \pi_t^{CPI} \quad (1)$$

$$\text{with } \pi_{i,t} = \left(\frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \right) 100 \quad (2)$$

$$\text{and } \pi_t^{CPI} = \left(\frac{P_t^{CPI} - P_{t-1}^{CPI}}{P_{t-1}^{CPI}} \right) 100 \quad (3)$$

Conditioning our analysis on the treated (minimum wage exposed) price categories outlined in Table 3.1, we then estimate the following regression equation:

$$Price_Diff_{i,t} = \alpha + \sum_{k=1}^8 \beta_k MW_t^k + \sum_{j=1}^2 \delta_j VAT_t^j + \gamma COVID_t + \theta Jan_Placebo_t + \rho Sept_Placebo_t + \sigma July_Placebo_t + \varepsilon_{i,t} \quad (4)$$

The variables MW consist of dummy variables capturing the following eight yearly minimum wage increases: 2016, 2017, 2018, 2021, 2022, 2023, 2024, 2025.¹³ The coefficients, β_k , therefore capture whether the difference in the price change between the minimum wage exposed price categories and the unweighted CPI price categories was different following the January minimum wage increase in year k . Note that we define the unweighted CPI as all CPI categories, apart from those already contained in the minimum wage treatment group.¹⁴

We also include a dummy variable to estimate the January pre-treatment (placebo) price dynamics. Specifically, the variable $Jan_Placebo_t$ takes a value of 1 for the months of January 2013, January 2014 and January 2015, and 0 otherwise.¹⁵ The coefficient θ

¹³ 2019 is excluded as it coincides with a VAT increase, and 2020 is excluded due to difficulties affecting the reliability of estimates due to the COVID-19 pandemic and the fact that, unlike other increases, this increase occurred on 1 February, as opposed to 1 January.

¹⁴ It would not be appropriate to have the treated categories also influencing price changes for the control group.

¹⁵ As the data series begins in January 2012, we have no price change associated with January 2012. Therefore, the pre-treatment placebo includes January 2013, January 2014 and January 2015.

estimates whether there was any pre-existing difference between the price change of minimum wage exposed (treated) categories and the unweighted CPI categories in the three Januarys that preceded the 2016 minimum wage increase.

To estimate of the impact of each of the eight minimum wage increases, we take the relevant β_k coefficient and subtract from it any pre-existing placebo price dynamics θ .¹⁶ Take the 2016 minimum wage increase as an example. The estimated impact ($\beta_{2016} - \theta$) tells us whether prices for the minimum wage exposed price categories increased more than the unweighted CPI price categories following the 2016 minimum wage increase, and whether this increase was different from any pre-existing dynamics that may have been occurring at comparable time points when the minimum wage did not increase. An algebraic decomposition of the estimated coefficients is useful to provide further insights in a more formal way. Continuing with the example of the January 2016 minimum wage increase, it is straightforward to show that:

$$\beta_{2016} = E(\text{Price_Diff}_{i,t} | \text{January 2016}) - E(\text{Price_Diff}_{i,t} | \text{omitted months}) \quad (5)$$

which expands to:

$$\beta_{2016} = E \left[\left(\frac{P_{i,Jan16} - P_{i,Dec15}}{P_{i,Dec15}} \right) - \left(\frac{P_{Jan16}^{CPI} - P_{Dec15}^{CPI}}{P_{Dec15}^{CPI}} \right) \right] - \left[\left(\frac{P_{i,t}^{omitted} - P_{i,t-1}^{omitted}}{P_{i,t-1}^{omitted}} \right) - \left(\frac{P_t^{CPI,omitted} - P_{t-1}^{CPI,omitted}}{P_{t-1}^{CPI,omitted}} \right) \right] \quad (6)$$

Similarly, the estimated placebo effect expands to:

$$\theta = E \left[\left(\frac{P_{i,Placebo_Jan} - P_{i,Placebo_Dec}}{P_{i,Placebo_Dec}} \right) - \left(\frac{P_{Placebo_Jan}^{CPI} - P_{Placebo_Dec}^{CPI}}{P_{Placebo_Dec}^{CPI}} \right) \right] - \left[\left(\frac{P_{i,t}^{omitted} - P_{i,t-1}^{omitted}}{P_{i,t-1}^{omitted}} \right) - \left(\frac{P_t^{CPI,omitted} - P_{t-1}^{CPI,omitted}}{P_{t-1}^{CPI,omitted}} \right) \right] \quad (7)$$

Note that (6) and (7) are difference-in-differences estimates – for example, in Equation (6), the difference in the price changes between the treated categories and CPI categories during the treatment period is compared to the difference in price changes between the treated and CPI categories for the omitted (non-MW and other event) months.

¹⁶ We use Stata's `lincom` command to test whether the difference in the coefficients (i.e. $\beta_k - \theta$) are statistically significantly different.

Likewise, in Equation (7), the difference in the price changes between the treated categories and CPI categories during the placebo January periods is compared to the difference in price changes between the treated and CPI categories for the omitted (non-MW and other event) months. As our estimated impact of the minimum wage increase on prices subtracts (7) from (6), our estimator is akin to a triple differences estimator.¹⁷ Therefore, we are not imposing an assumption of parallel trends, as we allow for the fact that the treatment and control price series may have been changing at different rates in the January during the years in which the minimum wage did change, even in the absence of a minimum wage change. The assumption is that the placebo estimates, which focus on the same monthly dynamics in years when no minimum wage change occurred, provide a valid counterfactual for the price dynamics that would have occurred in the absence of minimum wage increases during years in which the minimum wage did change.

Note that, in addition to minimum wage dummies, Equation (4) also includes dummy variables for the January 2019 and September 2023 VAT changes, $\sum_{j=1}^2 VAT_t^j$. The coefficients, δ_j , therefore capture whether the difference in the price change between the minimum wage exposed categories and the unweighted CPI categories was different following the month j VAT change. We also include a September placebo dummy (*Sept_Placebo*), which takes the value of 1 for all Septembers apart from the September 2023 VAT change. By comparing the 2023 VAT dummy to the September placebo estimates, we can assess whether the price effects following the 2023 September VAT change were different to the usual September price dynamics that occur even when VAT stays constant. Similarly, the *COVID* variable is a dummy variable indicating the month of the first COVID re-opening of the economy in July 2020 and the γ coefficient; this therefore indicates whether the difference in the price change between minimum wage exposed and unweighted CPI categories was different following this event. Again, we include a July placebo dummy (*July_Placebo*), which takes the value of 1 for all other July periods. By comparing the COVID estimate to the July placebo, we can assess whether the COVID re-opening effect was statistically significantly different to the usual

¹⁷ A triple differences estimator can be computed as the difference between two difference-in-differences estimators (Olden and Moen, 2022).

July price dynamics that occur in the absence of a COVID re-opening effect.

The 2019 VAT change coincided with the January 2019 minimum wage change and this presents a challenge for disentangling these two effects. Fortunately, the January 2019 minimum wage increase was relatively small, and comes after two larger increases (2016 and 2018). Therefore, if we observe no effect for the 2016 and 2018 minimum wage increases, then any effect observed in January 2019 is likely due to the VAT change. Furthermore, there is another VAT increase in 2023 that does not occur at the same time as a minimum wage change. Taken together, if we observe an effect for the 2023 VAT increase, no effect for the 2016-2018 minimum wage changes, and an effect for the January 2019 VAT increase, then it is reasonable to attribute the 2019 impact predominately to the VAT change. Nonetheless, it is possible that any effect observed in 2019 is due to a combination of two simultaneous policy changes – the VAT increase and a modest minimum wage increase.

We implement an additional estimation strategy that takes account of the different magnitudes of minimum wage increases. That is, we allow our treatment variable to be continuous, reflecting the nominal percentage increases in the minimum wage, as shown in Table 2.1. For example, the continuous minimum wage treatment variable, denoted $C_MW_t^k$, takes the value of 5.8 in January 2016, 1.1 in January 2017, 3.2 in January 2018 etc.¹⁸ For the pre-treatment January time periods (January 2013, January 2014 and January 2015), C_MW_t takes the value of 0. We then estimate the following regression for the minimum wage exposed categories:

$$Price_Diff_{i,t} = \alpha + \beta C_MW_t + \varepsilon_{i,t} \quad (8)$$

Note that only the months of January are included above to ensure that the basis for comparison when it comes to estimating β uses a consistent time period.¹⁹ The estimate of β tells us, for each additional 1 percentage point increase in the minimum wage, what is the percentage point difference in the price change between the treated

¹⁸ As before, we estimate all minimum wage increases from 2016 to 2025 apart from the 2019 and 2020 minimum wage increases, due to the VAT and COVID issues discussed earlier.

¹⁹ Including all months and allowing C_MW_t equal to zero for all omitted months (instead of just the pre-treatment January months) would lead to an estimate of β that compared potential January minimum wage effects to all other months, rather than the same (January) pre-treatment months.

and CPI categories. This provides us with an estimated elasticity of prices with respect to the minimum wage change.

When implementing the two estimation strategies shown above (i.e. Equations (4) and (8)), we separate our treated categories into two groups. Informed by the descriptive evidence in Figures 3.1 to 3.6, our first group consists of price categories for which we see a clear price jump associated with the VAT changes and/or COVID, and for which there is suggestive evidence of a widening of the price series towards the latter end of the time period, coinciding with larger minimum wage increases. This treatment group consists of hairdressing, takeaway coffee and sandwiches, takeaway meals, and restaurants. The second treatment group then consists of hotels, guesthouses B&Bs and alcohol in pubs, for which we do not observe the same descriptive patterns as for the other price categories.

Appendix Figures A1 and A2 plot the outcome variable (*Price_Diff*) for these two categories. Consistent with the descriptive evidence presented in Chapter 3, the group consisting of hairdressing, food and coffee (Figure A1) shows price effects at the January 2019 and September 2023 VAT changes, along with a spike at the July 2020 COVID-19 re-opening of the economy. Regarding minimum wage changes, there are no obvious effects. However, there is a difference with regard to the January 2024 minimum wage increase that is not obvious from the graph. The value associated with the *Price_Diff* variable for January 2024 is higher than all other January values (apart from the January 2019 VAT event). For example, the price difference between the treated and control groups that occurred in January 2024 is 1.5 times higher than the other post-COVID, January price differences (from 2022, 2023 and 2025). Furthermore, the graph suggests the presence of lagged effects, which is often a feature of this type of analysis, where minimum wage impacts on prices can take three months to fully materialise. This is something we explore in more detail in Chapter 5.²⁰

²⁰ Consistent with the descriptive evidence, apart from seasonal variation, there are no obvious patterns for Treatment Group 2 (Figure A2).

Chapter 5

Results

5.1 Treatment Group 1: Hairdressing, takeaway coffee, takeaway meals and restaurants

The results from estimating Equation (4) are shown in Table 5.1. All of the minimum wage coefficients are positive and statistically significant, with the largest effect occurring in 2024, which was the largest minimum wage increase to date (at 12.4 per cent). However, as described above, the minimum wage coefficients in isolation cannot be taken as causal evidence of a minimum wage effect on prices. We must subtract from these coefficients any pre-treatment January price effects that were occurring in the absence of minimum wage changes (denoted by the coefficient on the *Jan_Placebo* dummy variable). For example, the MW2016 coefficient suggests that the treated price categories increased by 0.68 percentage points more than the control categories following the January 2016 minimum wage increase. However, the *Jan_Placebo* coefficient shows that treated price categories were increasing by approximately 0.6 percentage points more during the January time periods when a minimum wage change did not occur. Figure 5.1 takes this into account, and plots the differences between the minimum wage coefficients and the January placebo estimate for each year. The only minimum wage increase that shows a statistically significant price effect is the 2024 increase, with treated price categories increasing by 0.6 percentage points more than the control group in January 2024.

Table 5.1 also shows that the VAT changes in 2019 and 2023 are associated with a 3.2 percentage point and 1.4 percentage point, respectively, greater increase for treated price categories compared to the control group. The 2023 VAT change occurred in September. Therefore, we subtract the September placebo estimate (*Sept_Placebo* in Table 5.1) from the 2023 VAT coefficient. This indicates that the 2023 VAT change led to the treated price categories increasing by 1.3 percentage points more than the control categories.²¹ The 2019 VAT change occurred in January, so we subtract the January placebo coefficient (*PlaceboM1*) from this estimate. This indicates that the 2019 VAT change led to the treated price categories increasing by

²¹ The triple differences estimate for the 2023 VAT change is 1.30 (p value 0.000).

2.6 percentage points more than the control categories.²² As this coincided with a relatively small minimum wage increase, we cannot fully disentangle the two effects, and it is possible that they both contribute to this impact. However, given the 2016 to 2018 minimum wage effects showed no impact, even for larger minimum wage increases, it is reasonable to assume that the majority of this effect is due to the VAT change. Our findings for VAT changes are consistent with previous work by Carroll (2025), who found that the 2019 and 2023 VAT increases in Ireland were associated with significant price pass-through.

From Table 5.1, we also see that the July 2020 COVID re-opening is associated with a 2.5 percentage point greater increase in prices among the treated categories compared to the control group. Subtracting the July placebo estimate (*July_Placebo* in Table 5.1) indicates that the July 2020 COVID re-opening led to treated prices increasing by 2.2 percentage points more than the control group prices. Note that our results show that the immediate price effects associated with the VAT and COVID events are in the order of two to three times the magnitude of the impact of the 2024 minimum wage increase.

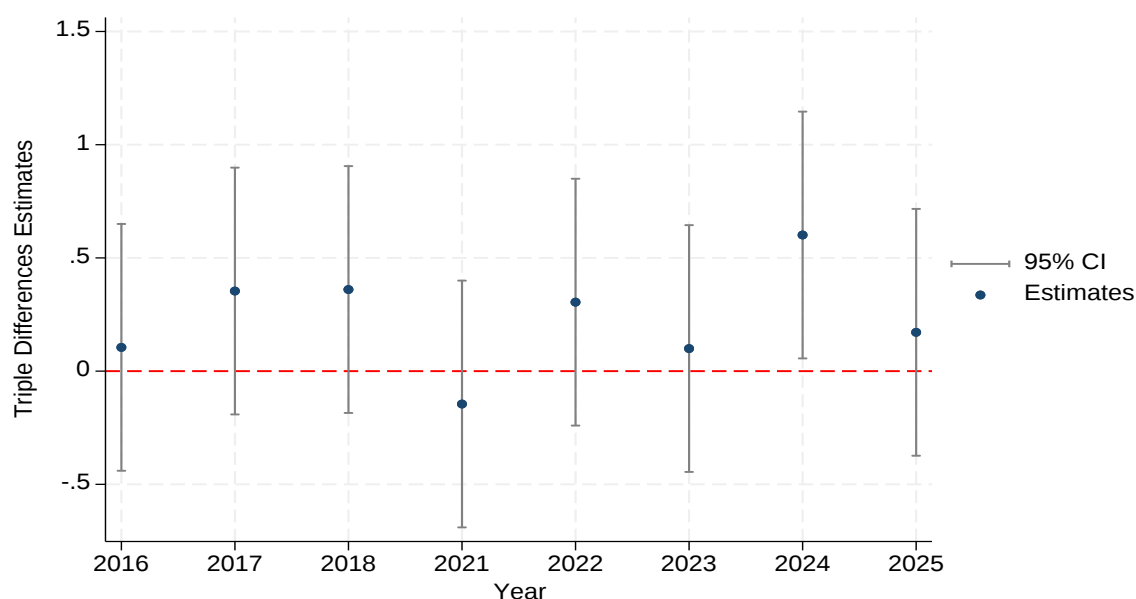
²² The triple differences estimate for the 2019 VAT change is 2.60 (p value 0.000).

Table 5.1 Price change regression (Equation 2): Hairdressing, takeaway coffee and sandwiches, takeaway meals, and restaurants

VARIABLES	Pp diff
Vat 2019	3.183*** (0.242)
Vat 2023	1.430*** (0.242)
COVID	2.488*** (0.242)
MW 2016	0.681*** (0.242)
MW 2017	0.929*** (0.242)
MW 2018	0.936*** (0.242)
MW 2021	0.430* (0.242)
MW 2022	0.880*** (0.242)
MW 2023	0.675*** (0.242)
MW 2024	1.177*** (0.242)
MW 2025	0.747*** (0.242)
Jan_Placebo	0.576*** (0.140)
Sept_Placebo	0.125 (0.122)
July_Placebo	0.282** (0.122)
Constant	0.109*** (0.0202)
Observations	2,132
R-squared	0.161

Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Figure 5.1 Triple differences estimates (January): Hairdressing, takeaway coffee, takeaway meals and restaurants prices

Sources: CPI data from the Central Statistics Office; authors' analysis.

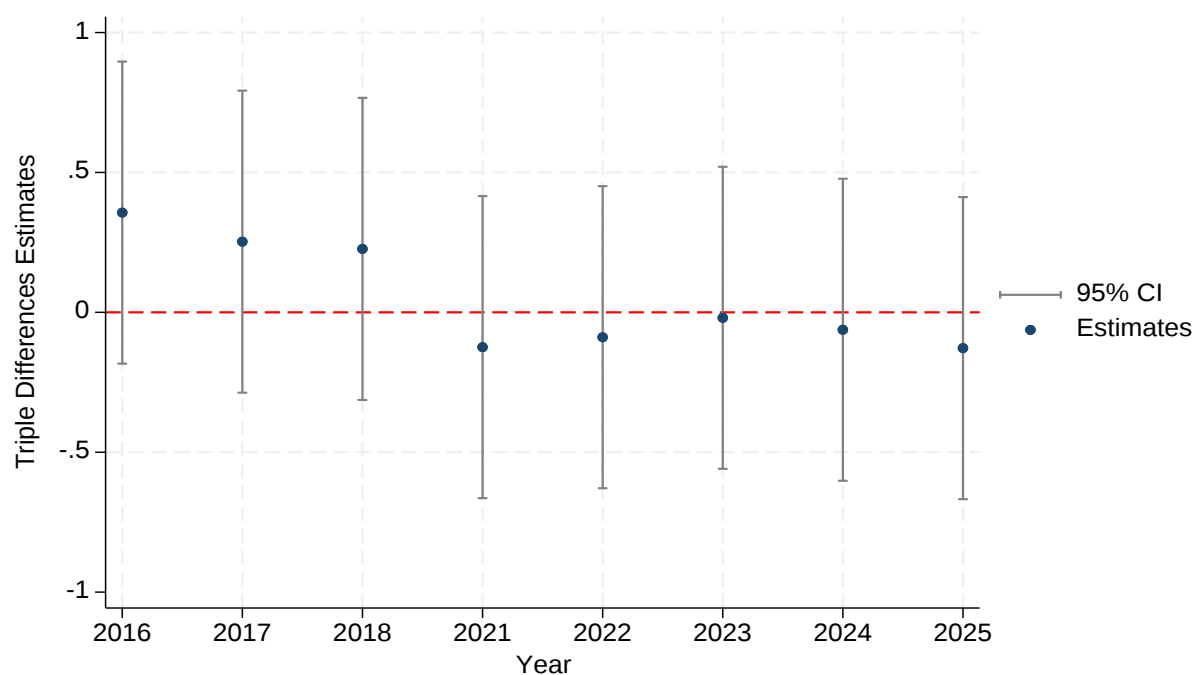
5.1.1 Lagged effects

While we have estimated the immediate (January) price effects associated with minimum wage increases, it is possible that price effects continue to materialise over subsequent months.²³ For example, Aaronson (2001) shows that restaurant price changes following minimum wage increases in the US can continue up to three months following the minimum wage increase. We examine whether price effects persist up to four months after the minimum wage increase (i.e. to April). There are difficulties in estimating the lagged effects for February, which we address in detail below. For this reason, we begin with April and work back to February. To estimate the lagged effects, we replace the January MW dummies in Equation (2) with the relevant month and also include the relevant placebo dummy. For example, if estimating lagged effects for April, we include dummies for April of the relevant year, and an *April_Placebo* pre-treatment dummy variable. The analogous triple differences estimate is then the difference between these two estimates.

²³ It is also possible that anticipation effects could exist, whereby prices are adjusted before the new minimum wage change actually comes into effect. However, our ability to analyse anticipation effects is impacted by the fact that it would not be possible to separate the September 2023 VAT change from possible anticipation effects. To the extent that true anticipation effects exist, our estimates therefore understate the price impacts.

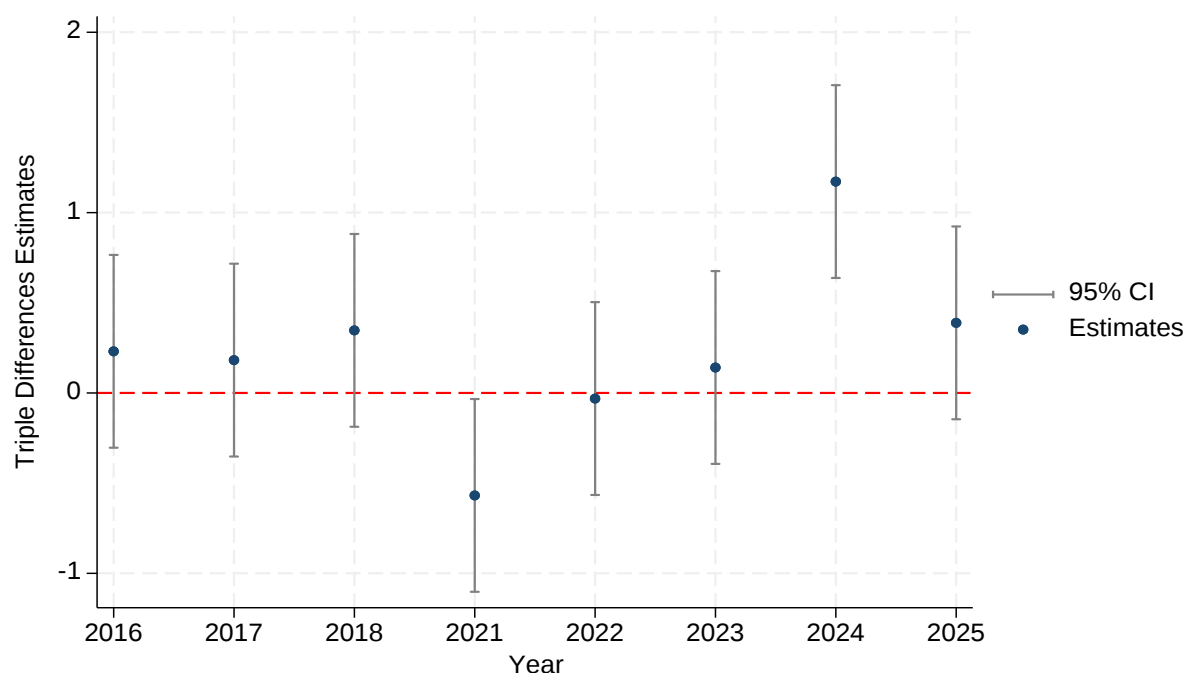
The lagged effects for April and March are shown in Figures 5.2 and 5.3. In April, there are no price effects. However, there are lagged price effects in March 2024, with prices of the treated group increasing by 1.2 percentage points more than the control group. This suggests that the price effects following the 2024 minimum wage increase (the largest to date), extended to three months post policy change.

Figure 5.2 Lagged triple differences estimates (t+4: April): Hairdressing, takeaway coffee, takeaway meals and restaurants prices



Sources: CPI data from the Central Statistics Office; authors' analysis.

Figure 5.3 Lagged triple differences estimates (t+3: March): Hairdressing, takeaway coffee, takeaway meals and restaurants prices

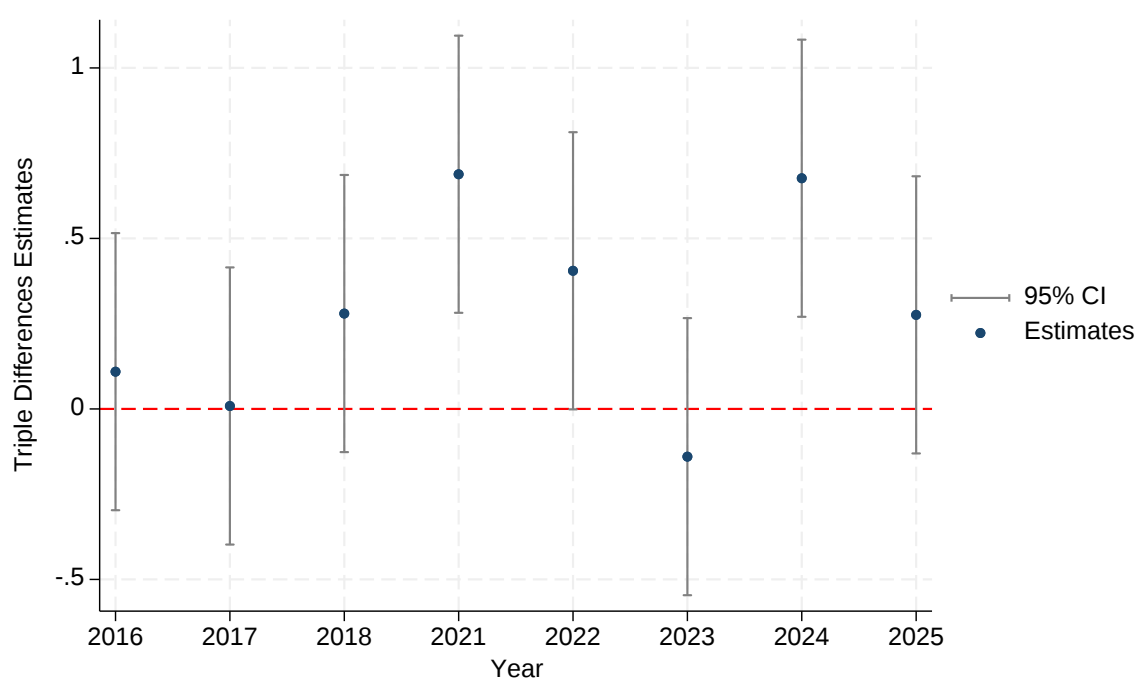


Sources: CPI data from the Central Statistics Office; authors' analysis.

Implementing the triple differences estimator for February is difficult due to the seasonal variation in hairdressing that appears pre-treatment. For four of the five hairdressing categories pre-2016, there is a sudden jump in the price series in December; normal looking price trends from December to January, followed by a sudden drop to the baseline index level in February. The implication for our estimator is that if we estimate a pre-treatment placebo effect for February, it shows a very large decline in prices that is due to this pre-treatment seasonal variation. As a result, if we compare the pre-treatment placebo February month to February post-treatment, we get a large and significant price effect for all post-treatment February time periods. However this is purely an artefact of the pre-treatment seasonal pricing anomaly in four of the five hairdressing categories. To address this, when estimating the lagged effect for February, we base the pre-treatment price dynamics for hairdressing on the one category that displays consistent price trends over time (gents dry haircut). The results are shown in Figure 5.4 and show that there is a statistically significant impact in February 2024, with prices for the treated group increasing by approximately 0.7 percentage points more than the control group.

Note also that Figure 5.4 shows a statistically significant impact for February 2021. Given the apparent lack of a minimum wage impact in January or March of 2021, we must interpret this with caution. Further analysis of the CPI categories reveals that this period was characterised by unusually low inflation among categories including clothing and footwear, which form part of the control group.²⁴ For all other years, month-on-month price changes for clothing and footwear for February amounted to an increase of approximately 6 per cent. For February 2021, however, it was just 0.5 per cent. These unusual price patterns for clothing and footwear in 2021 were also apparent in Figure 3.11. This leads to a lower than usual month-on-month price increase for the control group in February of 2021 which then results in a relatively large increase in the price of the treatment group when compared to the control group for this time period. As such, this effect cannot be reliably attributed to the 2021 minimum wage increase.

Figure 5.4 Lagged triple differences estimates (t+2: February): Hairdressing, takeaway coffee, takeaway meals and restaurants prices



Sources: CPI data from the Central Statistics Office; authors' analysis.

Taken together, the results indicate a statistically significant price effect for the 2024 minimum wage increase only, with pass-through occurring for up to three months after the minimum wage change. To help gauge the magnitude of the impact, it is useful to present this as

²⁴ See <https://www.cso.ie/en/releasesandpublications/er/cpi/consumerpriceindexfebruary2021/>

an elasticity. The price pass-through effects for January to March of 2024 amount to a price increase of approximately 2.5 per cent that is attributable to the 2024 minimum wage change. As the minimum wage increased by 12.4 per cent in 2024, this amounts to an elasticity of 0.20. Therefore, while we detect an impact on prices for hairdressing and food outside the home (i.e. takeaway coffee and sandwiches, takeaway meals, and restaurants), the effect is only apparent for the largest minimum wage increase in the sample, and the magnitude implied by the elasticity is relatively low – a 1 per cent increase in the 2024 minimum wage is associated with a 0.2 per cent increase in prices for hairdressing and food outside the home.

5.2 Treatment Group 2: Hotels, guesthouses, B&Bs, alcohol in pubs

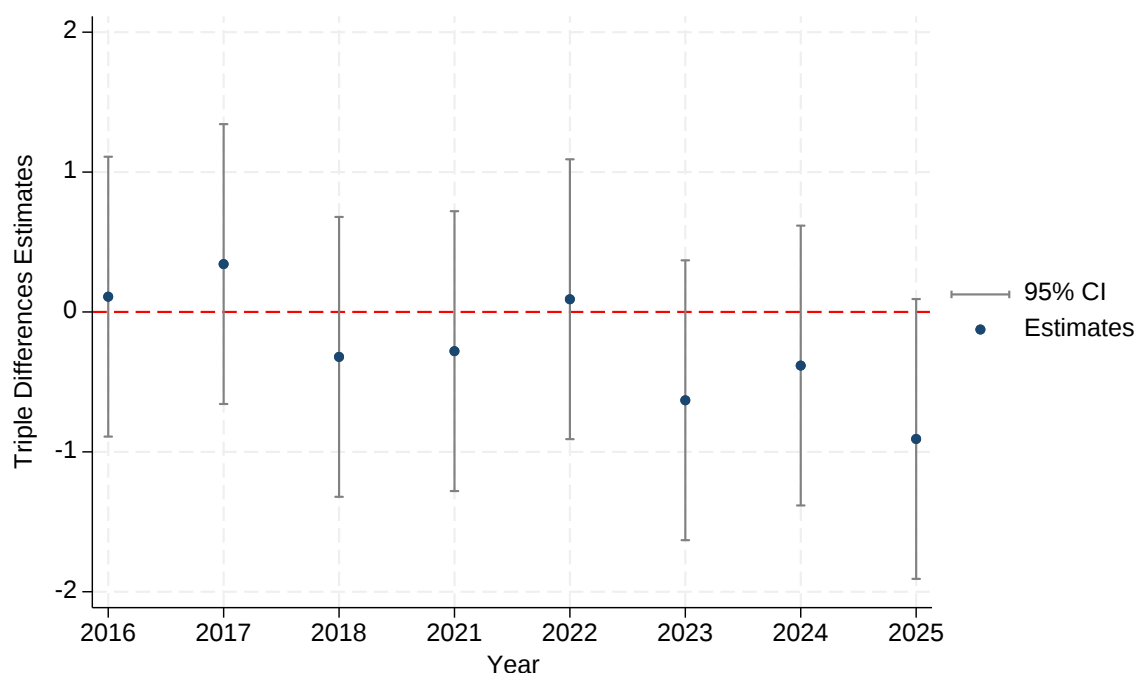
The results from estimating Equation (2) for this alternative treatment group are shown in Table 5.2, and the triple differences estimates are shown in Figure 5.5. Unlike Group 1, there is no apparent minimum wage impact on prices for this group. The minimum wage dummy variables in Table 5.2, and the triple differences estimates in Figure 5.5, are not statistically significant.

Table 5.2 Price change regression (Equation 2): Hotels, guesthouse, B&Bs, alcohol

VARIABLES	Pp diff
Vat2019	0.276 (0.443)
Vat2023	-0.0375 (0.443)
COVID	-1.223*** (0.443)
MW2016	0.341 (0.443)
MW2017	0.574 (0.443)
MW2018	-0.0892 (0.443)
MW2021	-0.0480 (0.443)
MW2022	0.323 (0.443)
MW2023	-0.399 (0.443)
MW2024	-0.151 (0.443)
MW2025	-0.676 (0.443)
Jan_Placebo	0.232 (0.258)
Sept_Placebo	-0.358 (0.224)
July_Placebo	0.531** (0.224)
Constant	0.207*** (0.0371)
Observations	2,132
R-squared	0.011

Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Figure 5.5 Triple differences estimates for Treatment Group 2: Hotels, guesthouses, B&Bs, alcohol in pubs (January)

Sources: CPI data from the Central Statistics Office; authors' analysis.

5.3 The overall impact on inflation

We observed a statistically significant increase in some minimum wage-exposed price categories following the largest (2024) minimum wage increase, while no statistically significant effects were observed for other years. The estimated elasticity associated with the 2024 minimum wage increase equates to a 1 per cent increase in the 2024 minimum wage leading to a 0.2 per cent increase in the price of hairdressing and food outside the home. Given this, the impact on the overall CPI is likely to be limited.

The CSO provides weights for each price category in the CPI data. The weight is the proportion of total consumer expenditure spent on a price category; the larger the weight, the greater the impact that item will have on the overall CPI inflation rate. The impacted categories identified in this study – hairdressing, takeaway coffee, takeaway meals and restaurants – have a combined weight of 11.6 in the total CPI.

We simulate what inflation may have been in the absence of the 2024 MW increase. First, we calculate the actual price change of all CPI items included in our price series between December 2023 and

December 2024, holding weights constant.²⁵ We then calculate an adjusted price change between December 2023 and December 2024 by manually stripping out the cumulative price effects attributable to the minimum wage increase (2.45 percentage points for the relevant hairdressing and food categories). We calculate an actual inflation rate of 1.8 per cent, and we estimate that, in the absence of minimum wage effects, inflation would have been 1.5 per cent.²⁶

Finally, we estimate the overall proportion of the total wage bill in the economy that goes to minimum wage employment. This is a useful statistic when trying to evaluate the overall impact that a minimum wage change will have on the total wage bill, and hence prices. The total wage bill or compensation of employees is the CSO's official measure of total employee pay and employer social costs across the economy. In Q4 2025, it was estimated to be €37,471,000,000.²⁷ In Q4 2025, around 10 per cent of employees were paid the minimum wage. However, we estimate that minimum wage employment only accounted for 2.7 per cent of the total quarterly wage bill. This estimate is very close to the share of minimum wage bill on the total wage bill in the UK, which stands at around 2.5 per cent as reported by the UK Low Pay Commission.²⁸

5.4 Alternative estimation strategy – continuous treatment

The results from estimating Equation (8) for Treatment Group 1 (Hairdressing, takeaway coffee and sandwiches, takeaway meals, and restaurants) are shown in Table 5.3. Similar to the previous analysis, we implement Equation (8) for January, but also for lagged periods out to April. The results indicate that a 1 percentage point increase in the minimum wage leads to 0.034 percentage point increase in prices in the January following a minimum wage increase. As before, we see that the price effects extend to March, but not beyond that.

²⁵ We use the latest 2026 weights. We hold weights constant as we do not want changes to weights impacting the price changes in our simulation.

²⁶ Our calculated inflation rate of 1.8 per cent differs from the official CSO CPI change for this period of 1.4 per cent. However, we are not trying to replicate the official inflation rate. Recall that we are holding weights constant using the most recent (2026) weights for each category.

²⁷ Please see: <https://www.cso.ie/en/releasesandpublications/ep/p-na/quarterlynationalaccountsquarter42025/compensationofemployees/>.

²⁸ Please see: <https://minimumwage.blog.gov.uk/2026/04/01/low-pay-commission-explainer-the-minimum-wage-and-inflation/>.

Table 5.3 Price change regression with continuous treatment (Equation 8): Hairdressing, takeaway coffee and sandwiches, takeaway meals, and restaurants

VARIABLES	(1)	(2)	(3)	(4)
	January	February	March	April
C_MW	0.034***	0.037***	0.081***	-0.002
	(0.010)	(0.009)	(0.009)	(0.008)
Constant	0.727***	-0.581***	-0.415***	0.044
	(0.053)	(0.047)	(0.050)	(0.038)
Observations	143	143	156	156
R-squared	0.075	0.106	0.303	0.001

Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

We can report these impacts as an elasticity. For example, consider the cumulative impact of going from no minimum wage increase to a 10 per cent minimum wage increase. This leads to a combined 1.5 per cent increase in prices over the three months, equating to an elasticity of 0.15.²⁹ As would be expected, the elasticity that utilises all years of data is slightly lower than the elasticity calculated earlier that focuses on 2024 alone (of 0.20). Consistent with our previous analysis, we detect no statistically significant effects for Treatment Group 2 (Hotels, guesthouses, B&Bs, alcohol in pubs).

²⁹ The 1.5 is calculated as $(10 \times 0.034) + (10 \times 0.037) + (10 \times 0.081) = 1.5$.

Chapter 6

Conclusion

Minimum wages in Ireland have increased annually since 2016, based principally on the recommendations of the Irish Low Pay Commission. Increases in the minimum wage have ranged from around 1 per cent in 2017 and 2021, to 12.4 per cent in 2024. Minimum wage increases can generate positive outcomes by boosting the hourly pay of the lowest paid workers in the economy and reducing wage inequality. However, concerns exist regarding potential negative impacts of minimum wage increases on the employment levels and hours worked of minimum wage employees. Concerns also exist that minimum wage increases could lead to higher prices among certain goods and services and therefore lead to higher inflation. There now exists a substantial body of research that has examined the causal impacts of minimum wage increases on minimum wage employment and hours worked. However, the literature on price effects is relatively underdeveloped and has yet to be assessed within an Irish context. We attempt to fill this gap in the evidence base using disaggregated price data on approximately 600 price categories.

For the minimum wage increases that occurred between 2016 and 2023, along with the 2025 increase, we detect no statistically significant impact on the prices of minimum wage intensive goods and services. However, there is evidence of price pass-through effects following the 12.4 per cent increase in the minimum wage that occurred in 2024. Price increases were detected for categories including hairdressing, takeaway meals/coffee and restaurant meals. For the impacted categories we estimate an elasticity of 0.2, suggesting that these goods would increase in price by 2 per cent for a given 10 per cent increase in the minimum wage.

It is also important to assess the extent to which minimum wage pass-through effects influence the general level of inflation in the economy, as measured by the CPI. Any evidence of rising inflation as a consequence of minimum wage changes, would raise concerns regarding consumer affordability and economy wide competitiveness. We calculate an inflation rate of 1.8 per cent across all price categories in 2024. In the absence of minimum wage price pass-through effects, we estimate that the inflation rate in 2024 would have stood at 1.5 per cent. However, it is important to recognise that price pass-through

impacts were detected following just one of ten minimum wage increases examined, and these elasticities may not apply to all future minimum wage increases. The findings presented in this current study represent an important contribution to the Irish minimum wage literature, as it helps complete the picture regarding the extent to which minimum wage changes influence key policy variables. The Irish Central Bank currently has an inflation target of 2 per cent, and our analysis shows that modest minimum wage increases are unlikely to have substantial implications for this target.

In summary, we find that the majority of minimum wage increases in Ireland have generally not impacted the prices of goods or services that rely on high numbers of minimum wage employees. Likewise, minimum wage increases have generally not impacted annual inflation rates and, by extension, consumer affordability and general competitiveness. The study demonstrates that other policies, such as VAT increases, have had a much more significant impact on the price of minimum wage intensive goods.

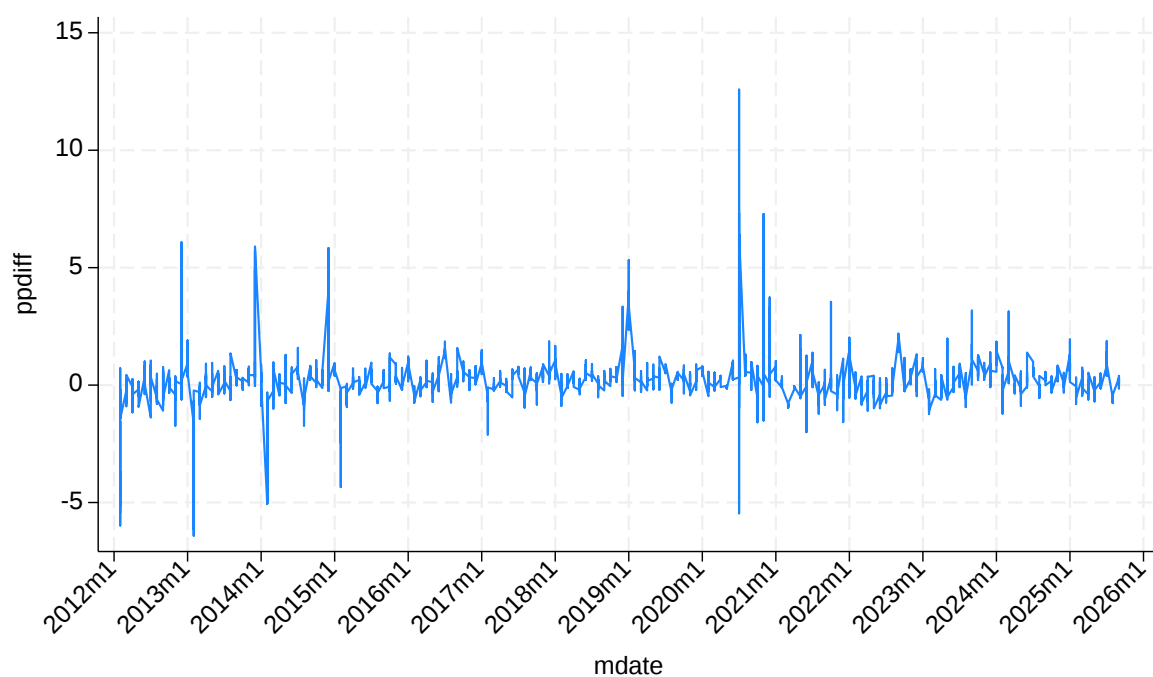
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Appendix

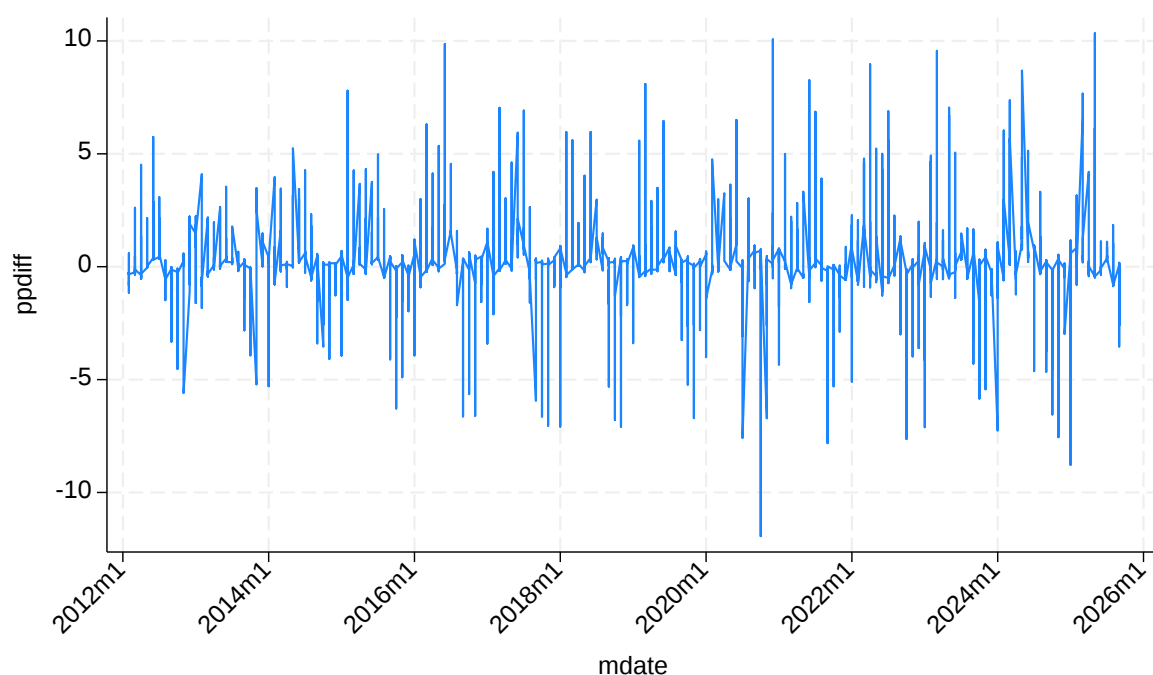
**Appendix Figure A1 Plot of outcome variable (Price_Diff) for Treatment Group 1:
Hairdressing, takeaway coffee, takeaway meals and restaurants**



Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: Plots the outcome variable (Price_Diff) over time for the following categories: hairdressing, takeaway coffee, takeaway meals, restaurants.

**Appendix Figure A2 Plot of outcome variable (Price_Diff) for Treatment Group 1:
Hotels, guesthouses, B&Bs, alcohol in pubs**



Sources: CPI data from the Central Statistics Office; authors' analysis.

Notes: Plots the outcome variable (Price_Diff) over time for the following categories: hotels, guesthouses, B&Bs, alcohol in pubs.



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