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## Special feature: Indexation of labour taxation and benefits in OECD countries

### Introduction

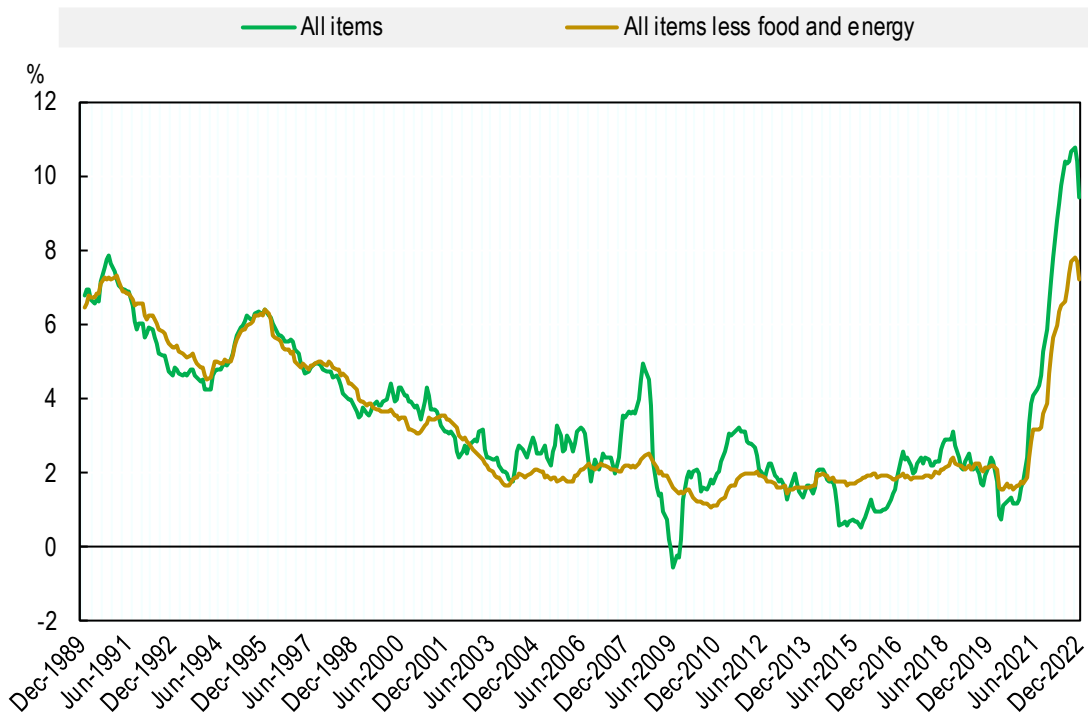
Inflation rose sharply across the OECD in 2021 and 2022. In almost all OECD countries, nominal wage growth did not keep up with inflation, causing real wages to fall. This special feature examines how labour tax policy in OECD countries responds to inflation, largely focusing on indexation, the mechanism through the absolute value of thresholds, brackets, credits, and in-work benefits in a tax system are adjusted to reflect changes in prices, wages and (less frequently) other macroeconomic variables. These adjustments offset fiscal drag – the phenomenon whereby increases in wages result in larger tax burdens. The analysis in this chapter is based on the results of a questionnaire circulated to OECD countries in 2022 and refers primarily to the tax systems in that year.

The special feature is structured as follows. The first section examines inflation and wage trends in OECD countries since the start of the COVID-19 pandemic in 2020. The second section explains fiscal drag and describes the different components of indexation policies. The third section analyses the results of the questionnaire circulated to OECD countries showing how they adjust their personal income tax (PIT) systems, social security contributions (SSCs) and cash benefits<sup>1</sup> in response to inflation. The fourth section examines the upwards pressure that increases in nominal wages between 2019 and 2022 placed on the tax burden in OECD countries. This analysis demonstrates that, in the absence of indexation and other tax policies, a single parent with two children earning 67% of the average wage would have been especially vulnerable to fiscal drag over this period.

### Inflation and wage trends in OECD countries during the COVID-19 pandemic

Inflation in the OECD started to rise significantly in 2021 and accelerated in 2022 (Figure 2.1). Initially, higher prices were driven by the impact of the COVID-19 pandemic on the global economy, which resulted in a surge in demand for certain durable goods as well as supply shocks that were compounded by higher shipping costs (OECD, 2022<sup>[1]</sup>). Although some of these factors subsided over the course of 2021, inflationary pressure intensified in 2022 as a result of Russia's illegal war of aggression in Ukraine. This caused an immediate spike in the price of key commodities including oil, gas and coal, metals, wheat and corn, edible oils, and fertilisers. The wholesale cost of electricity rose significantly in Europe as a result of the increase in gas prices. Food prices also rose sharply (OECD, 2022<sup>[1]</sup>). However, inflation declined in the final quarter of 2022 in many countries across the OECD (OECD, 2023<sup>[2]</sup>).

**Figure 2.1. Inflation in the OECD since the 1990's: All items and all items less food and energy**



Note: The OECD inflation rate is a weighted average for 38 OECD countries from 1995. Prior to 1995, Chile, Colombia, Costa Rica, the Czech Republic, Estonia, Hungary, Iceland, Israel, Latvia, Lithuania, Poland, the Slovak Republic and Slovenia are excluded.

Source: (OECD, 2023<sup>[2]</sup>).

StatLink  <https://stat.link/61c5uo>

Consumer price inflation in the OECD peaked at 10.8% in October 2022 and stood at 9.6% for 2022 as a whole, the highest annual average inflation rate since 1988 and well above the inflation rate of 4.0% in 2021 and 1.4% in 2020 (OECD, 2023<sup>[2]</sup>). In the two decades prior to the pandemic, inflation was low and relatively stable, notwithstanding periods of volatility in food and energy prices (Figure 2.1). Inflation is projected to decline to 6.5% in 2023 and 5.1% in 2024, a level that would be significantly above central bank objectives and long-term trends prior to the pandemic (OECD, 2022<sup>[1]</sup>).

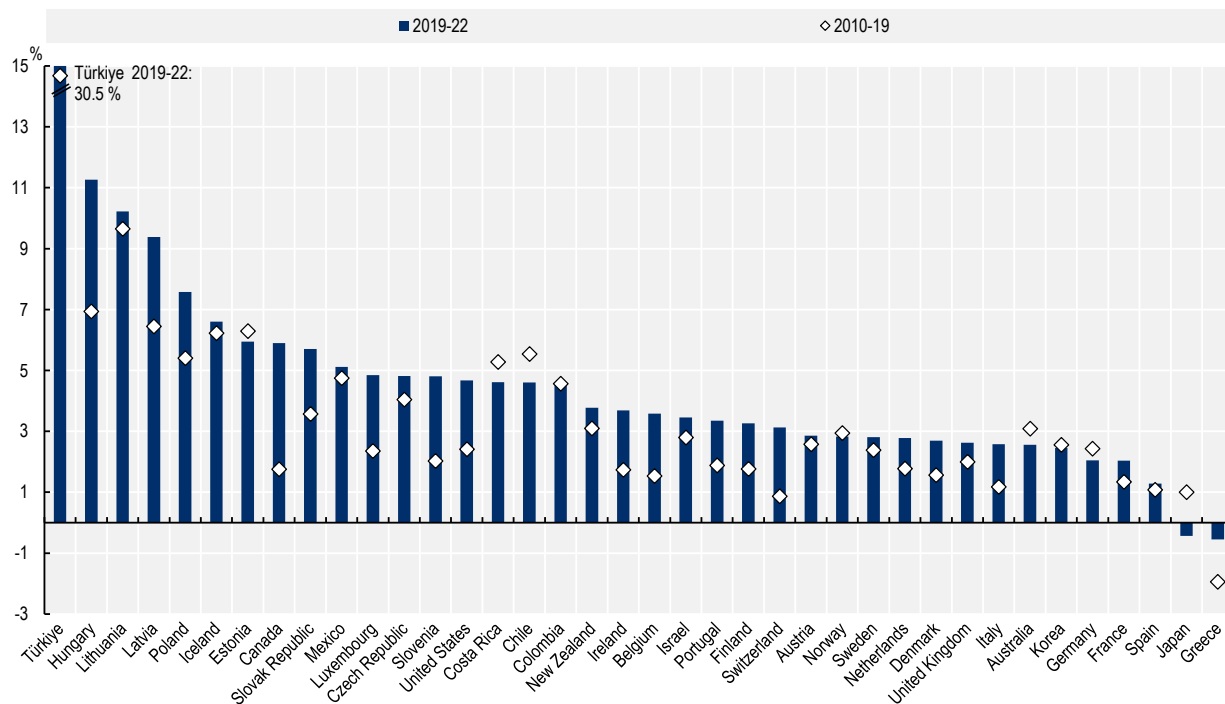
The wages on which the *Taxing Wages* models are based have risen during the pandemic.<sup>2</sup> According to preliminary wage data for 2022, annual nominal wage growth between 2019 and 2022 for the workers included in these models was higher than between 2010 and 2019 in 27 out of 38 OECD countries (Figure 2.2). In 15 countries, average annual wage growth between 2019 and 2022 was more than 50% higher than in the period from 2010-2019. The largest acceleration in nominal average annual wage growth between the two periods was seen in Canada, Switzerland, Slovenia, Finland and the United States. The sharpest slowdown in nominal average annual wage growth between the two periods was recorded in Japan, Greece (the only two countries where nominal wage growth was negative during the pandemic), Colombia, Mexico and Korea.

However, Chapter 1 of this Report reveals that average nominal wages used in the *Taxing Wages* models failed to keep pace with inflation in 2022. Based on preliminary data available for 2022, real wages declined between 2021 and 2022 in all but three countries (Colombia, Hungary and Switzerland). Between 2020 and 2021, real wages rose in 26 out of 38 countries amid an economic recovery across the OECD.

Looking at the labour market as a whole, Figure 2.3 shows that real wages declined on a year-on-year basis in 31 of the 32 OECD countries for which this data is available for the third quarter of 2022, with an average annual fall of 3.3% from the same period in 2021.


**Figure 2.2. Nominal average wage growth in OECD countries, 2010-2022**

Average annual growth in wages (percentage), 2010-19 and 2019-22



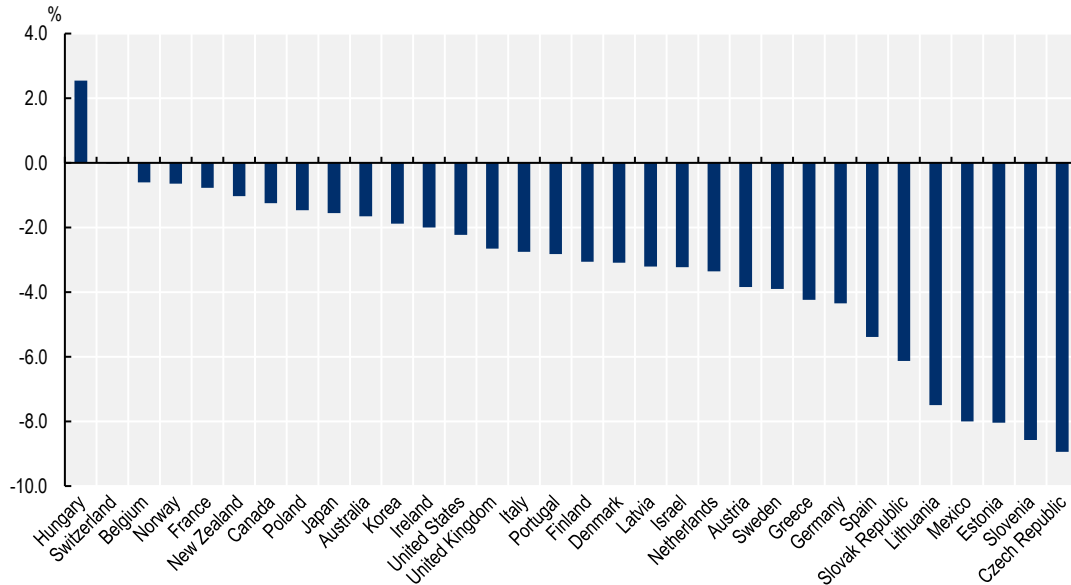
Note: For 2022, average wages are updated in line with (OECD, 2022<sub>[1]</sub>), which calculates wage increases across the economy and therefore a wider sample than the *Taxing Wages* models.

Source: Author's calculations based on Chapter 1.

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**Figure 2.3. Real compensation per employee in selected OECD countries, Quarter 3 of 2022**

Year-on-year change



Note: Compensation per employee deflated using the personal consumption expenditures deflator.

Source: (OECD, 2022<sup>[1]</sup>) and OECD calculations.

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## Fiscal drag and indexation

Inflation affects the tax burden of workers, including the household types covered in *Taxing Wages*. This section explains how, in a progressive tax system, higher nominal wages lead to larger tax burdens and can generate significant increases in nominal tax revenues through the mechanism known as fiscal drag (OECD, 2008<sup>[3]</sup>). This phenomenon attracted considerable interest in OECD countries due to the rapid inflation in 2022, but it has an impact on workers' tax burdens even in periods of relatively low inflation; it also affects the distribution of income and the incentives for workers.

Fiscal drag works through several channels, and it can be considered in nominal and real terms (Heinemann, 2001<sup>[4]</sup>). 'Nominal' fiscal drag occurs when the absolute value of thresholds and tax brackets is not adjusted automatically to the full extent of inflation; nominal wage growth will push the incomes of some workers further up the tax schedule. The phenomenon will be especially pronounced in systems where there are more brackets or where large differences in rates exist between brackets (Beer, Griffiths and Klemm, 2023<sup>[5]</sup>). However, a worker's tax burden may rise even if they do not move into a higher tax band when a greater proportion of their taxable income is taxed at higher rates.

This mechanism is known as bracket creep, or cold progression. This phenomenon automatically generates higher nominal tax revenues for the government (assuming that employment rates and hours worked remain constant), but it does so in a way that lacks transparency. As (Beer, Griffiths and Klemm, 2023<sup>[5]</sup>) state, 'Raising thresholds but by less than the inflation rate (or even freezing them but then cutting tax rates) can appear a politically expedient way to raise real taxes by stealth, while appearing to lower them.'

Inflation reduces the real value of tax-free allowances, flat-rate tax deductions, tax credits and cash benefits, as well as the thresholds for means-tested benefits if these are not adjusted in line with prices. To the extent that these instruments target low-income workers, nominal fiscal drag can have a disproportionately large impact at the lower end of the income distribution, potentially reducing the progressivity of the tax system and exacerbating poverty. Myck and Trzciński note that policy makers might be able to offset adverse distributional consequences of fiscal drag by using the tax revenues it generates to finance redistributive expenditure policies, but this issue is beyond the scope of this chapter (2022<sup>[6]</sup>).

SSCs are also affected by nominal fiscal drag, although the impacts work in different directions. At the bottom end, fiscal drag will increase revenues by lowering the real minimum earnings threshold for paying SSCs. At the upper end, it will reduce revenues by reducing the value of contribution ceilings. Heinemann finds evidence that higher inflation is associated with an increase in SSCs in OECD countries, suggesting that it is ‘politically easier to increase contribution ceilings and rates in an inflationary environment’ (2001<sup>[4]</sup>).

‘Real’ fiscal drag, meanwhile, generates higher tax revenues but is not a direct result of inflation as it can occur even when tax systems are indexed perfectly to prices. This form of fiscal drag occurs when wages across the economy grow in real terms. As with nominal fiscal drag, a worker’s tax burden increases with the progressivity of the tax system. This phenomenon can be negated if absolute values in the tax schedule adjust automatically to real wage growth but this rarely happens in practice, as this chapter will show.

Nominal and real fiscal drag have historically been important drivers of increases in tax-to-GDP ratios in the OECD, especially during the 1970s – a period of high inflation that prompted a number of OECD countries to implement indexation policies (Heinemann, 2001<sup>[4]</sup>). Nominal fiscal drag was also a feature of fiscal consolidation policies adopted in the wake of the Global Financial Crisis (Avram et al., 2013<sup>[7]</sup>).

High inflation and declining real wages in 2022 led to considerable interest in nominal fiscal drag and the measures that can be taken to mitigate it, especially indexation. Where wages are falling in real terms, a worker could face a larger tax burden on a lower real income, meaning they could be doubly disadvantaged by inflation. Countries in which inflation and tax rates are higher, and in which thresholds have not been updated for longer periods, are most likely to experience the most pronounced effects of fiscal drag.

### ***Inflation adjustment and indexation***

Countries can mitigate the impact of fiscal drag by adjusting the value of the parameters of PIT systems, SSCs and cash benefits in response to inflation. This section examines the three most important features of a country’s indexation policy: the method, benchmark and timing. Given variations in the policy objectives of a specific tax or benefit, the appropriate approach for its indexation may also differ. As is discussed in the following section, a majority of OECD countries adjust aspects of their tax and benefits systems but there is wide variation in indexation modalities both between countries and between different instruments within the same country.

#### *Indexation method*

Indexation can be either automatic or implemented on a discretionary basis. Automatic indexation is generally based on a statutory obligation to adjust tax thresholds, brackets and benefits to reflect changes in a specific indicator at a set point in the tax year. Discretionary indexation implies that the government can choose whether to make such adjustments and can decide upon the size and the timing of any adjustment.

Automatic indexation does not necessarily imply that a tax system is more responsive to inflation than discretionary indexation. In a number of countries, there is a well-established, regular, and transparent system by which governments adjust taxes and benefits to reflect inflation, even if these adjustments are not prescribed by law. Also, if the automatic adjustment only takes effect when inflation exceeds a certain threshold, as happens in certain OECD countries, then fiscal drag is likely. Ad-hoc indexation (whether

automatic or discretionary changes are the norm) enables governments to be more responsive to sharp increases in inflation.

### *Benchmark indicator*

The choice of benchmark indicator for the adjustment of labour taxes and benefits has consequences for fiscal drag, workers' purchasing power and the income distribution. Adjusting thresholds in line with the evolution of the consumer price index (CPI) ensures that these thresholds retain their real value but does not prevent fiscal drag in cases where there is real wage growth. The latter can be prevented if thresholds are adjusted in line with wages, which happens less frequently in OECD countries (and is more common for SSCs than for PIT). (Beer, Griffiths and Klemm, 2023<sup>[5]</sup>) argue in favour of choosing the CPI as a benchmark for indexation for consistency across different tax types but recognise that indexing to average wages would keep the tax rate the same for the average earner.

Uprating benefits in line with consumer prices serves to protect recipients' purchasing power. However, adjusting benefit systems in line with price inflation means that the income gap between benefit recipients and workers grows when wages increase in real terms, thereby exacerbating inequality (although the opposite will occur in instances of falling real wages (Paulus, Sutherland and Tasseva, 2020<sup>[8]</sup>)).<sup>3</sup> Moreover, price indexation implies that the value of eligibility thresholds will also decrease relative to wages which may affect the number of people who are eligible in the future (Immervoll, 2022<sup>[9]</sup>).

As this chapter will show, the majority of OECD countries index their labour tax systems to the CPI or with bespoke indices that are adjusted in line with CPI. However, countries such as the Netherlands have devised their own index for the specific purpose of adjusting tax systems in response to inflation. Certain governments that index labour taxes and benefits in line with prices do not benchmark them against all items tracked by the CPI. Certain OECD countries use a bespoke price index to reflect the expenditure patterns of benefit recipients (Immervoll, 2022<sup>[9]</sup>). This reflects the tendency for low-income groups to spend a higher proportion of their budget on necessities.

Some countries have devised a specific index for adjusting the parameters of their tax system. Chile's Internal Revenue Service, for example, indexes its PIT brackets to the Unidad Tributaria Mensual/Anual (UTM/UTA, the Monthly/Annual tax unit) and its education tax credit to the Unidad de Fomento; (UF, Inflation-indexed unit of account). The UTM is calculated by the Internal Revenue Service while the UF is calculated by the Central Bank; both are indexed to the CPI. Similarly, Mexico calculates the Unidad de Medida y Actualización (UMA, Unit of measure and updating) to fix the tax-exempt income level at federal and state level. The UMA is updated on an annual basis in line with the CPI.

In a small number of OECD countries, wages themselves are indexed to prices to protect workers against price rises. In certain cases, adjustments to the statutory minimum wage might be highly significant since this can be an important benchmark for components of the tax system.

### *Timing and frequency*

Indexation policies (automatic or discretionary) are also based upon a reference period. The most common approach is to use the most recent data for the relevant indicator prior to the change in the parameters of the tax system (usually at the start of tax year T). Where the tax year starts on 1 January in year T, governments often use inflation data from the second half of year T-1, which allows sufficient time to calculate the revenue impact of indexation measures and other tax policies to be implemented in year T.

In contexts where inflation rates are relatively steady, as was the case in most OECD countries prior to the COVID-19 pandemic, there is little problem with using price changes in T-1 to calculate thresholds in year T. However, during periods when prices are rising sharply, using a historical reference period for the benchmark indicator might result in the parameters in the tax and benefit system losing value in real terms before the tax year starts and continuing to do so as the year progresses. This will exacerbate fiscal drag

and reduce earners' disposable income. Forward-looking estimates of the benchmark indicator(s) might provide insurance against the impact of this lag, but they too can be vulnerable to rapid and unforeseen changes in prices.

Periods of high inflation also raise question about how often tax systems should be adjusted. As stated by (Beer, Griffiths and Klemm, 2023<sup>[5]</sup>), 'For modest inflation, annual adjustment is sufficient, while high inflation could require more frequent adjustment.' A number of countries made in-year adjustments in response to high inflation in 2022, as is discussed below.

## Indexation practices in OECD countries

To understand indexation practices in OECD countries, a questionnaire was circulated in 2022 as part of the data collection for this edition of the *Taxing Wages* Report. This section summarises the responses to this questionnaire, which focused on countries' approach to adjusting their tax and benefit systems for inflation, the benchmark used for such adjustments and the timing of these adjustments.

The information provided in this section relates to indexation policies that were in place in 2022. These policies are subject to change: for example, Austria has introduced automatic indexation for PIT and cash benefits with effect from January 2023, while Greece will change its indexation policy for SSCs in 2025. Meanwhile, the United Kingdom has temporarily deviated from its customary indexation policies.

The results for all countries should be interpreted on the understanding that countries were not required to provide an exhaustive account of adjustment mechanisms for the taxes and benefits contained in the *Taxing Wages* models but rather to identify their broad approach.<sup>4</sup>

**Table 2.1. Indexation policies in OECD countries**

	Personal income taxes	Social security contributions	Cash benefits	Timing
Australia	Discretionary	Not applicable	Automatic	Annual for automatic adjustments
Austria	Discretionary	Discretionary	Discretionary	Discretionary
Belgium	Automatic	Automatic	Automatic	Mix
Canada	Automatic	Automatic	Automatic	Annual
Chile	Automatic	Automatic	Discretionary	Annual and monthly for automatic adjustments
Colombia	Automatic	Automatic	Automatic	Annual
Costa Rica	Automatic	Automatic	Automatic	Annual
Czech Republic	Discretionary	Automatic	Discretionary	Annual for SSCs
Denmark	Automatic	Not applicable	Automatic	Annual
Estonia	Discretionary	Automatic	Discretionary	Annual for SSCs
Finland	Discretionary	Discretionary	Automatic	Annual
France	Discretionary	Automatic	Automatic	Annual
Germany	Discretionary	Discretionary	Discretionary	Discretionary
Greece	Discretionary	Automatic	Discretionary	Annual for SSCs
Hungary	Discretionary	Discretionary	Discretionary	Discretionary
Iceland	Automatic	Discretionary	Discretionary	Annual
Ireland	Discretionary	Discretionary	Discretionary	Annual
Israel	Automatic	Automatic	Automatic	Annual
Italy	Discretionary	Automatic	Discretionary	Annual
Japan	Discretionary	Discretionary	Discretionary	Annual
Korea	Discretionary	Discretionary	Discretionary	Annual

Latvia	Discretionary	Discretionary	Discretionary	Annual
Lithuania	Automatic	Automatic	Automatic	Annual
Luxembourg	Discretionary	Automatic	Automatic	Biannual if > 2.5%
Mexico	Automatic	Automatic	Not applicable	If CPI >10% for PIT
Netherlands	Automatic	Automatic	Automatic	Annual
New Zealand	Discretionary	Not applicable	Automatic	If CPI >5%
Norway	Discretionary	Discretionary	Discretionary	Annual
Poland	Discretionary	Automatic	Discretionary	Annual for SSCs; every three years for family benefit
Portugal	Discretionary	Discretionary	Automatic	Annual
Slovak Republic	Automatic	Automatic	Automatic	Annual
Slovenia	Automatic	Automatic	Automatic	Annual
Spain	Discretionary	Discretionary	Discretionary	Discretionary
Sweden	Automatic	Automatic	Automatic	Annual
Switzerland	Automatic	Automatic	Automatic	Annual
Türkiye	Automatic	Discretionary	Not applicable	Annual
United Kingdom	Discretionary	Discretionary	Discretionary	Annual (historically)
United States	Automatic	Automatic	Automatic	Annual

Note: The information in this table relates to the tax and benefit systems in place in 2022.

In certain countries there exists variation around indexation approaches; in these cases, the predominant approach has been noted.

Three countries do not report any SSCs to *Taxing Wages* and two countries do not report any cash benefits. These are classified as 'Not applicable' in the table.

Source: Questionnaire responses.

### ***Automatic versus discretionary adjustment***

Table 2.1 sets out whether OECD countries adjust the parameters of PIT, SSCs and cash benefits for inflation on an automatic or a discretionary basis. It also shows how often adjustments are made. In some countries, the approach to inflation-adjustment varies across different measures within these three broad categories. In these cases, the table reflects the most common practice for each category.

These results, summarised in Table 2.2, attest to the variation in indexation policies that exists between and within OECD countries. In under half of OECD countries (seventeen), the PIT system is adjusted automatically, while for twenty-one countries the adjustments are discretionary. The majority of countries index SSCs and half of OECD countries index benefits. Twelve countries adjust each of PIT, SSCs and benefits automatically, while ten countries adopt a discretionary approach to all three categories.

### **Table 2.2. Indexation policies in OECD countries – Summary table**

Number of countries, percentage of countries in brackets

	Personal income tax	Social security contributions	Benefits
Automatic indexation	17 (45%)	21 (55%)	19 (50%)
Discretionary adjustment	21 (55%)	14 (37%)	17 (45%)
Not applicable	0	3 (8%)	2 (5%)

Note: In two countries, the automatic adjustment only takes effect if the benchmark indicator increases by a pre-specified rate.

Due to rounding, percentages may not sum to 100%.

Source: Table 2.1, Questionnaire responses.

Where indexation is automatic, it usually occurs on an annual basis at the start of the tax year. In some countries, the adjustment is only triggered if inflation exceeds a certain threshold. This is the case in



Belgium, Luxembourg (where adjustments can take place twice a year), Mexico (for the income tax schedule) and New Zealand (for the Family Tax Credit and Best Start programme).

In Belgium, family allowances in two of the three regions<sup>5</sup> are adjusted monthly while social contributions are either updated monthly (for personal contributions) or quarterly (for employer contributions). A number of countries reported that they do not adjust thresholds or benefits downwards in the case of deflation; rather, they leave thresholds unchanged in that situation.

In countries that report making adjustments on a discretionary basis, it is usually the case that the timing is also discretionary. In Ireland, however, the current Programme for Government includes a commitment to index income tax credits and bands at the start of each tax year to avoid fiscal drag provided that incomes are rising and the economy is recovering (Taoiseach, 2020<sub>[10]</sub>). This is also the case in Finland, where the tax system is updated every year with very few exceptions.

Where annual uprating is the norm, there have nonetheless been exceptions. In France, tax thresholds were kept unchanged in 2012 and 2013 as a fiscal consolidation measure. In the case of the United Kingdom, annual indexation has been standard practice historically but certain thresholds are being held at their current level in nominal terms until the 2025/26 tax year. Austria will shift to a system of automatic indexation in 2023 (Box 2.1).

Certain countries reported making in-year adjustments in response to the current inflation shock. Germany implemented several relief measures over the course of 2022. Its Tax Relief Acts increased the basic PIT allowance, the child allowance and the lump-sum deduction for work-related expenses. All workers who are liable for PIT received a one-off energy price allowance of EUR 300 in September 2022. A one-time bonus benefit payment of EUR 100 per child was paid out in July 2022. Meanwhile, France implemented an exceptional in-year adjustment of child benefit and in-work benefit amounts for inflation in July 2022. This lump-sum payment is subject to personal income tax, but not to social security contributions. Austria also provided an anti-inflation bonus of EUR 250, which was tax-exempt up to a yearly taxable income of EUR 90 000.

### **Box 2.1. Austria's reform to counteract fiscal drag**

Although this Chapter shows Austria as making discretionary adjustments to its taxes and transfers in response to inflation, the country passed a reform in September 2022 that means it will index PIT and social transfers from January 2023 onwards with the specific objective of counteracting fiscal drag.

Under the new system, two independent economic research institutes will calculate the impact of inflation on tax revenues. Based on this calculation, PIT thresholds and tax credits (although not tax allowances) will be adjusted to neutralise this impact.

Two-thirds of the estimated impact of inflation on PIT revenues will be compensated automatically by adjusting thresholds and tax credits, while one-third of this amount must be redistributed to compensate recipients of income by other means, for example through the PIT system, SSCs or specific measures. Social transfers, such as child benefits and child credits, will be fully adjusted in line with inflation.

The adjustment, which will occur at the start of each year, will be based on the CPI. The average of the monthly inflation rates between July in T-2 and June in T-1 will be used to adjust parameters in year T.

Source: Country response to questionnaire, (Government of Austria, 2022<sub>[11]</sub>).

## ***The modalities of inflation adjustment in OECD countries***

This section sets out the benchmark indicators that countries use to index their labour tax systems and the reference periods for these benchmarks. This information, which is based on countries' responses to the

questionnaire, is set out in Table 2.3, which shows the general approach for each main category in each country. Table 2.4 summarises the results. As with the approach to indexation identified in the previous section, there is significant variation within and between OECD countries concerning the specific modalities of indexation.

### *Personal income tax*

Fifteen countries reported that they adjust their PIT systems in line with prices while eighteen countries said they did not use a specific benchmark indicator. Two countries – Denmark and Lithuania – reported that they adjust their PIT system solely in line with wages. In three countries, the benchmark indicator varies.

Finland adjusts its PIT system by whichever out of prices and wages has risen the most, while key parameters in the Slovak Republic's PIT system are adjusted with reference to the Minimum Living Standard, which in turn is adjusted in line with whichever indicator has risen the least out of the low-income inflation rate or a measure of disposable income. Norway indexes different parameters of the PIT according to increases in whichever indicator is most relevant out of consumer prices, wages, pensions, or asset values.

Table 2.3. Indexation benchmarks and reference period

	Personal income taxes	Social security contributions	Cash benefits	Reference period
Australia	Discretionary	Not applicable	CPI	T-1
Austria	Discretionary	Discretionary	Discretionary	Discretionary
Belgium	CPI	Custom price index	Custom price index	T-2/T-1 for PIT; Current for SSCs and benefits
Canada	CPI	CPI	CPI	T-1
Chile	CPI	CPI and wage index	Discretionary	T-1 for annual adjustments
Colombia	Custom price index	Minimum wage	Minimum wage	T-1 and projected
Costa Rica	CPI	CPI	CPI	T-1
Czech Republic	Discretionary	Average wage	Discretionary	Current (T-2 updated) for SSCs
Denmark	Average wage	Not applicable	CPI	T-2
Estonia	Discretionary	Minimum wage	Discretionary	T-1
Finland	The higher of CPI or wage index	The higher of CPI or wage index	The higher of CPI or wage index	Forward-looking estimates for year t
France	Custom price index	Wages (Avg & min)	Custom price index	Current (nowcasting)
Germany	Discretionary	Discretionary	Discretionary	Discretionary
Greece	Discretionary	CPI	Discretionary	T-1 for SSCs
Hungary	Discretionary	Discretionary	Discretionary	Discretionary
Iceland	CPI +1%	CPI	Discretionary	T-1
Ireland	Discretionary	Discretionary	Discretionary	Discretionary
Israel	CPI	CPI	CPI	T-1
Italy	Discretionary	CPI	Discretionary	T-1
Japan	Discretionary	Discretionary	Discretionary	Discretionary
Korea	Discretionary	Discretionary	Discretionary	Forward-looking
Latvia	Discretionary	Discretionary	Discretionary	Discretionary
Lithuania	Average wage	Wages (Avg & min)	Discretionary	Discretionary
Luxembourg	Discretionary	Minimum wage	CPI	Current
Mexico	CPI	CPI	Not applicable	T-1
Netherlands	Custom price index	Custom price index	Custom price index	T-2/T-1
New Zealand	Discretionary	Not applicable	CPI	T-1
Norway	Relevant growth factor (Wages, CPI, pensions & wealth)	Average wage	CPI	Forward-looking
Poland	Discretionary	Average wage	Custom price index	Forward-looking wage estimates
Portugal	Discretionary	Discretionary	Minimum wage	T-1
Slovak Republic	Minimum living standard	Average wage	Minimum Living Standard	T-2
Slovenia	CPI	CPI	CPI	T-1
Spain	Discretionary	Discretionary	Discretionary	Discretionary
Sweden	Custom price index	Custom price index / wage index	Custom price index	T-2/T-1
Switzerland	CPI	CPI	CPI	T-2/T-1
Türkiye	Producer price index	Discretionary	Not applicable	T-1
United Kingdom	Discretionary	Discretionary	Discretionary	CPI for T-1 (historically)
United States	CPI	CPI	CPI	T-1

Note: The information in this table relates to the tax and benefit systems in place in 2022.

Year T refers to 2022, the fiscal year covered by this edition of *Taxing Wages*; T-1 would therefore be 2021, T-2 would be 2020 etc. Year T-1 implies the majority of the reference period falls in year T-1 but some of year T-2 might be included.

In some countries, indexation approaches vary within categories; in these cases, the predominant approach has been noted.

Social security contributions are not included in the *Taxing Wages* models for three countries and cash benefits are not included for two countries. These are classified as 'Not applicable' in the table.

Source: Questionnaire responses

**Table 2.4. Indexation benchmarks – Summary table**

Number of countries, percentage of countries in brackets

	Personal income tax	Social security contributions	Benefits
Prices	15 (39%)	12 (32%)	16 (42%)
Wages	2 (5%)	9 (24%)	2 (5%)
Discretionary	18 (47%)	11 (29%)	16 (42%)
Not specified	3 (8%)	3 (8%)	2 (5%)
Not applicable	0	3 (8%)	2 (5%)

Note: 'Not specified' means that a country chooses between pre-selected benchmarks as the basis for adjustment or uses a combination thereof. The Slovak Republic's approach to the adjustment of benefits is classified as 'not specified' because the Minimum Living Standard is indexed to whichever is lower out of the low-income inflation rate and the growth in net disposable income.

Due to rounding, percentages may not sum to 100%.

Source: Table 2.3, Questionnaire responses.

Of the fifteen countries that adjust the PIT systems in line with prices, ten use the CPI, one uses a producer price index and four use a custom price index. As examples of the latter approach, France excludes tobacco from its price index while Colombia uses a price index calculated for middle-class households. Iceland and Sweden uprate their PIT systems in line with the CPI plus 1% and 2% respectively. In the case of Iceland, this additional factor reflects long-term average annual growth in labour productivity and is specifically intended to mitigate fiscal drag.

The Netherlands adjusts the thresholds for PIT, SSCs and benefits in line with the so-called *tabelcorrectiefactor*. This indicator is based on the CPI but excludes the effects of changes in the rates of product-related taxes (such as value-added tax) and subsidies and consumption-related taxes (such as the motor vehicle tax). This step is intended to create independence between different tax instruments and thus prevent unforeseen interdependence between different policy measures. The only exception to this approach is the earned income tax credit, whose thresholds are adjusted in line with wages.

Germany adjusts the thresholds and other parameters of taxes and benefits modelled in *Taxing Wages* in response to the findings of two reports. The first is the so-called subsistence level report (*Existenzminimumbericht*), which is published every two years by the Federal Government to determine the amount of the basic income tax allowance and the child allowance needed to ensure the subsistence level of income is not subject to PIT. The subsistence level is based on expenditure on (inter alia) food, clothes, personal care, energy, housing and (social) insurance; it is updated by the "mixed index" (*Mischindex*), which is based 70% on changes in the prices for goods and services included in the subsistence level calculation and 30% on the development of net wages.

The second report, the so-called *Bericht über die Wirkung der kalten Progression*, is specifically intended to monitor fiscal drag and is also published every two years. It analyses the extent to which changes in wages that compensate for higher inflation (as measured by the deflator for private consumption) lead to higher average tax rates due to the progressivity of the PIT system.

#### *Social security contributions and cash benefits*

Twelve countries adjust the parameters for SSCs in line with prices only, of which ten use the CPI. Belgium, one of two countries that use a custom price index, excludes tobacco, alcoholic drinks, petrol and diesel from the indexation benchmark for social security contributions and cash benefits. Eight countries use wages (either minimum or average wages, or a combination thereof) as the benchmark. Greece currently uses prices to adjust SSCs but will move to a wage index in 2025.

Only eleven countries do not report using a specific benchmark for SSCs (compared to eighteen for PIT). Of the three countries which do not specify a single indexation benchmark, Norway uses the relevant

growth factors as outlined above in the case of its PIT adjustments, while Finland uses the higher of price and wage inflation, as with its indexation of PIT. Sweden adjusts the floor for SSCs in line with prices as for PIT but adjusts the contribution ceiling in line with an income index.

Where wages are used as the basis for adjustments to SSCs (or other aspects of the labour taxation system), the table shows whether the benchmark is the statutory minimum wage or the average wage calculated across the economy. Three countries report using the minimum wage and four use an average wage (plus two more when including Sweden's income index and Finland's wage index). In France and Lithuania, the average wage and minimum wage are used for different parameters of SSCs.

If a minimum wage is used, the uprating mechanism is also legally defined. This adjustment can be linked directly to prices or wages (or both, in the case of France) or it can be negotiated, as happens in Colombia and Estonia. In Belgium and Luxembourg, it is legally required for wages to be adjusted in line with inflation. Although Iceland's fixed SSC is meant to keep its real value over time in line with PIT thresholds and the tax credit, the increase has historically been capped at 2.5%. However, for the 2023 tax year, this value was updated in line with the latest available 12-month change in the CPI at the time of the adjustment, which far exceeded this cap.

Sixteen countries adjust their cash benefits in line with prices, of which eleven use the CPI. Two countries uprate benefits according to the minimum wage, and Finland uses whichever is higher out of the minimum wage and CPI inflation. Sixteen countries reported that they adjust benefits on a discretionary basis.

Lithuania adjusts its benefits in line with the Basic Social Allowance, which itself is determined on a discretionary basis. Portugal specifies that it uses the minimum wage rather than prices to adjust the child benefit in response to the decline in the country's birth rate. New Zealand adjusts the Minimum Family Tax Credit (MFTC) on a discretionary basis to ensure that single parents are better off receiving the MFTC when working 20 hours a week than they would be if they received other benefits. This calculation is based on a number of factors, including the minimum wage and other benefit parameters.

### *Reference period*

Over half of OECD countries adjust their labour tax systems according to changes in a benchmark indicator recorded prior to the start of the tax year in question. This creates a lag whose effects might be especially pronounced in periods of high inflation. For eight countries where uprating happens on a discretionary basis, it was not possible to identify a reference period. It therefore cannot be said with certainty whether and to what extent a lag exists in their tax systems.

The most common approach in OECD countries is to uprate thresholds for tax year T according to annual changes in the benchmark inflation indicator recorded in a month towards the end of year T-1, around the time that tax policies for tax year T are being formulated. If the month in which the end date of this indicator falls is in the second half of year T-1, this is recorded as T-1 in Table 2.2 because the majority of the reference period falls in that year. If the reference period covers the last six months of year T-2 and the first six months of year T-1, this is denoted as T-2/T-1 in Table 2.2.

In some countries, the lag is especially pronounced. In Denmark, most parameters are adjusted in line with changes in wages two years prior to the tax year in question (child benefits are adjusted in line with the CPI two years prior to the tax year). In Canada, there is a significant lag for its child benefits – eligibility is determined in June of year T based on family net income in T-1 and child benefit parameters that are indexed based on CPI from October T-2 to September T-1.

In three countries, tax systems are indexed to very recent changes in the relevant indicator. In the case of Luxembourg, this is because the parameters change when the relevant indicator surpasses a certain threshold. In France, a 'nowcasting' approach is taken to forecast the level of annual inflation in year T during budget preparations in the final months of year T. This means that PIT parameters used to tax

wages earned in year T (which occurs in year T+1) move in line with inflation in year T. In the Czech Republic, SSC thresholds are based on valorised wage data for year T-2.

Four countries adopt a forward-looking approach to predict the inflation rate in year T: Finland, Korea, Norway and Poland. In Finland, this is done with reference to the government's autumn economic forecast in year T-1. In Norway, the relevant growth factor for the respective instruments in year T is calculated in year T-1, while Poland uses a forecast of the annual wage in year T to update the family benefit (which happens every three years).

Considering Tables 2.1 and 2.2 together, the overall situation appears similar to that identified when the *Taxing Wages* report last examined indexation practices in OECD countries in 2007. As (OECD, 2008<sup>[3]</sup>) concludes: 'Most OECD countries do employ some form of adjustments, such as indexing tax band limits for inflation, in order to prevent large tax-burden changes as a result of inflation or real earnings growth. These adjustments are, however, incomplete or infrequent in most countries. As a result, the impact of tax reforms that aim at lowering tax burdens in a given year can to a large extent be offset by fiscal drag effects accumulated over extended periods.'

## Potential fiscal drag in the OECD

This section examines the upwards pressure that increases in nominal average wages shown in Figure 2.2 placed on the tax wedge in OECD countries between 2019 and 2022. The two panels in Figure 2.4 show the tax wedge in 2019 (dark blue bars) and 2022 (light blue bars) for two household types: a single worker earning 100% of the average wage and a single parent of two children earning 67% of the average wage. They also include a third indicator showing what the tax wedge would have been in 2019 if the average wage had been at its 2022 level (in current prices).

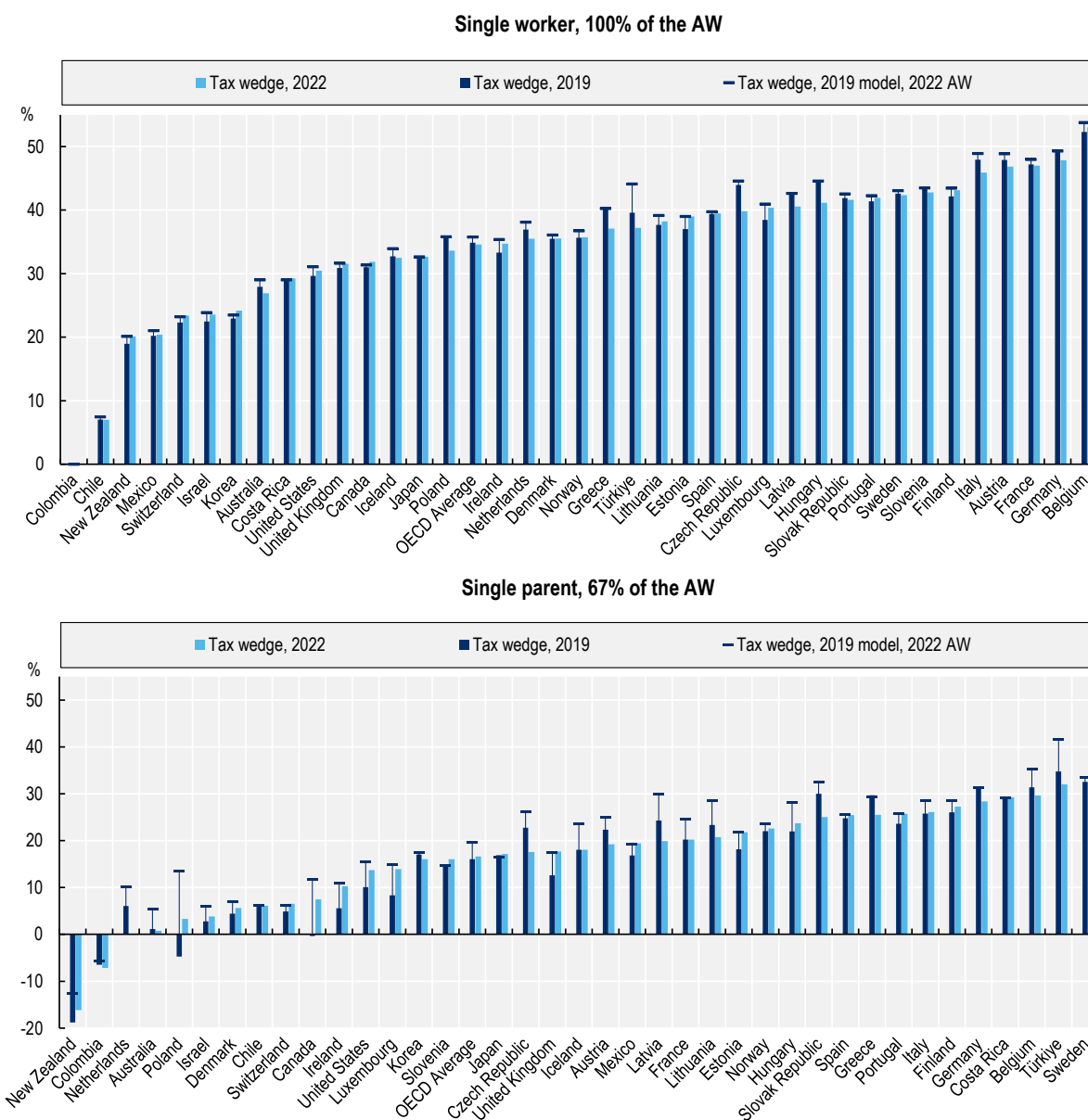
This third indicator, shown by the thin blue line above the dark blue bar for each country, demonstrates the hypothetical impact of increases in nominal wages between 2019 and 2022 on the tax wedge of the two household types if tax brackets, thresholds, benefit values and other parameters had been kept at the same nominal value throughout this period. It therefore demonstrates the potential nominal fiscal drag effect (described earlier) and is derived purely from the interaction of nominal wage increases with the nominal value of the parameters of the tax system.

The actual fiscal drag effect between 2019 and 2022 is determined by inflation, by trends in real wages and by any policy measures affecting the tax burden undertaken between the two periods, including (but not limited to) indexation and other inflation adjustments. Calculating this phenomenon goes beyond the scope of this chapter, since it would require disentangling the effects of policy changes and wage changes (real and nominal) between 2019 and 2022, a period in which labour taxation was an important aspect of governments' policy response to the COVID-19 pandemic and fluctuations in the average wage were the principal driver of changes in the tax wedge (OECD, 2022<sup>[12]</sup>).

### **Single worker earning 100% of the average wage**

Figure 2.4a shows the tax wedge and potential fiscal drag effect for a single worker earning 100% of the average wage. On average across the OECD, the tax wedge for this household type fell from 34.9% in 2019 to 34.6% in 2022; it increased in 18 of 38 countries and declined in 15, with the average size of the decline larger than that of the average increase. The upwards pressure of potential fiscal drag on the OECD average tax wedge was 0.9 percentage points (p.p.) (i.e. nominal wage growth would have added almost one percentage point to the OECD average tax wedge) and exceeded 1 p.p. in 15 countries.

Figure 2.4. Potential nominal fiscal drag in OECD countries



Note: The thin blue line captures potential nominal fiscal drag, which is the change in the tax wedge that would have been observed between 2019 and 2022 in the absence of any discrete policy measures or adjustment for inflation. The sum of the potential fiscal drag effect and the tax wedge in 2019 represents the hypothetical tax wedge for the two household types if they had earned the average wage for 2022 in the year 2019.

Source: *Taxing Wages* models, authors' calculations.

Türkiye showed the largest potential fiscal drag effect (of 4.5 p.p.) for this household type between 2019 and 2022, as well as recording the largest increase in nominal average wages among OECD countries over this period. However, other countries where nominal growth in the average nominal wage was particularly strong did not necessarily exhibit the largest potential fiscal drag. Of the 15 countries where the potential fiscal drag effect exceeded 1 p.p., only six – Türkiye, Luxembourg, Estonia, Lithuania, the United States and Iceland – were among the 15 countries with the strongest average annual wage growth over the same period.

Meanwhile, the potential fiscal drag effect was zero in Hungary and just 0.2 p.p. in Latvia and Poland, even though these countries experienced the strongest wage growth in the OECD between 2019 and 2022 after Türkiye and Lithuania. This is because Hungary, Latvia and Poland all have a very flat tax structure above 100% of the average wage for a single worker; as a result, the hypothetical increases in the average wage in 2019 would not have translated into a higher tax burden. This is illustrated by the graphical expositions of the tax burden in Chapter 4 of this Report.

### ***Single parent earning 67% of the average wage***

For a single parent earning 67% of the average wage, increases in nominal wages between 2019 and 2022 would generally have caused a much larger increase in the tax wedge in the absence of indexation and other tax policies than was seen for the single worker earning 100% of the average wage (Figure 2.4b). The average potential fiscal drag across the OECD for this household type was 3.5 p.p. and exceeded 4 p.p. in 15 countries. Between 2019 and 2022, the tax wedge for this household type increased in 22 countries and rose from 16.2% to 16.6% on average across the OECD in the period considered.

Potential fiscal drag for a single parent earning 67% of the average wage was much more sensitive to increases in nominal wages because of the broader range of instruments, such as tax credits and child benefits, to which this household type might be eligible, and the rate at which the value of these instruments declines as nominal wages increase around this income level. Of the fifteen countries where potential fiscal drag exceeded 4 p.p., ten were also among the fifteen countries with the strongest growth in the nominal average wage over the period. Meanwhile, in the countries where wage growth was lowest, potential fiscal drag was also low: of the nine countries where potential fiscal drag was below 1.0 p.p. for this household type, wage growth was slower between 2019 and 2022 than it had been between 2010 and 2019.

Slovenia is a notable exception to this latter tendency. Its average annual wage growth was 138% higher during the pandemic period than between 2010 and 2019 but potential fiscal drag for this household type was zero, reflecting in part the fact that the value of family benefits declines slowly with income and the additional general allowance for low-income groups phases out below 67% of the average wage.

### ***Combined results***

Looking at the results for both household types together, the list of the 15 countries where the potential fiscal drag is largest differs significantly between them. In Hungary, Poland and Latvia, potential fiscal drag was zero or close to zero for a single worker earning 100% of the average wage; for the single parent earning 67% of the average wage, the fiscal drag effect was 5.7 p.p. in Latvia, 6.2 p.p. in Hungary and 18.8 p.p. in Poland – the latter being by far the highest figure for this household type among OECD countries. Although these three countries have flat tax structures above the average wage, the tax wedge for the single parent increases rapidly with income below the average wage in each case.

Another notable difference is in the ranking of Canada, where potential fiscal drag for a single parent earning 67% of the average wage was 12.2 p.p., the second-highest among OECD countries, due to declines in child benefits, the goods and services tax credit and the provincial tax reduction with income. Potential fiscal drag was just 0.4 p.p. for the single worker earning the average wage.



For the single worker earning 100% of the average wage, there are only four countries – Canada, Costa Rica, Korea and Switzerland – where the tax wedge in 2022 was higher than the sum of the tax wedge in 2019 plus potential fiscal drag (shown by the combined height of the blue bar and the thin blue line). For the single parent earning 67% of the average wage, this was the case in six countries: Costa Rica, Japan, Mexico, Slovenia, Switzerland and the United Kingdom.

Because the structure of the tax wedge in 2019 across OECD countries was different to the structure of the tax wedge in 2022, it is not possible to compare the potential nominal fiscal drag effect with the tax wedge in 2022. Instead, the potential fiscal drag effect can be understood as being the upwards pressure that rising nominal wages placed on the tax wedge between 2019 and 2022. These results suggest that tax policies in most OECD countries, including inflation adjustments, were able to at least partially mitigate this pressure. However, it could also be the case that higher nominal average wages offset the impact of tax policies intended to reduce the tax wedge in OECD countries.

This analysis supports previous findings that low-income workers are particularly vulnerable to fiscal drag. The potential fiscal drag effect for a single parent earning 67% was significantly larger than for the single worker earning the average wage in almost every country, and there was a clear tendency for potential fiscal drag to be largest in the countries with the strongest nominal wage growth between 2019 and 2022. This is likely to have been an important reason why the average tax wedge rose for this household type across the OECD between 2019 and 2022, compounding the particularly adverse labour market outcomes that low-income and vulnerable workers experienced during the pandemic.

## Conclusion

This special feature examines indexation practices in OECD countries at a time when inflation rates are at their highest level for 30 years. Although average nominal wages grew strongly in most OECD countries between 2019 and 2022, they did not keep pace with inflation in 2022, resulting in a decline in real wages across the OECD. Compounding this loss of purchasing power, inflation increased tax burdens by eroding the real value of tax thresholds and benefits – an example of the phenomenon known as ‘fiscal drag’. Governments can use fiscal drag to increase revenues from labour taxation but doing so can have a significant impact on the transparency and distributional impact of taxes and transfers. Fiscal drag can be prevented to a large extent if the parameters of fiscal systems are adjusted for inflation, a mechanism known as indexation or uprating.

The chapter presents the results of a questionnaire circulated to OECD countries in July 2022 asking whether and how they adjust the taxes and benefits included in the *Taxing Wages* models in response to inflation. The responses to this questionnaire reveal significant variation between (and often within) OECD countries in terms of their indexation policies. Just under half of OECD countries automatically adjust their PIT systems to inflation, while a higher proportion automatically adjust SSCs and cash benefits. Among the countries that make automatic adjustments, most base these adjustments on changes in consumer prices, although a number of countries use wage indicators as the benchmark, especially for SSCs and cash benefits. The results of the questionnaire also provide insights into the timing and frequency of these adjustments: with most countries making adjustments on an annual basis, often based on lagged inflation data, OECD countries are particularly exposed to fiscal drag during periods of high inflation.

The special feature concludes by demonstrating the upwards pressure on tax burdens caused by recent increases in nominal average wages in OECD countries. The results underline the importance of indexing labour taxation to inflation in order to prevent fiscal drag from increasing tax burdens in OECD countries. The analysis also shows that the household type comprising a single parent earning 67% of the average wage is particularly vulnerable to fiscal drag induced by higher nominal wages. This is because they access a broad range of tax credits, benefits and exemptions, all of which are sensitive to changes in nominal incomes if parameters and thresholds are not adjusted to inflation.

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## Notes

<sup>1</sup> The cash benefits analysed in this chapter are limited to those transfers that are contained in the *Taxing Wages* models; the analysis may not cover all social protection benefits that a given country might provide. Further information can be found in the country chapters in Part II of this publication and the annex.

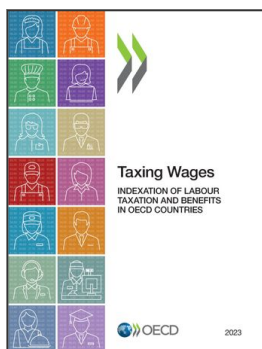
<sup>2</sup> As noted in Chapter 1 and the Annex of this Report, wage trends shown by the *Taxing Wages* models are not representative of all workers in the economy. This is because the wage measure used is restricted

to the sectors covered by sectors B-N in ISIC rev.4 and do not include non-standard forms of work, such as part-time or self-employment.

<sup>3</sup> The issues around linking pension payments to wage growth, as is done in some OECD countries, is beyond the scope of this chapter but is nonetheless relevant for indexation practices in the system as a whole as well as broader considerations of fiscal sustainability.

<sup>4</sup> In some countries, discrepancies exist between the approach between national and sub-national administrations. This occurs in Canada, where there is variation between Territories and Provinces in terms of whether indexation is discretionary or automatic, as well as the number of thresholds and values indexed, and whether the federal indexation measure is used. Ontario, which is considered the representative province for *Taxing Wages*, mirrors the federal system. There is also some variation in indexation practices between cantons in Switzerland (Zurich adjusts tax brackets and deductions on a biannual basis, for example) and between different states in the United States.

<sup>5</sup> This includes Belgium's capital region, which serves as the reference region for *Taxing Wages*.



From:  
**Taxing Wages 2023**  
Indexation of Labour Taxation and Benefits in OECD Countries

**Access the complete publication at:**

<https://doi.org/10.1787/8c99fa4d-en>

**Please cite this chapter as:**

OECD (2023), “Special feature: Indexation of labour taxation and benefits in OECD countries”, in *Taxing Wages 2023: Indexation of Labour Taxation and Benefits in OECD Countries*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/cc39f72a-en>

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