

Revenue Statistics and Economic Research Seminar

Hibernia Centre, Dublin Castle

3 September 2024

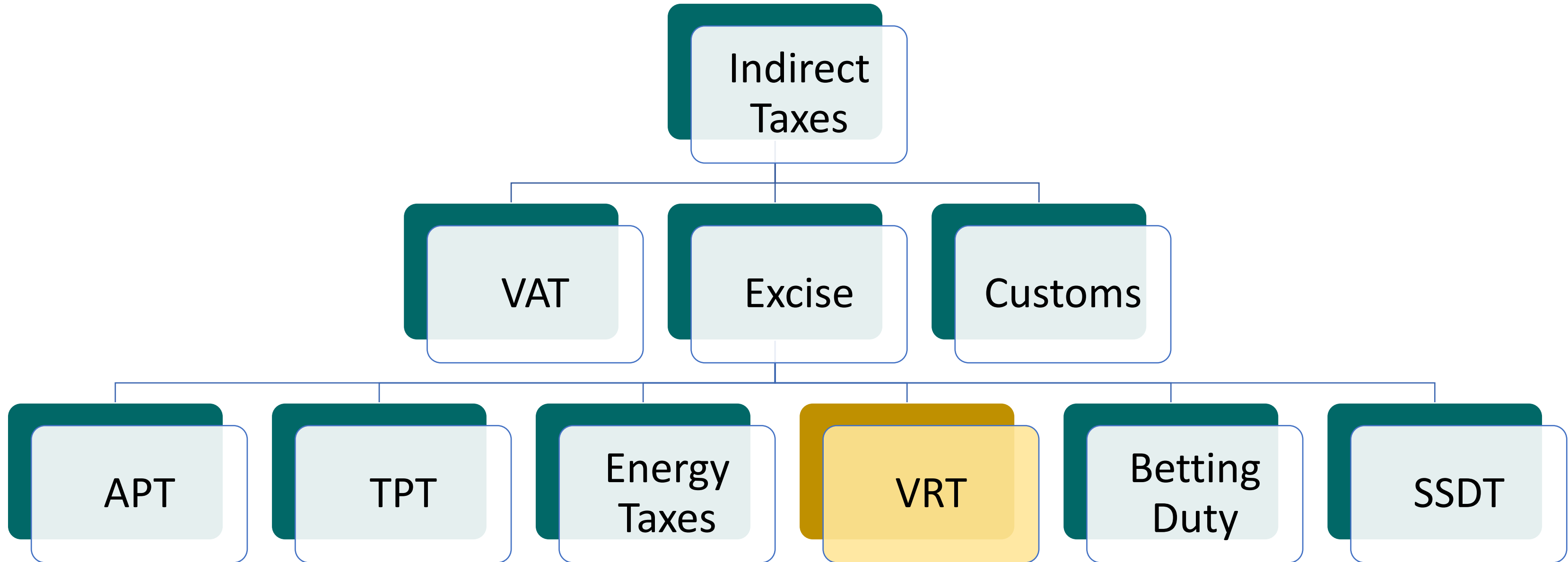


Revenue Statistics and Economic Research Seminar

Vehicle Registration Tax and Changing Behaviour

Conor O'Brien

Introduction



What is Vehicle Registration Tax?

- Tax assessed on a vehicle at the time of registration
- Calculation depends on the category of vehicle.

Category B

- Generally light commercial vans
- 13.3% of a vehicles value



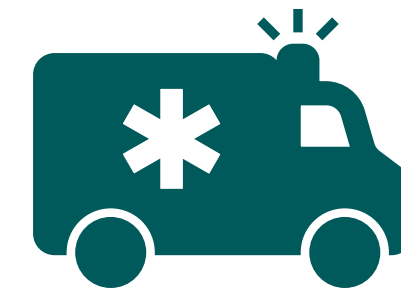
Category C

- Larger commercial vehicles, agricultural vehicles and buses
- Flat rate charge of €200 applies



Category D

- Special purpose vehicles including ambulances, fire engines etc.
- Nil rate of VRT



Category M

- Motor-cycles
- Rate of VRT based on engine capacity (cc)



Category A



- Passenger vehicles and certain special utility vehicles
- Based on the value of a vehicle and its emission level.
- Higher charges for higher emitting vehicles of the same value

$$\text{VRT} = \left(\text{Open Market Selling Price} \times \text{CO2 Emissions Band} \right) + \text{NOx Levy}$$

Objective:

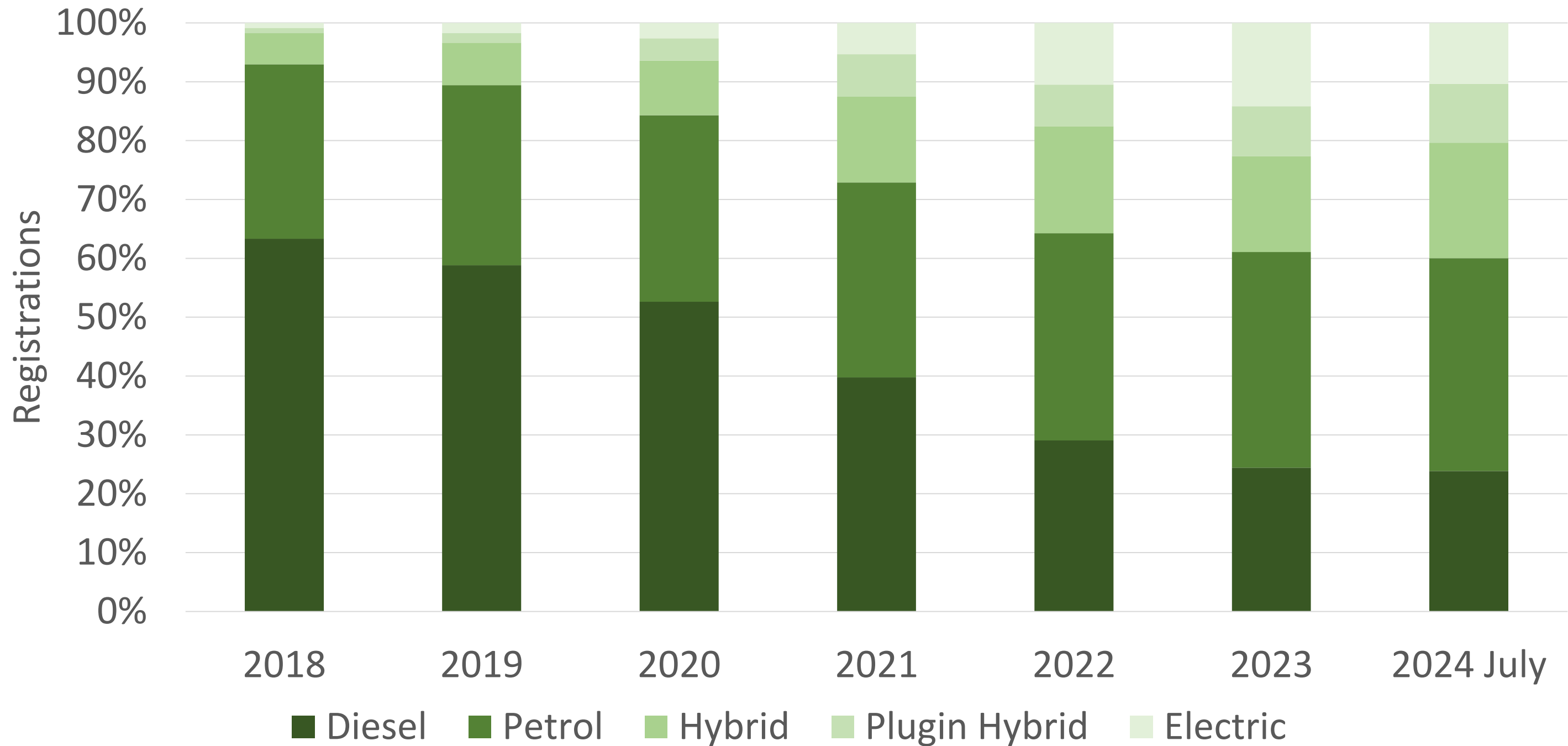
- **Examine the profile of Category A Registrations**
- **Using Revenue's VRT dataset**



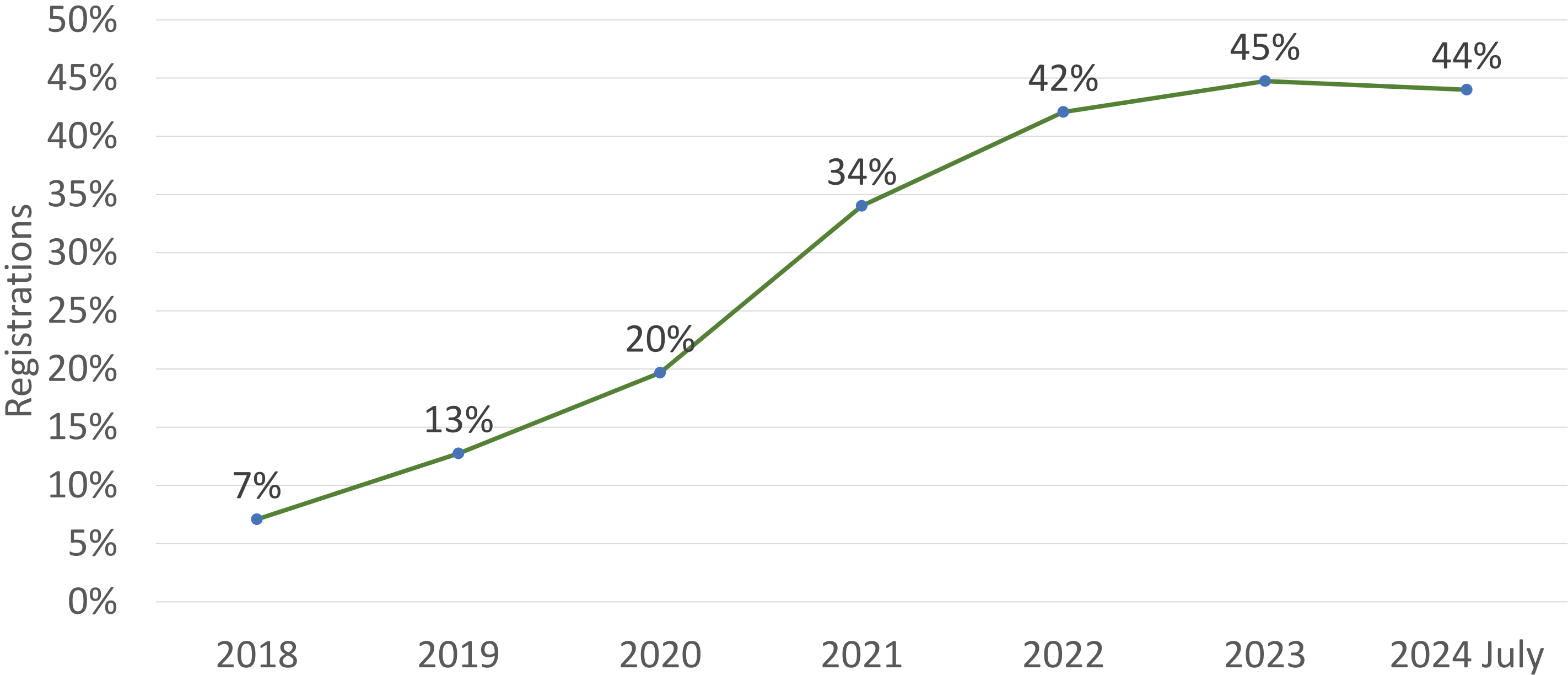
Category A Registration Profile



Category A Registration Engine Type



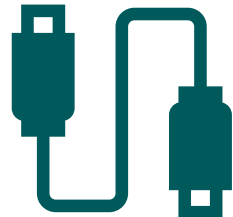
Hybrid and Electric Share of New Category A Registrations



Why the Change in Consumer Behaviour?



Climate awareness



2,500+ Charging Points



Climate Action Plan 2023 targets 1 million EVs



Battery Range



Running Costs



VRT & Grants

Policy



Grants:

- Up to €5,000 (€3,500 for 2024) for the purchase of new EVs
- Up to €600 (€300 for 2024) is provided for the installation of home charging unit

Taxation Measures:

- VRT relief of up to €5,000
- Lower rates VRT for less polluting vehicles – 7% if electric
- BIK exemption for company cars if electric
- Less motor tax.
- NOx Levy

VRT Bands

Band	CO2 Emissions (CO2 g/km)	VRT Rate 2021	VRT Rate 2022/23
1	0g/km up to and including 50g/km	7%	7%
2	More than 50g/km up to and including 80g/km	9%	9%
3	More than 80g/km up to and including 85g/km	9.75%	9.75%
4	More than 85g/km up to and including 90g/km	10.50%	10.50%
5	More than 90g/km up to and including 95g/km	11.25%	11.25%
6	More than 95g/km up to and including 100g/km	12%	12%
7	More than 100g/km up to and including 105g/km	12.75%	12.75%
8	More than 105g/km up to and including 110g/km	13.50%	13.50%
9	More than 110g/km up to and including 115g/km	14.25%	15.25%
10	More than 115g/km up to and including 120g/km	15%	16%
11	More than 120g/km up to and including 125g/km	15.75%	16.75%
12	More than 125g/km up to and including 130g/km	16.50%	17.50%
13	More than 130g/km up to and including 135g/km	17.25%	19.25%
14	More than 135g/km up to and including 140g/km	18%	20%
15	More than 140g/km up to and including 145g/km	19.50%	21.50%
16	More than 145g/km up to and including 150g/km	21%	25%
17	More than 150g/km up to and including 155g/km	23.50%	27.50%
18	More than 155g/km up to and including 170g/km	26%	30%
19	More than 170g/km up to and including 190g/km	31%	35%
20	More than 190g/km	37%	41%

Impact:

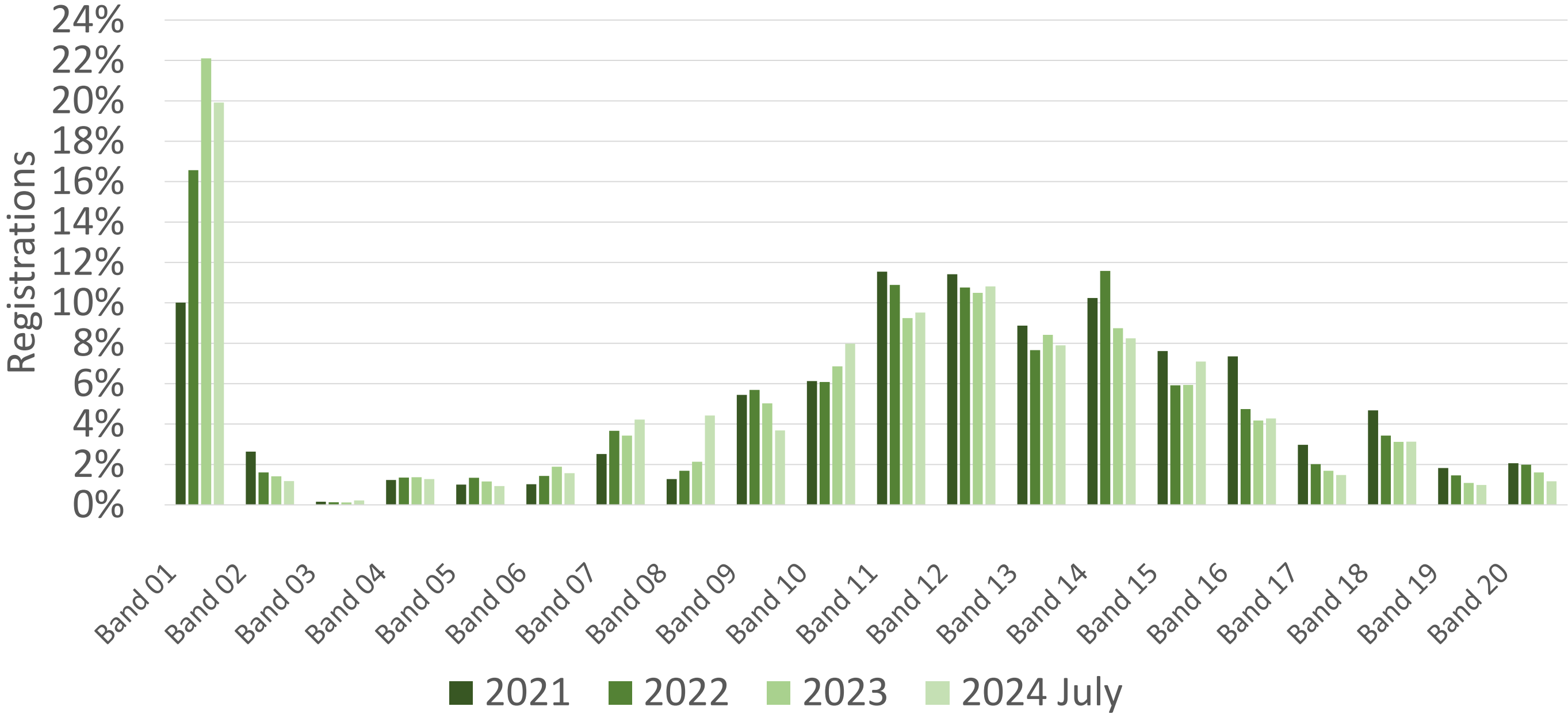
- Receipts



- Emissions

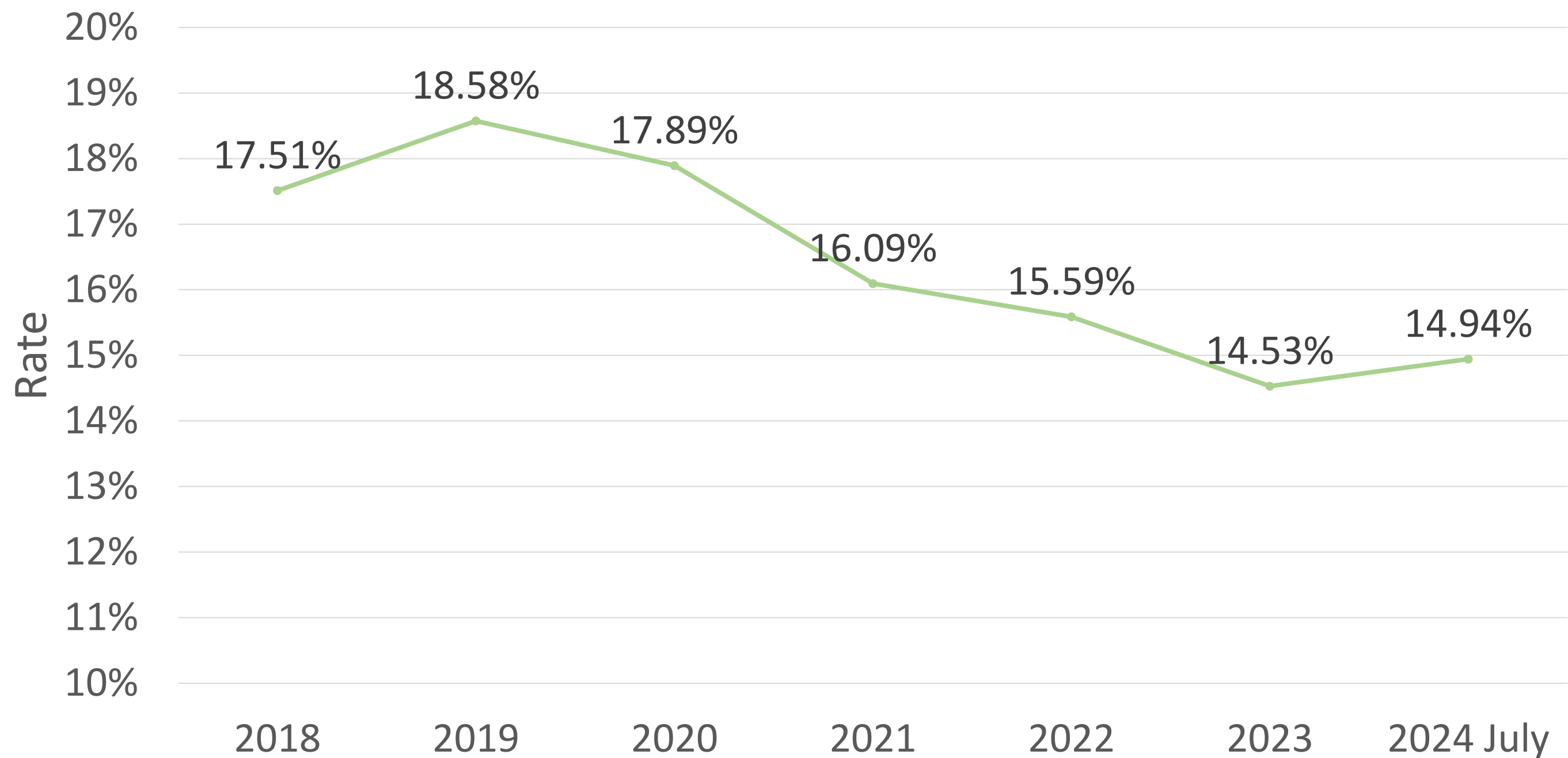


Category A Registrations by Band

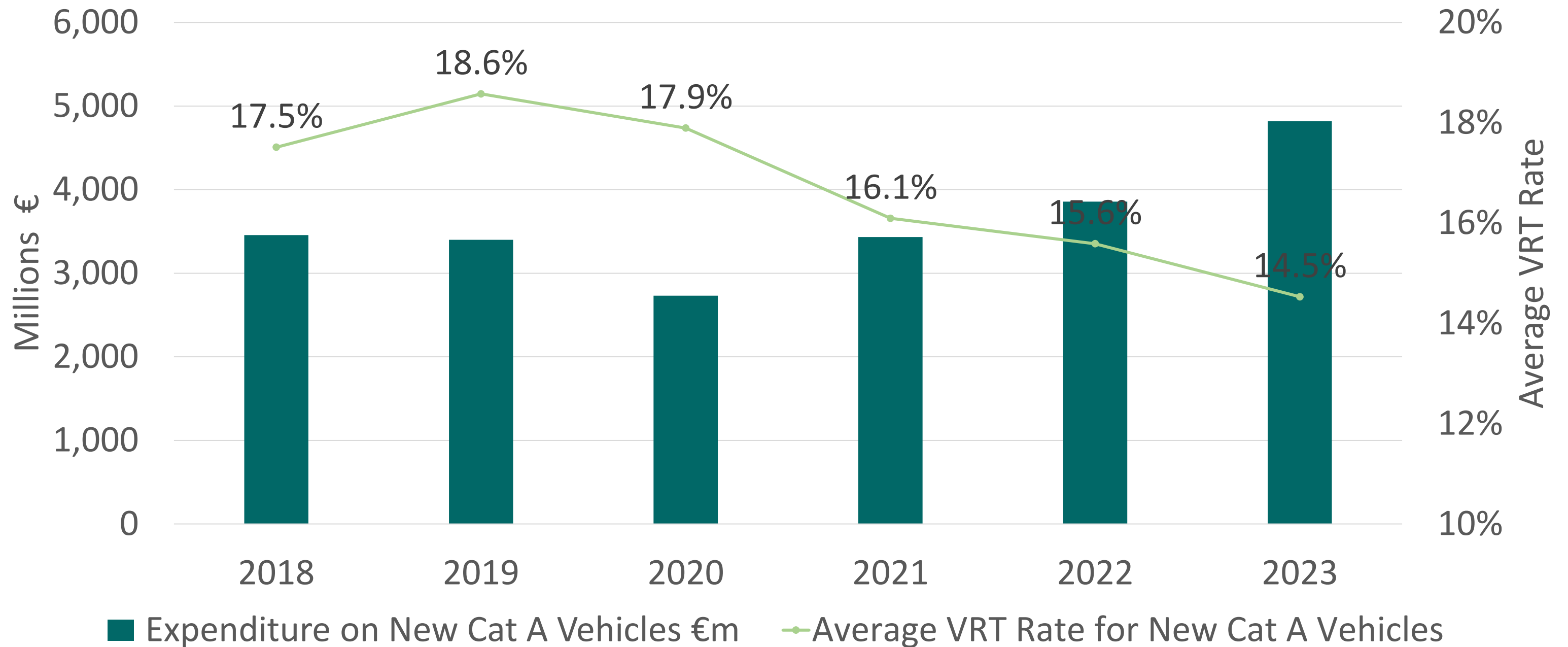


*July 2024

VRT Rate for New Category A Vehicles



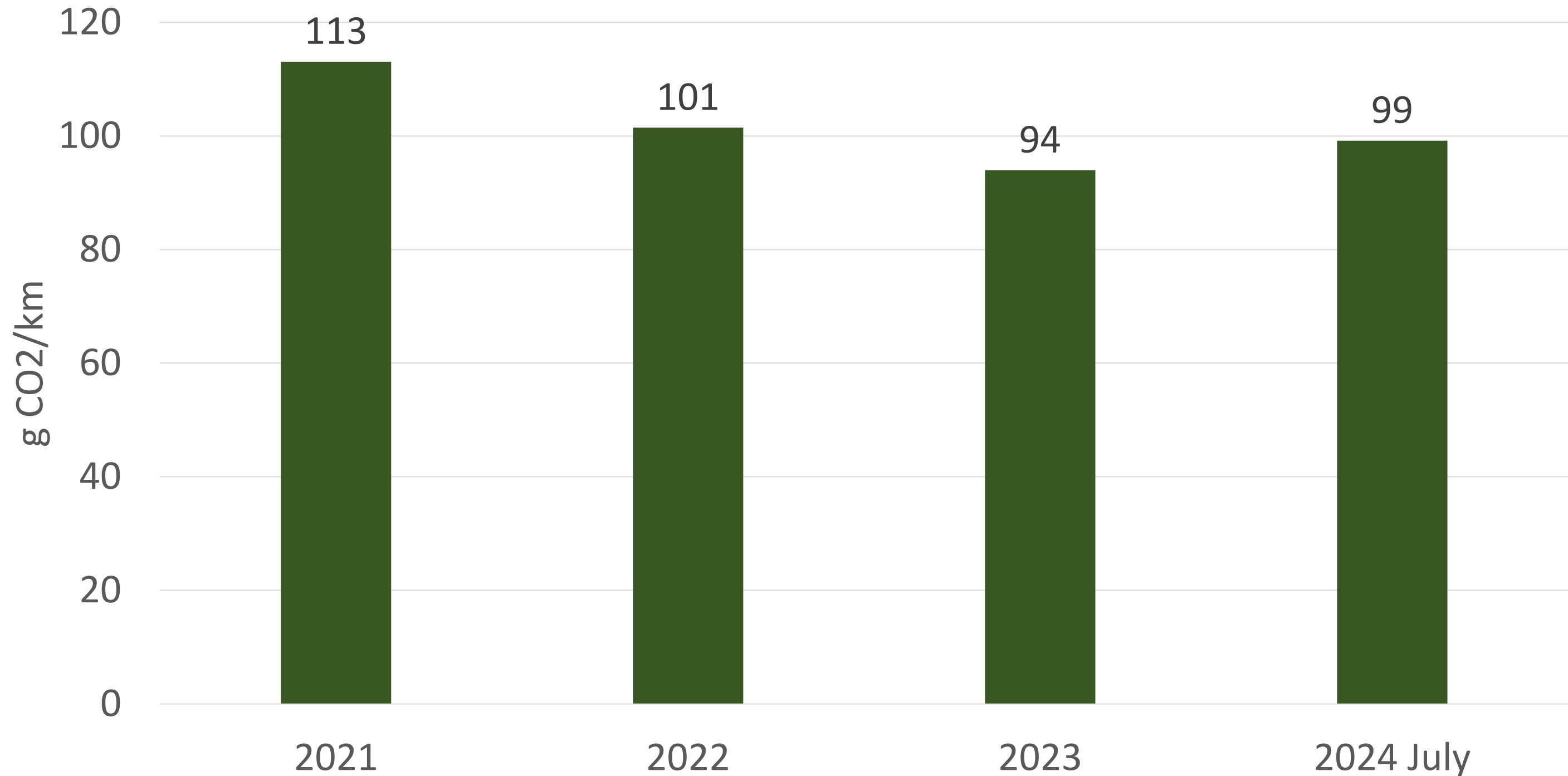
Average VRT rate relative to New Vehicle Expenditure



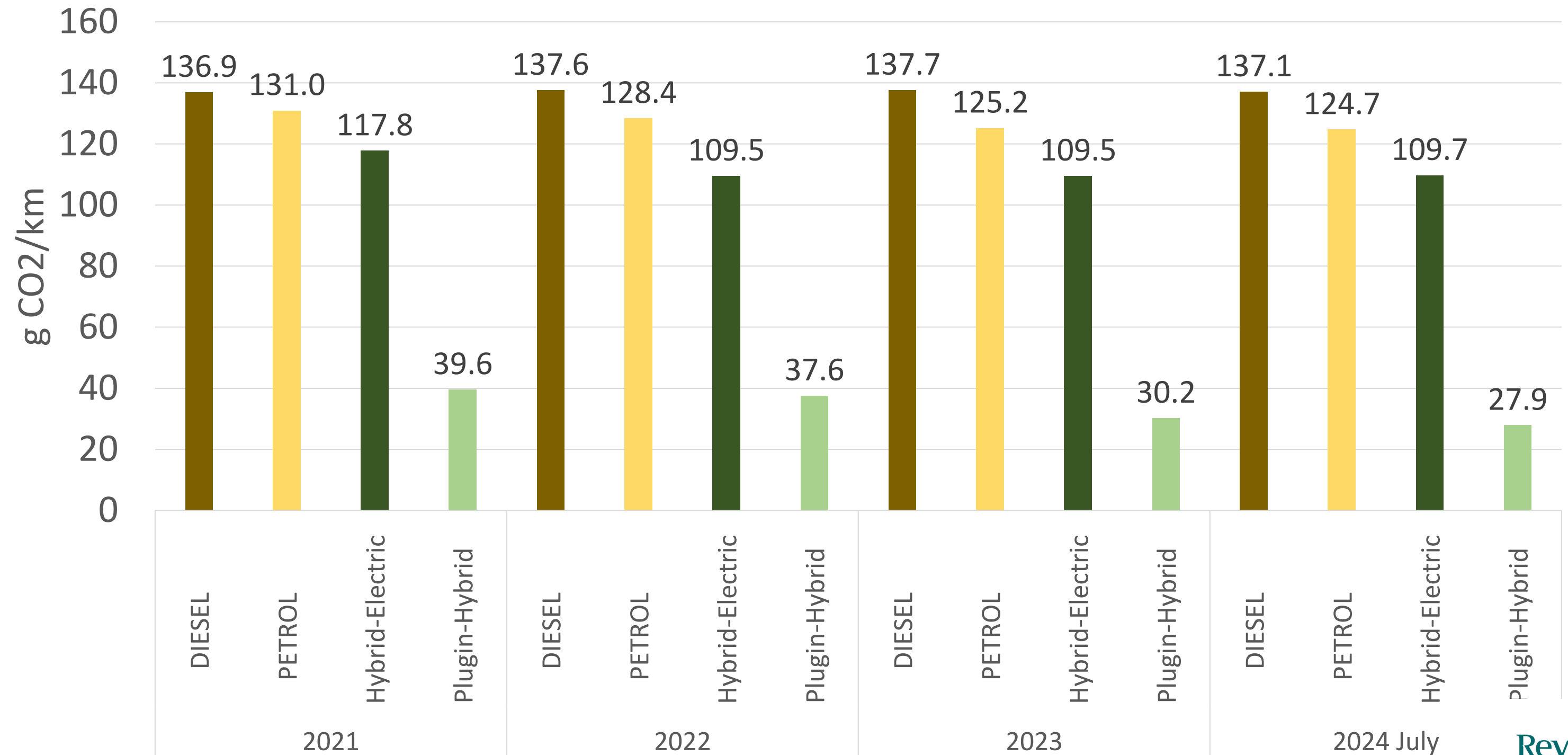
OMSP

- Average OMSP of a new vehicle up €10,000 since 2019
- Average price of a new EV higher than an ICE
- EVs cost more but have a lower VRT potential
- This impacts receipts


Trend in Mean WLTP Emission




Trend in Mean WLTP by Engine Type




National Fleet summary (Cat A)

 < 100,000 EVs

 ca 35 billion km

 35% more diesel   Twice the kms & higher average kms per year

 **Dublin** 25% less km on average
But 50% of EVs

CO2 Emissions



1l of petrol = 2.3kgs of CO2
1l diesel = 2.7kgs of CO2



one unit reduction
in grams of
CO2/km emissions



35kt equivalent CO2 reduction
14 million litres of fuel reduction



80g of CO2/km by 2030

Conclusions

- The composition of VRT registrations has significantly changed in recent years
- Under the current VRT structure this will impact Receipts
- Emissions have fallen
- However, emissions need to fall at a much more accelerated rate
- More EVs registrations required to meet 1 million target.

Thank You



Revenue Statistics and Economic Research Seminar

Corporation Tax: An Overview of Companies with no Tax Liability

Yvonne Hayden

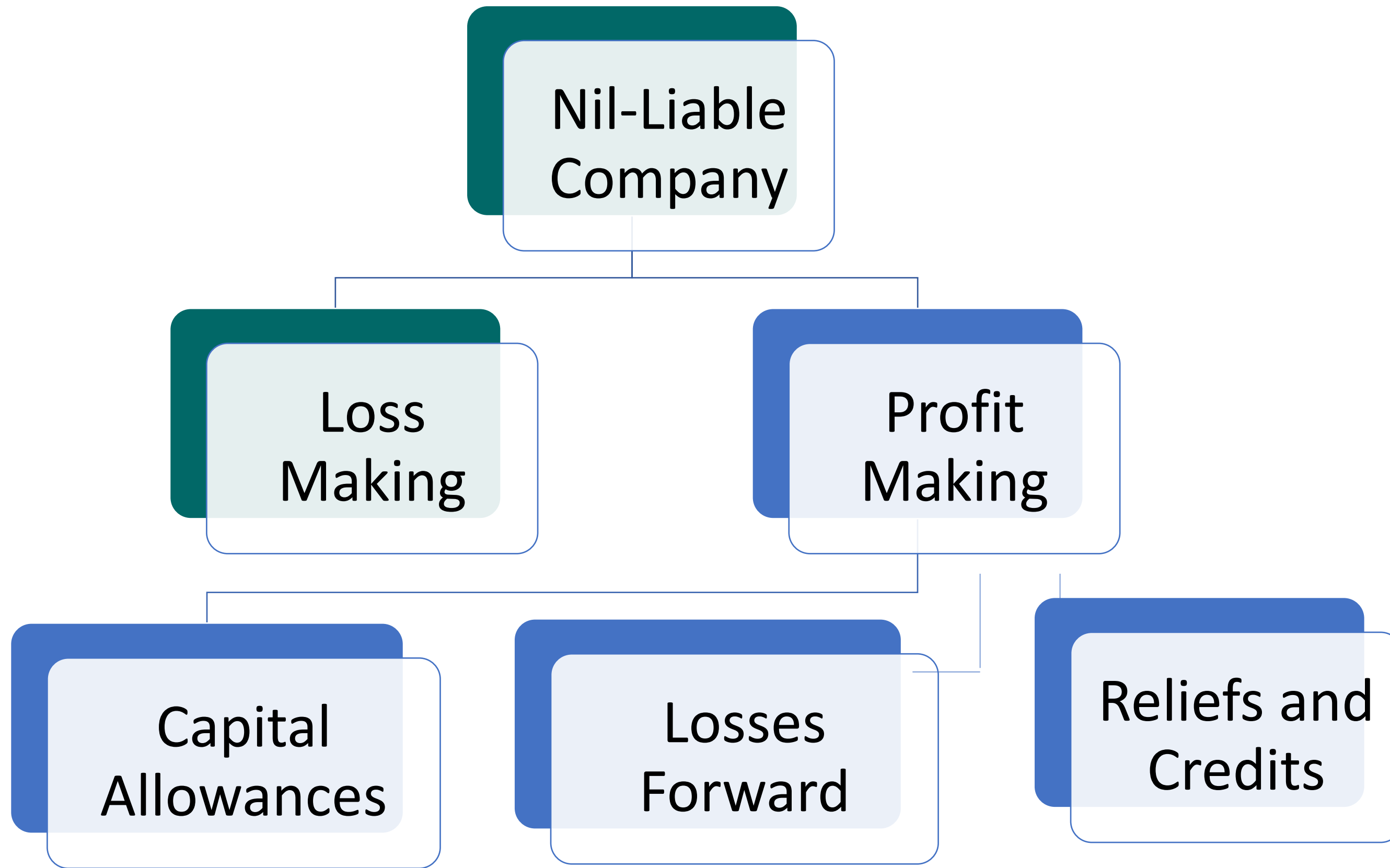
Introduction



- Motivation for presentation: population of nil liability companies is significant, limited analysis done to date – by Revenue or internationally – in respect of this population
- Presentation will cover:
 1. What the CT1 data can tell us about their behaviour
 2. Labour market characteristics
- In 2023, Corporation tax was the **2nd** biggest tax head in the country with **€23.8 billion** in net receipts transferred to the Exchequer, equivalent to **27% of total tax receipts** in the year.
- A lot of analysis to date on large payers/concentration, focus of today is quite different...

Caveats

- Results presented are preliminary and highlight the analysis that can be done using administrative datasets.
- All analysis has been done at a company level and not on a group level.



Count of Companies Filing a CT1 Tax Return:	2017	2018	2019	2020	2021	2022
All Companies	160,226	165,113	164,427	180,357	191,226	201,061
Nil- Liable Companies	98,276	98,352	95,254	104,963	106,600	112,162
Nil-Liable Percentage of Total	61%	60%	58%	58%	56%	56%

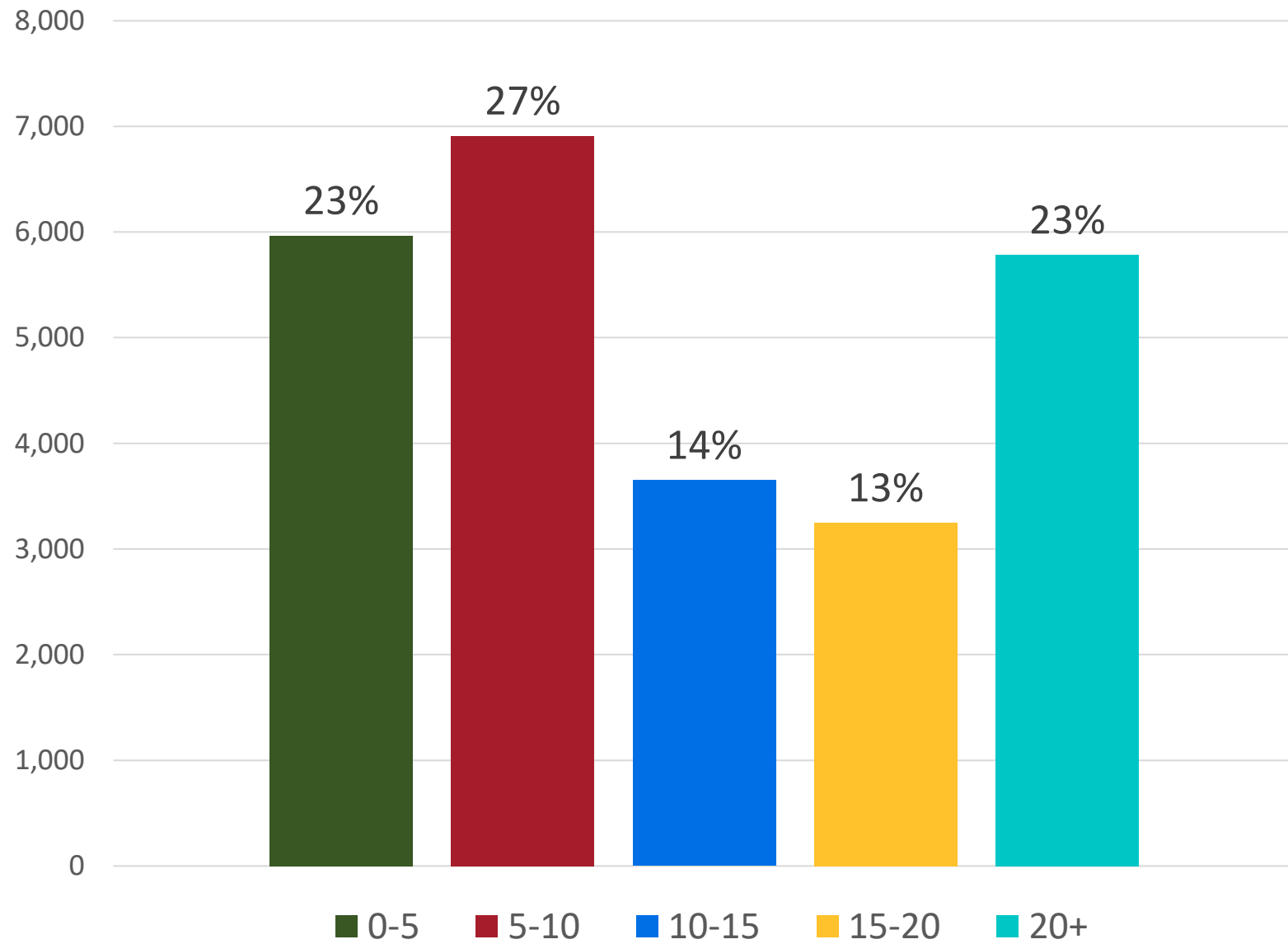
Features of Nil Liable

Breakdown of Nil-Liable	2017	2018	2019	2020	2021	2022
Loss Making	74%	74%	74%	75%	75%	77%
Profit Making	26%	26%	26%	25%	25%	23%

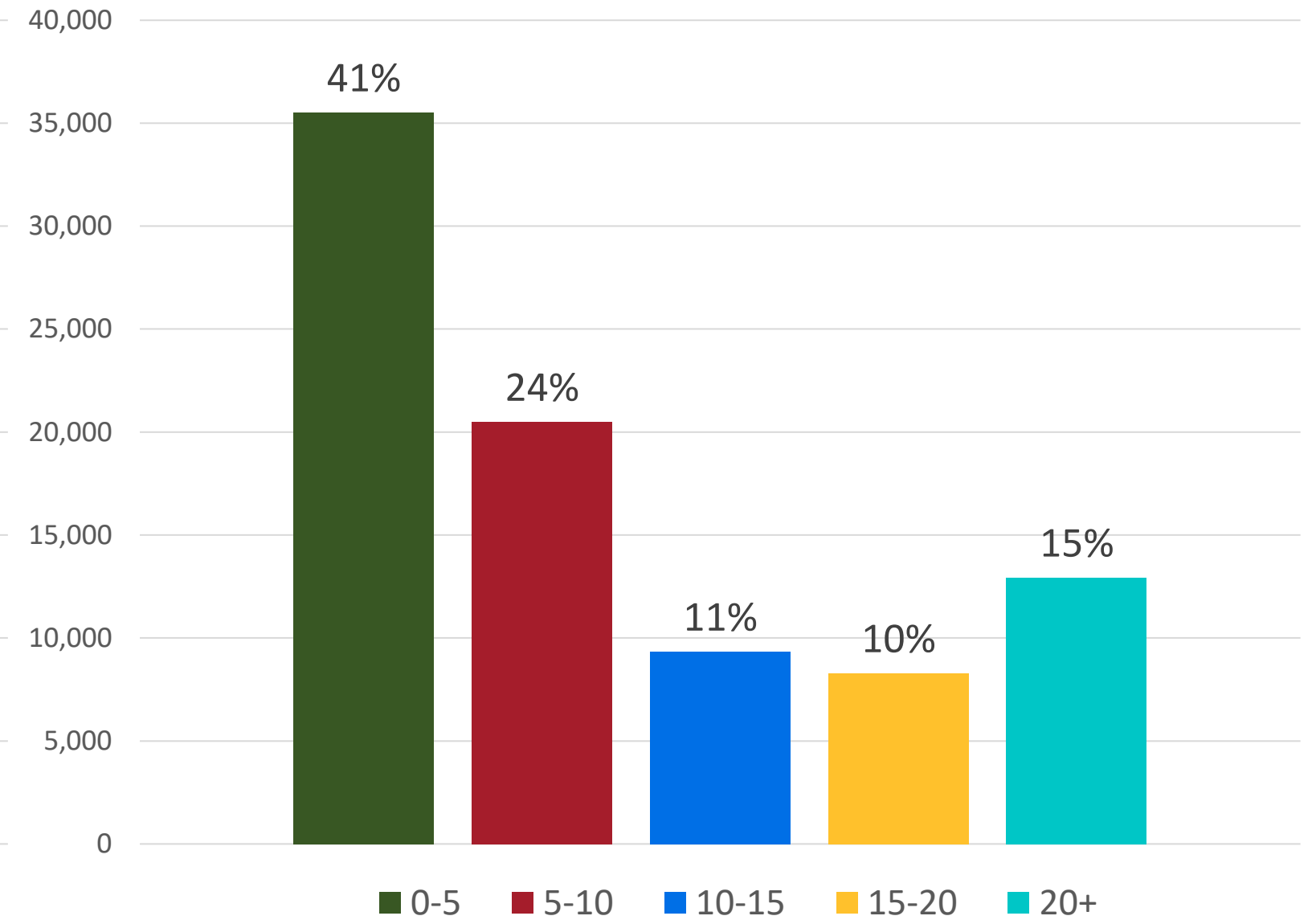
Of those who are profit making: 7% were Foreign Owned Multinationals and 92% were Domestic Companies in 2022. The remainder were Irish Owned Multinationals.

Age of Loss- and Profit-Making Companies: 2022

Distribution of Profit Making Companies By Age: 2022

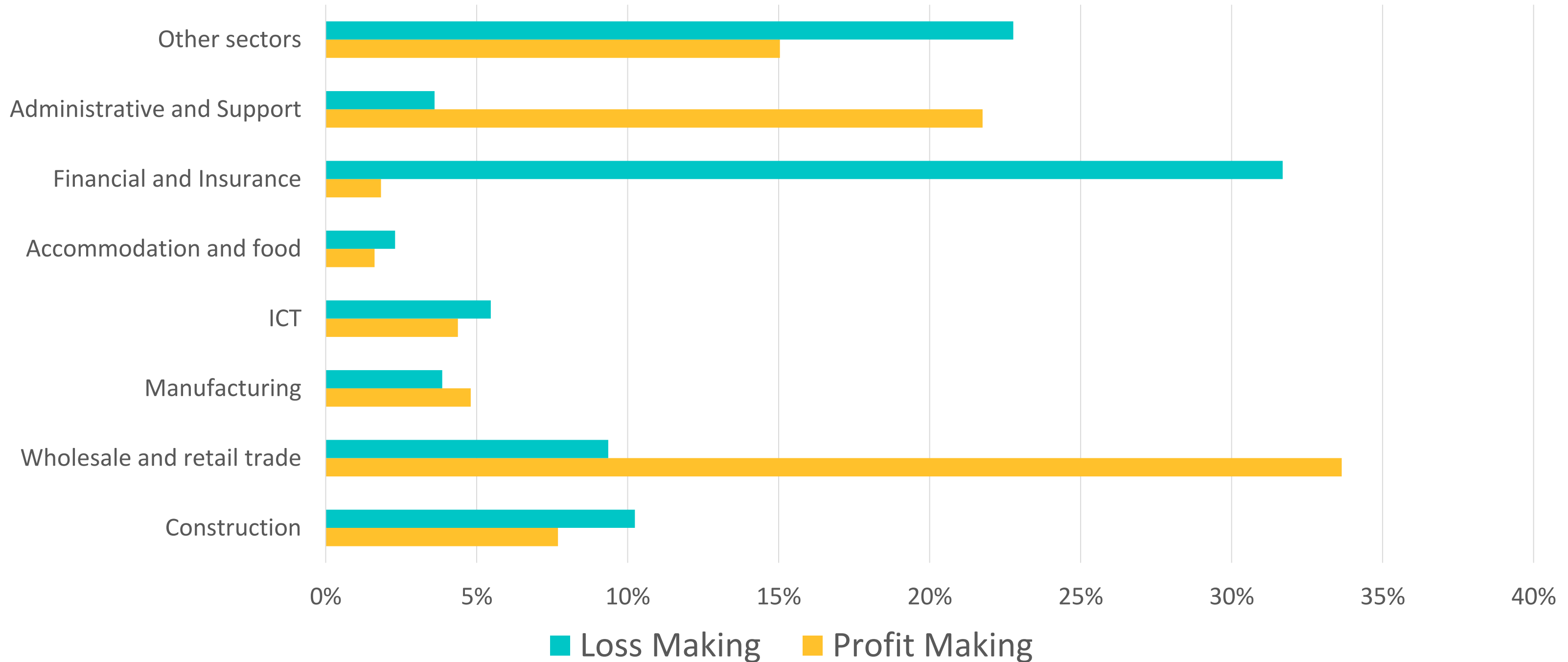


Distribution of Loss Making Companies By Age: 2022



Loss Making Companies are typically younger

Consistent Nil-Liable Companies: 2017-2022



18,500 Consistent Nil-Liable Companies: Finance and Insurance is the most consistent loss-making sector.

Gross Trading Profits: €m	2020	2021	2022
Nil-Liable Companies: Positive Profit	€24,251	€26,853	€25,791
All Companies	€199,261	€256,887	€317,449
Percentage (Nil Liable Profit)	12%	10%	8%

Foreign multinationals account for 57% of Gross Trade Profit, with Domestic companies explaining 27% of trading profits in 2022.

Number of Nil-Liable Companies with Positive Gross Trading Profit	2020	2021	2022
Foreign Owned Multinational	1,964	2,578	1,781
Irish Owned Multinational	360	292	380
Domestic	23,597	23,286	23,393

Simplified Step Through of the CT1 Tax Return: For Profit Making Companies

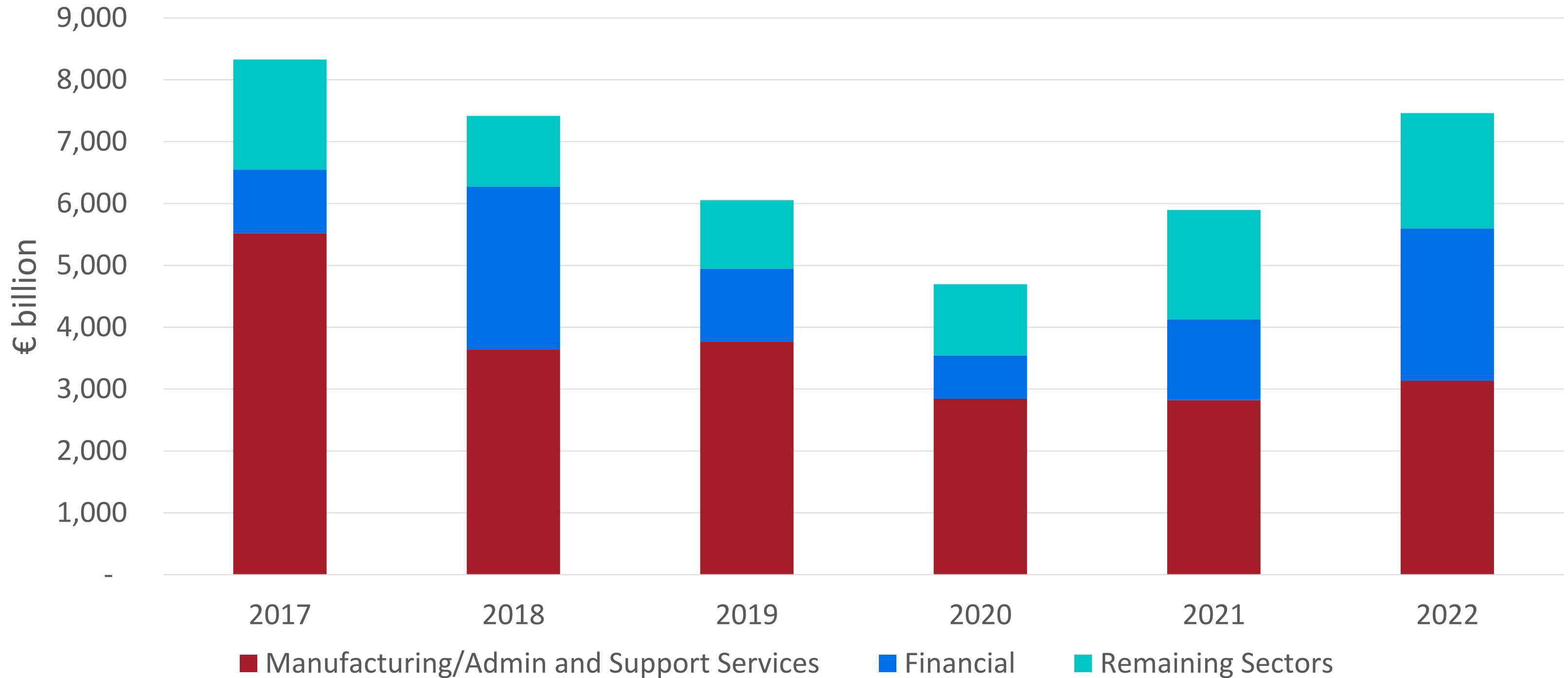
€M	2020	2021	2022
Gross Trading Profits	24,251	26,853	25,792
Total Deductions	21,770	23,982	22,929
of which: Capital Allowances used	14,124	16,027	12,703
of which: Trade loss forward used	4,694	5,897	7,462
Taxable Income	2,322	2,749	2,879
Amount at 12.5%	2,188	2,671	2,738
Amount at 25%	133	78	141
Amount at 33%	0	1	0
Gross Tax Due	307	354	377
Reliefs, Credits and Refunds used	-760	- 997	-1,330
Tax Paid	-453	-644	-952

In 2022, 25,544 companies earned Gross Trading Profit of €26bn but only 4,229 companies had Taxable Income

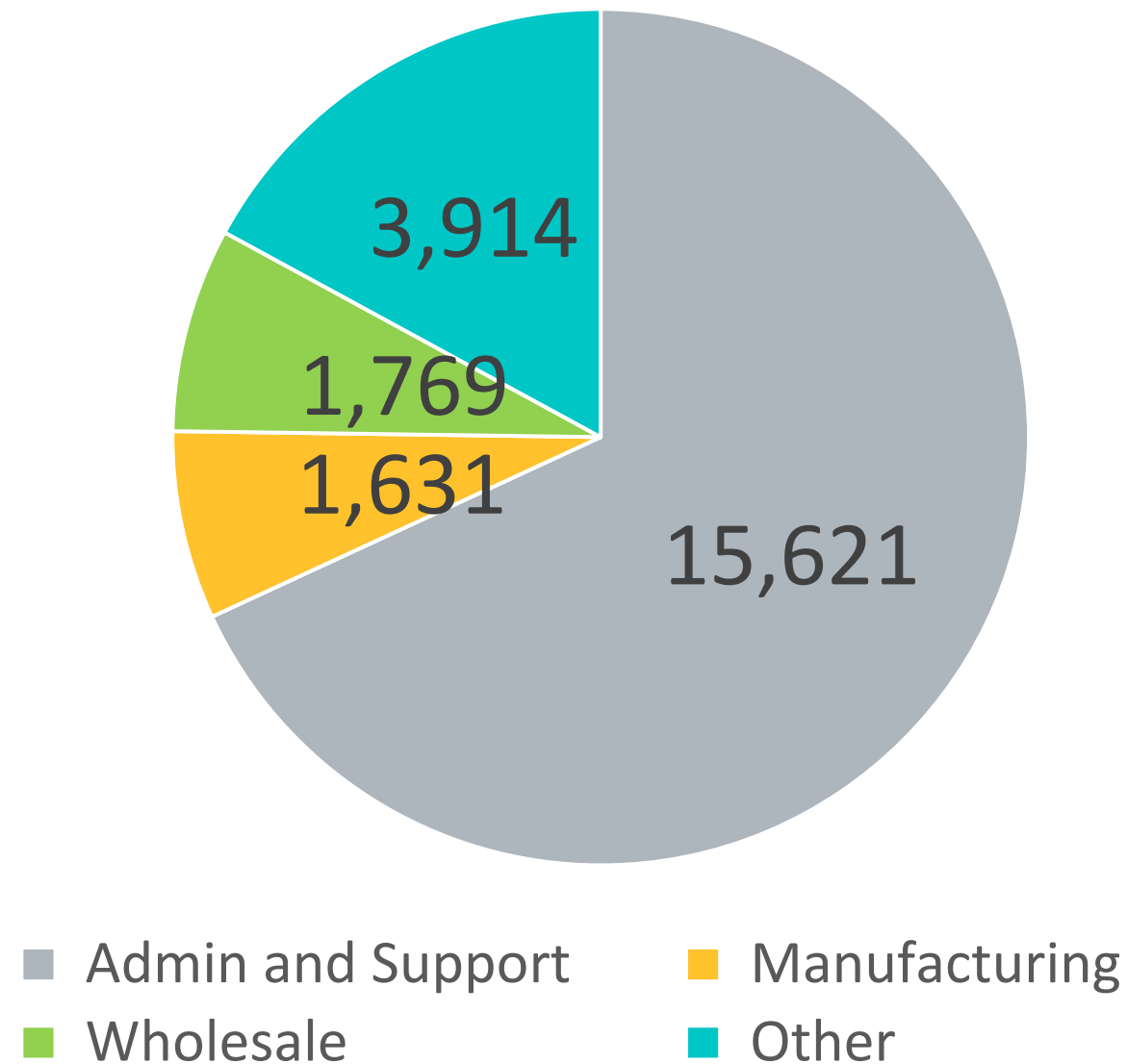
Capital Allowances & Losses Forward

- A company can reduce its profit subject to tax by claiming **capital allowances** on capital expenditure it incurs on certain types of business assets and premises.
- Over the six-year period, nil-liable CT companies used capital allowances averaging **€11bn** a year, which helped to reduce their taxable income. These companies were mainly in the **Manufacturing** and **Admin and Support services** sector and can be classified as large companies.
- **Losses forward** which are used by companies to also reduce their taxable income can arise due to **losses** that occurred in a previous accounting period and have been carried forward to this accounting period. These losses can be carried forward indefinitely. Losses forward includes **unused plant and machinery (tangible) capital allowances** from previous periods.
- The **Manufacturing/Admin and Support Services** sectors and the **Financial and Insurance** sector were the largest users of losses forward.

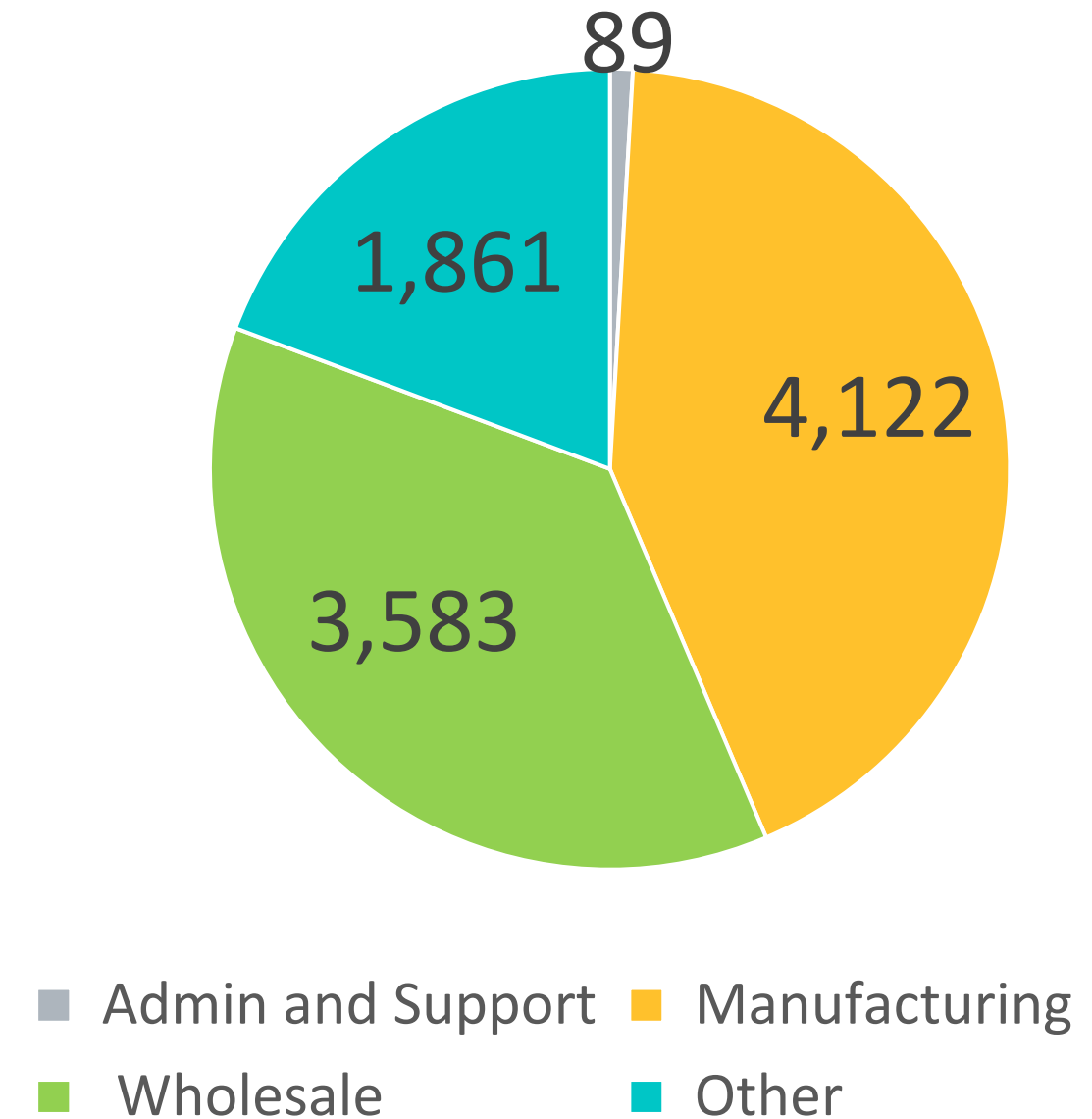
Losses Forward Used: By Sector



Nil Liable: Plant and Machinery
Claimed: €m:2022



Nil Liable: Intangible Claimed: €m:2022



86,608 Loss Making companies claimed capital allowances of €5bn in 2022, while 25,544 profit making companies claimed €27bn in capital allowances.

Employment Analysis

	2020	2021	2022
Employment of all companies	2,337,512	2,568,954	2,850,389
of which: nil Liable	704,716	667,295	682,630
Earnings :€m : 000's	61,097	71,093	80,681
of which: nil Liable : 000's	17,928	19,139	21,551
Other Taxes: €m : 000's	21,398	25,581	28,921
of which: nil Liable : 000's	5,396	5,457	6,915
Share of Employment	30%	26%	24%
Share of Earnings	29%	27%	27%

Employment Analysis: By Sector

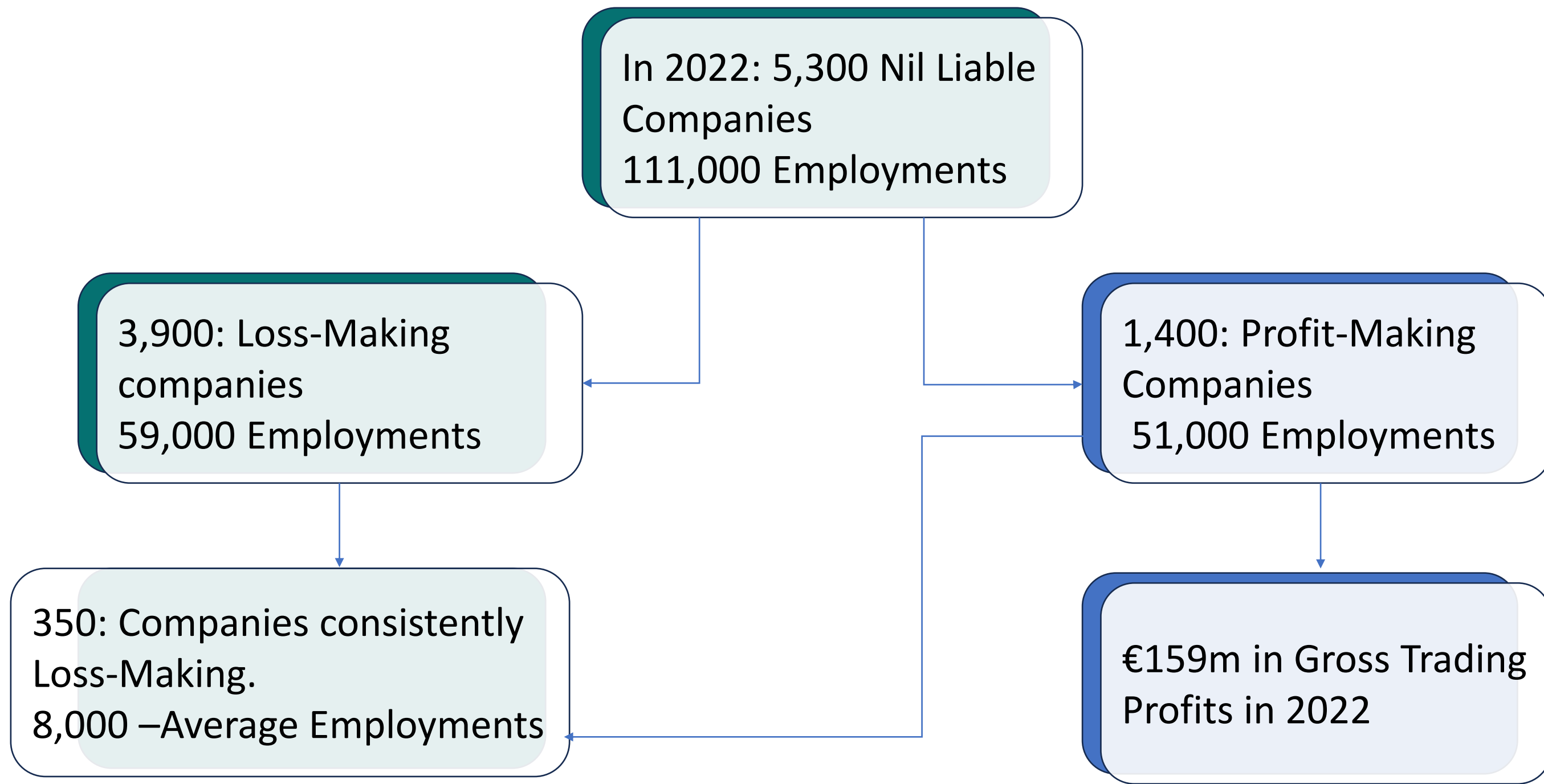
Year	2020	2021	2022
All CT Liable: Manufacturing/Professional and Admin Services	681,561	742,181	814,344
of which: Nil liable	193,058	191,311	226,849
<i>Share - Nil Liable</i>	<i>28%</i>	<i>26%</i>	<i>28%</i>
All CT Liable: Accommodation & Food	249,844	296,113	373,324
of which: Nil liable	117,763	90,797	111,140
<i>Share - Nil Liable</i>	<i>47%</i>	<i>31%</i>	<i>30%</i>
All CT Liable: ICT	143,933	162,556	176,495
of which: Nil Liable	54,225	57,366	61,198
<i>Share: Nil Liable</i>	<i>38%</i>	<i>35%</i>	<i>35%</i>

Median wage: 2022: €	Liabe	Nil Liabe
Wholesale and retail trade	20,577	18,510
Accommodation and Food	10,296	9,465
Information and Communication	38,666	36,800
Construction	24,205	22,731
Finance and Insurance	35,955	30,132
Manufacturing	25,499	22,620

For the Whole Economy in 2022: Earnings in companies with a positive tax liability were 6% higher than nil-liable companies.

Spotlight: Accommodation & Food

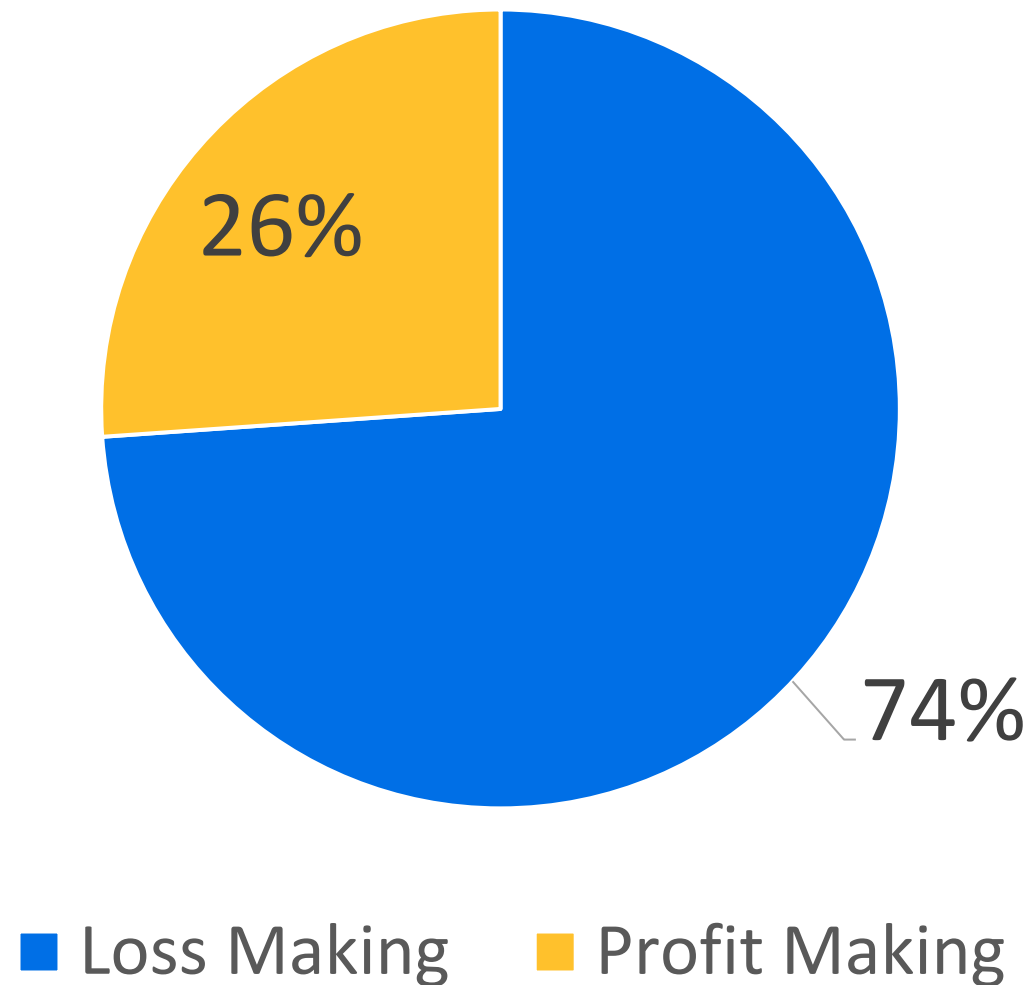




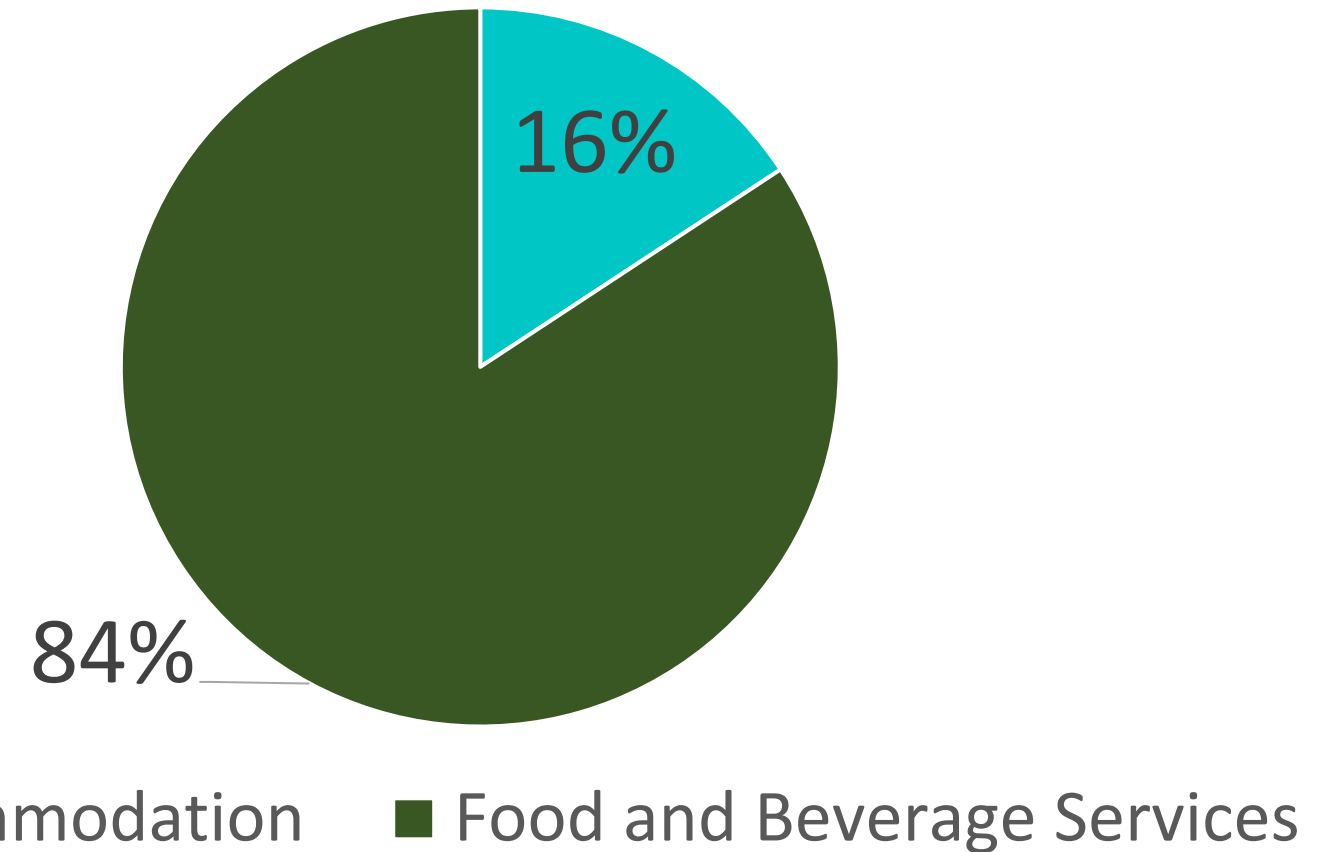
- **Question: How can this sector sustain employment of 111,000 in 2022 when the majority of the companies are loss making?**

Characteristics of Accommodation & Food: 2022

Nil-Liable Companies:2022



Breakdown of Loss Making Companies:
by Subsector:2022



74% of companies in the sector were loss makers employing 59,000 people – mainly in the Food and Beverages Sector.

Some reasons include....

- **Among the Profit-making companies: Employment 51,000 in 2022.**
- The sector is a user of trade losses forward, with €79m in 2022. Many of these companies are able to carry forward losses and write them off against their gross trading income.
- Many companies in the sector availed of tangible capital allowances worth €60m and these were used to reduce their gross trading profit.

Some reasons include..

- **Among the loss-making companies in the sector: Employment 59,000 in 2022.**
- The company may have cash reserves that it could use to continue operations for a certain period.
- State supports – Employment Wage Subsidy Scheme and Debt Warehousing Scheme.
- An entity may be loss making within the Accommodation and Food sector, but it might be supported by a parent company in another sector and operate by way of loans etc.
- Sometimes there may be a loss-making entity in a group, but another entity in the group might be very profitable – the loss-making entity might be required for some strategic importance to the group (i.e. due to market share/reputation/key customer contracts etc)
- Company structures can result in the presence of holding companies in the sector.

Some other reasons include..

- The loss per the financial statements may include costs such as depreciation which aren't real costs i.e. nobody is paid for depreciation and if this was added back in, the company would be in profit.
- Wages can also be all or part included in the Cost of Sales which is subtracted before arriving at trading profit if the costs are directly related to making a product.
- It can also be the case that employment is often recorded in one economic sector but the profit may be recorded under a different entity in another economic sector.

Conclusions

- 56% of CT companies are nil liable.
- Of those nil liable companies -77% are loss making with most in the Finance and Insurance sector.
- Of those nil liable – 23% are profitable. Generated €26bn in gross trading profits in 2022. Eliminated by use of capital allowances and losses forward.
- 4% of nil liable companies had a gross liability – Eliminated by reliefs, credits and refunds.
- Nil liable companies responsible for 24% all employments among CT companies.
- Median wage in companies with positive liability was 6% higher compared to nil liable companies.

Thank You

Income Bunching in Ireland

Presenter: Alan McLoughlin

Coauthors: Gavin Murphy, Larissa Vella

- Introduction
- Income Bunching Methodology
- Results
- Conclusion & Future Areas of Research

- Policymakers face trade-offs between raising tax revenue and potential economic distortions, including adjustments to labour supply and non-compliance activity.
- Understanding taxpayer's responsiveness to income tax changes is key in supporting a fair and efficient tax system.

A bunch of insights

- Taxpayer bunching analysis is one approach used to analyse individuals' responsiveness to changes in taxes.
- Certain taxpaying cohorts have incentives to manage their income to ensure it is located below policy thresholds (e.g. Standard Rate Cut-off) where a higher tax rate would apply.
- Analysis of their behaviour can provide important insights (e.g. Elasticity of Taxable Income (ETI) estimates)
- **Research in Ireland:** Acheson et. al (2018), Hargaden & Roantree (2018), Hargaden (2020)

1. We focus on self-assessed taxpayers in 2022 and investigate the extent they respond to the tax changes focusing on behaviour at the Standard Rate Cut-off Point.
 - consider how responses differ by taxpayer type (i.e. single, married two earners etc.) and by sector.
2. We investigate how taxpayers respond (bunch) using allowances, deductions & reliefs.

- **Standard Rate Cut-off Point:** Amount of income you can earn where you pay tax at lower rate of 20%.
 - Income in-excess of this is taxed at 40%.

Table 1. Standard Rate Cut-Off Points, 2022

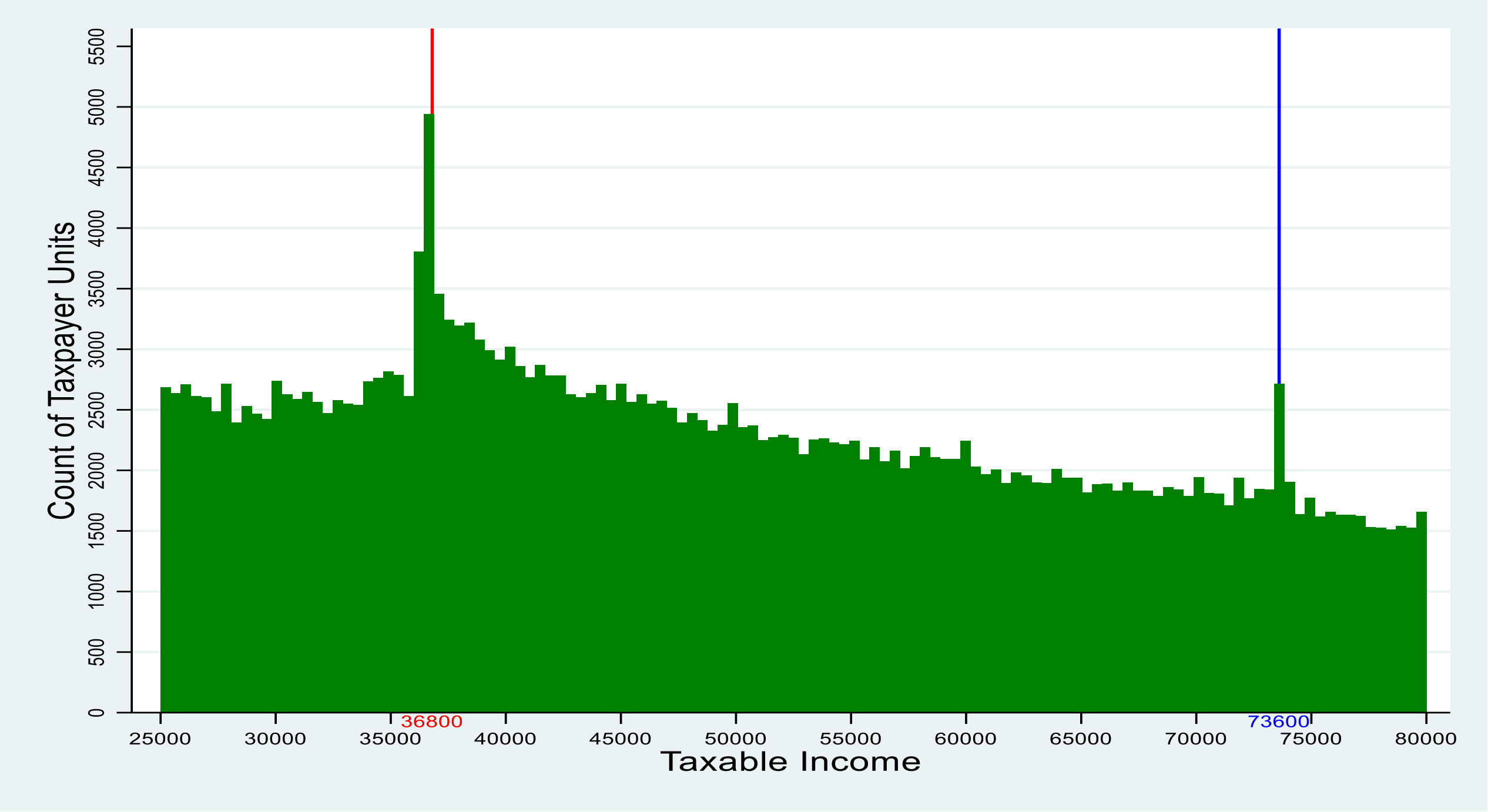
Standard rate	20%
Max rate	40%
Single Person	€36,800
Married couple, one income	€45,800
Married couple, two incomes	€73,600

Income Tax Returns: Self-Assessors

- A chargeable person is someone who is liable to file an income tax return and calculate tax under self-assessment.
- Chargeable persons submit an Income Tax return annually (Form 11).
- Filers must distinguish between types of income earned from, for example, self employment, rental income, foreign income, etc.
- Filers must also disclose any allowances, deductions and reliefs.

Total Gross Income	<i>Trading Income, Schedule E PAYE Income, Rental Income, etc.</i>
Less Allowances & Deductions	<i>Machinery & Plant Capital Allowance, Approved Nursing Home Expenses, Industrial Buildings and/or Farm Buildings Allowance, etc.</i>
Less Reliefs & Retainable Charges	<i>Pensions Contribution Relief, Employment & Investment Incentive Relief, Permanent Health Benefit, etc.</i>
Equals Taxable Income	

Distribution of Taxable Income



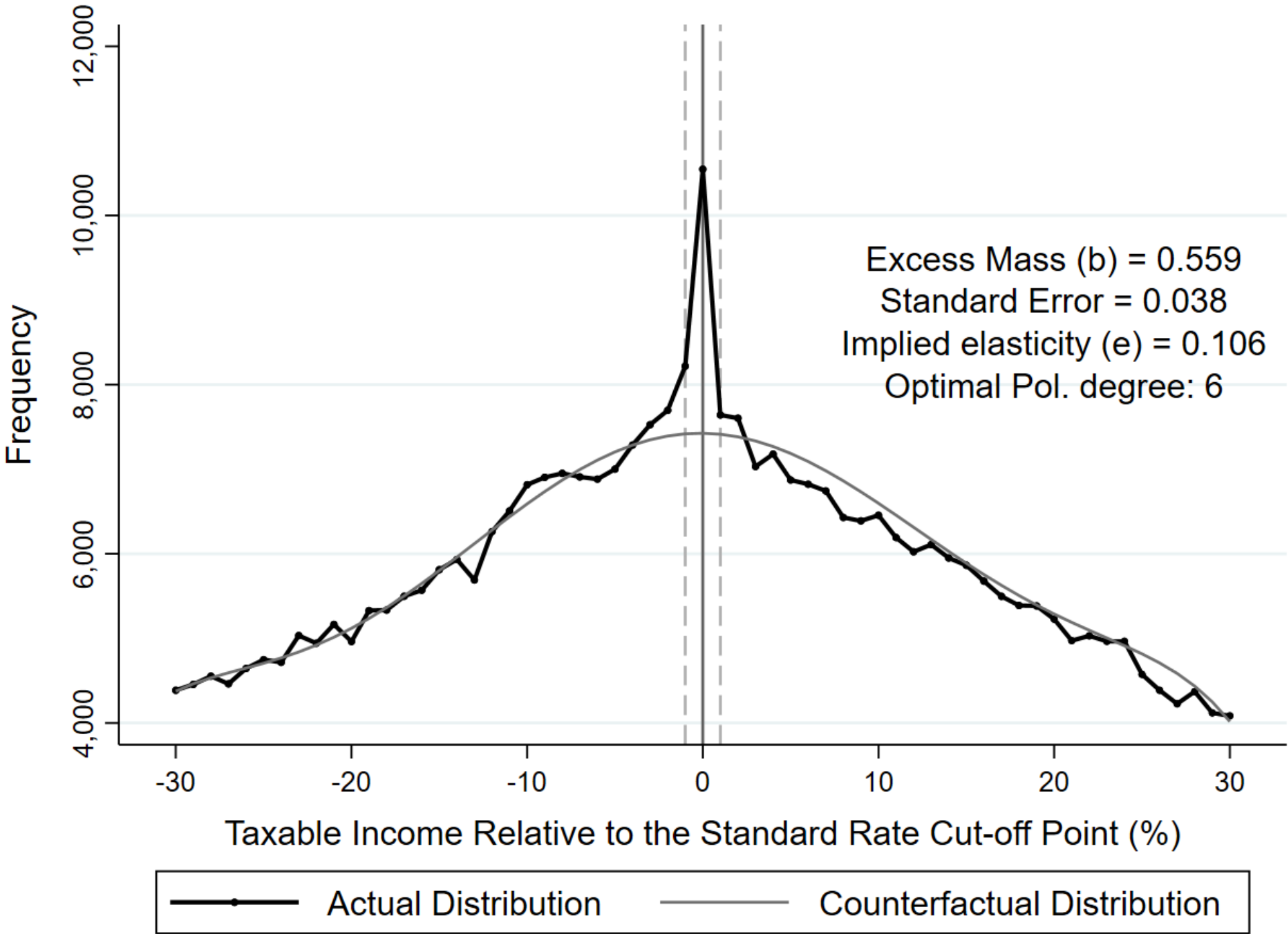
Income Bunching Methodology

- Interested in taxpayers who reduce their earnings from above the standard rate threshold to below the threshold.
- Identified by comparing observed income distribution with an estimate of where taxpayers would have located in that interval if they had not adjusted their earnings (i.e. counterfactual distribution). Saez (2010) and Chetty (2011)
- Counterfactual distribution estimated based on polynomial fit of the income distribution. Bounds of bunching zone determined by following approach in Bosch et al. (2020)

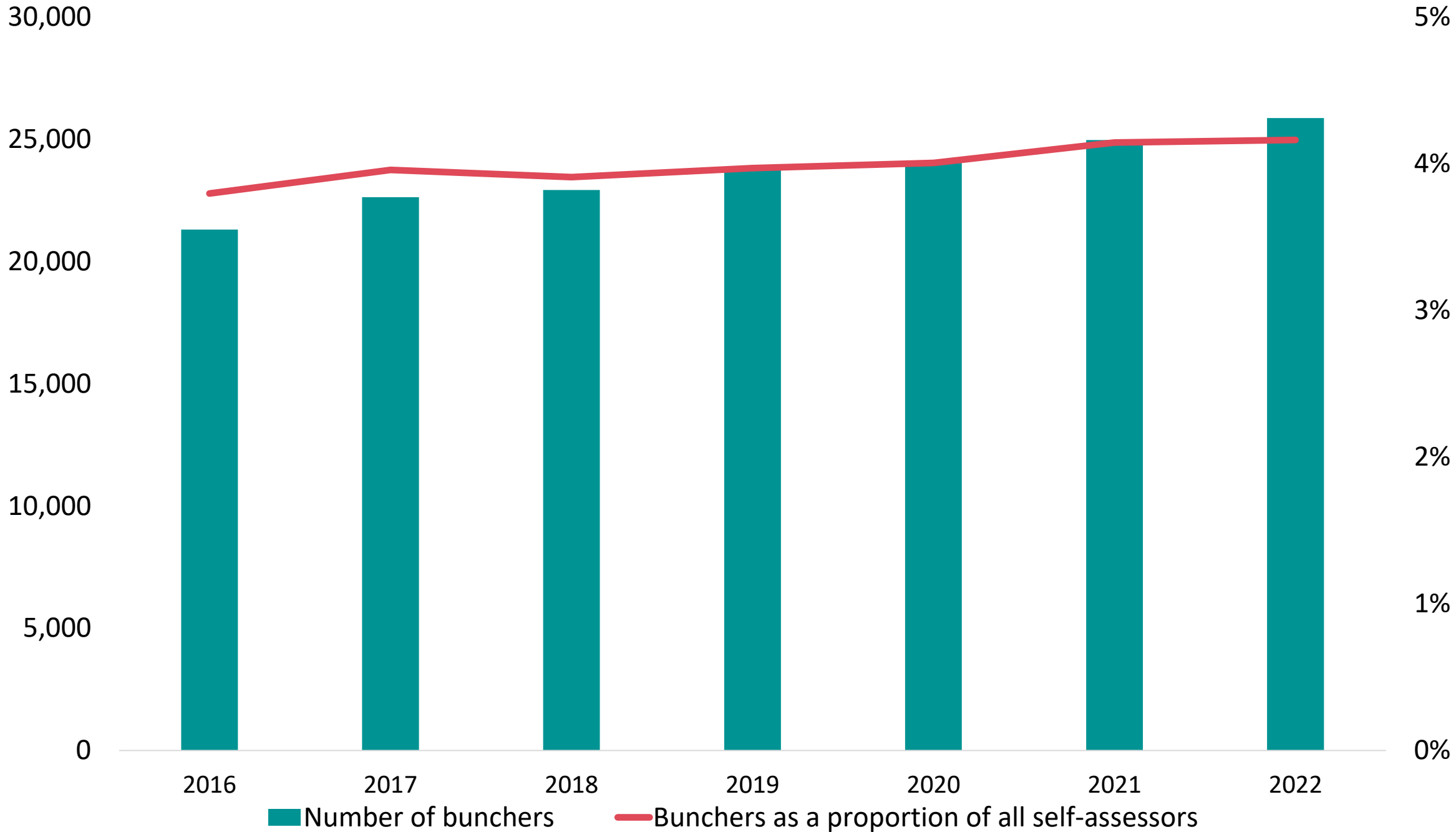
Two key metrics:

1. *Excess Mass*: Refers to the concentration of taxpayers around the threshold point. Calculated by summing the differences between observed and predicted taxpayer counts across income bins.
2. *Elasticity of Taxable Income*: Measures how taxpayers change their taxable income in response to a change in the tax rate.

All Self-Assessors (2022)

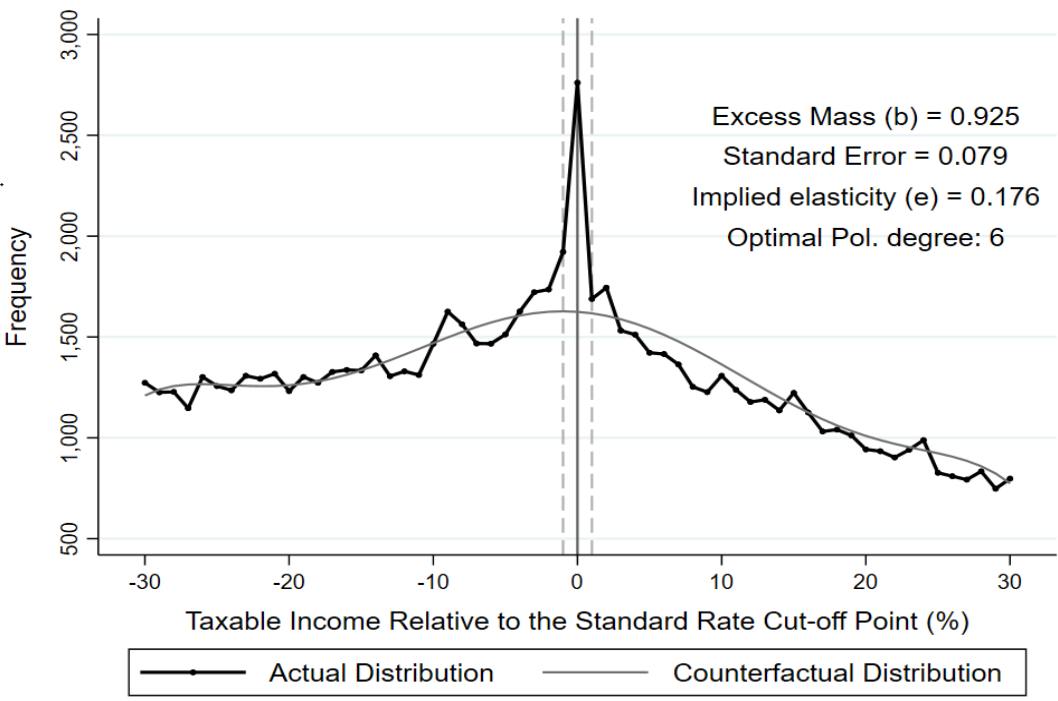


Bunching Trends (2016-2022)

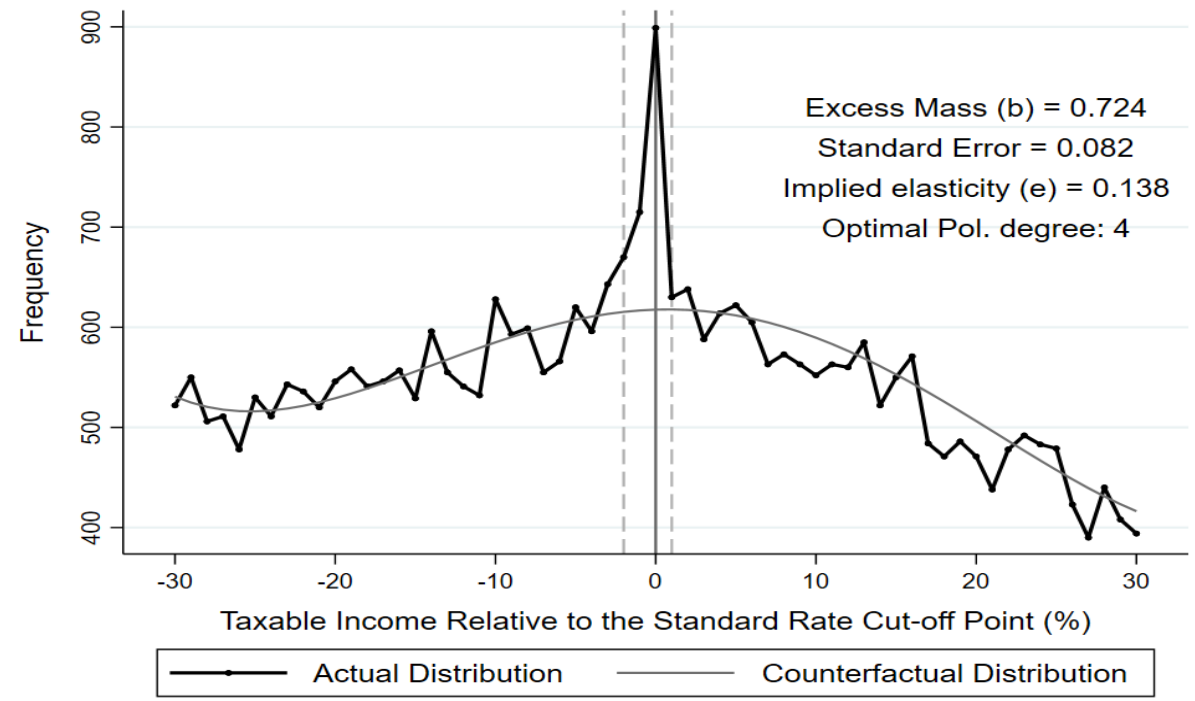


Self-Assessor Types (2022)

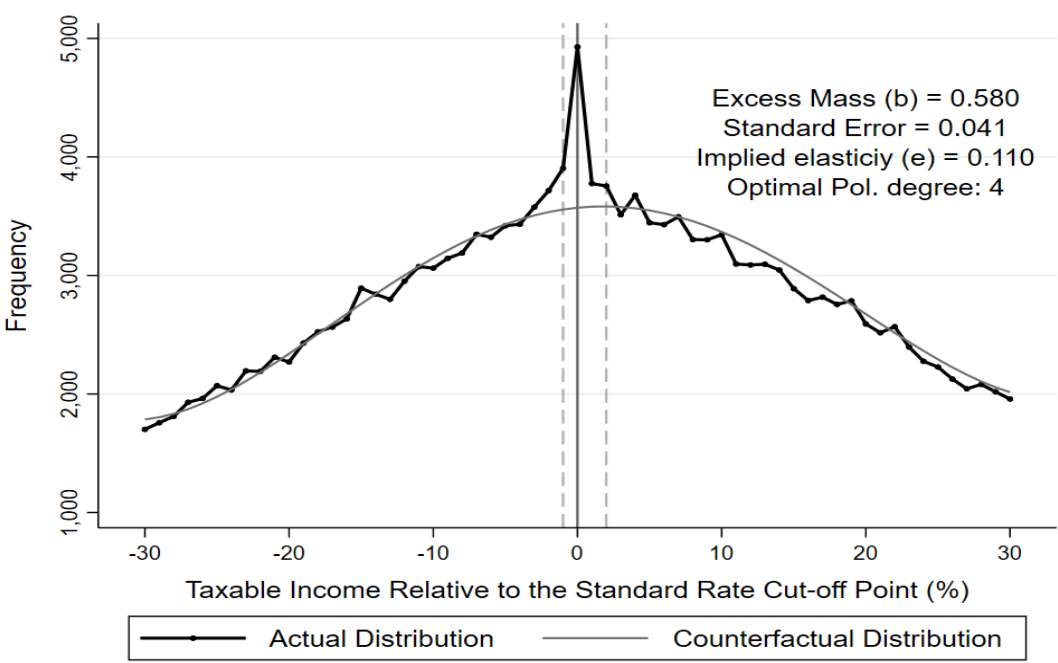
Single Male



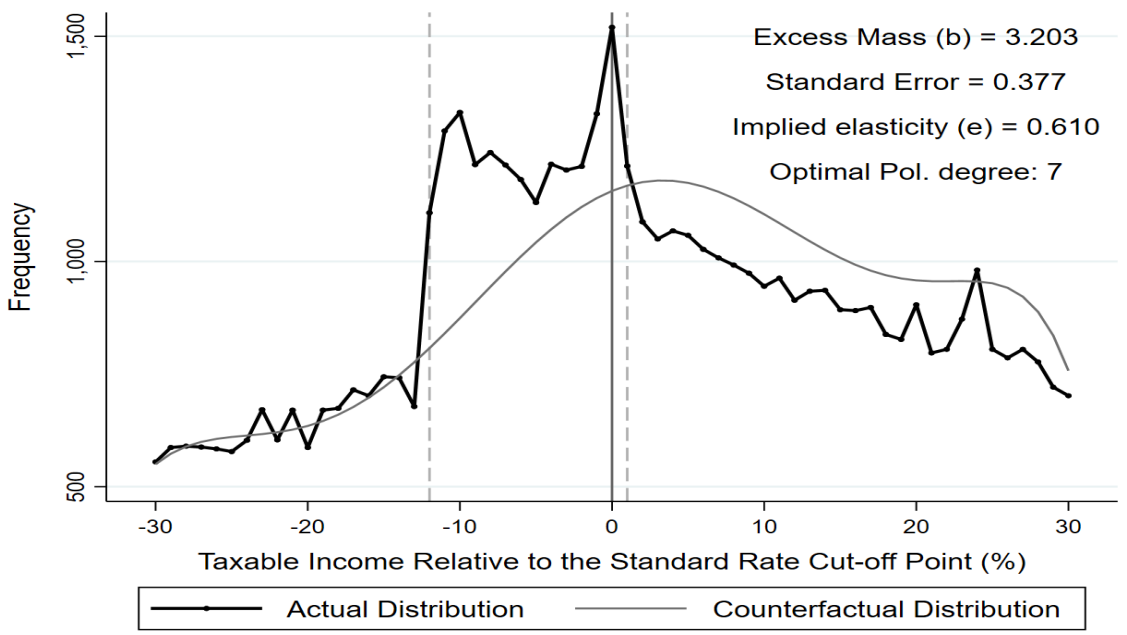
Single Female



Married Two Earner



Married One Earner

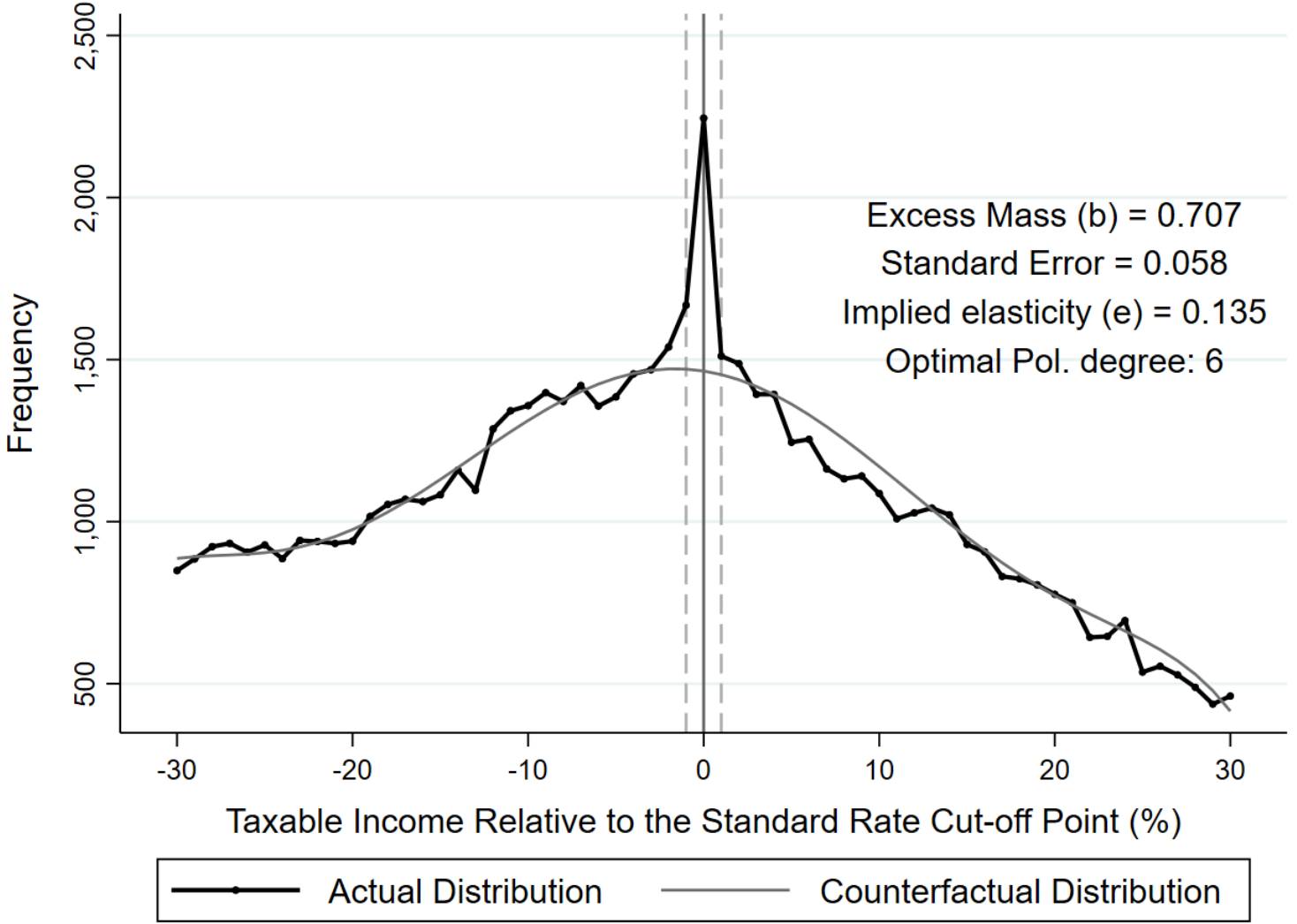


	Full Sample	Single Male	Single Female	Married Two Earners	Married One Earner
Excess Mass	0.559	0.925	0.724	0.58	3.203
Implied Elasticity	0.106	0.176	0.138	0.11	0.610

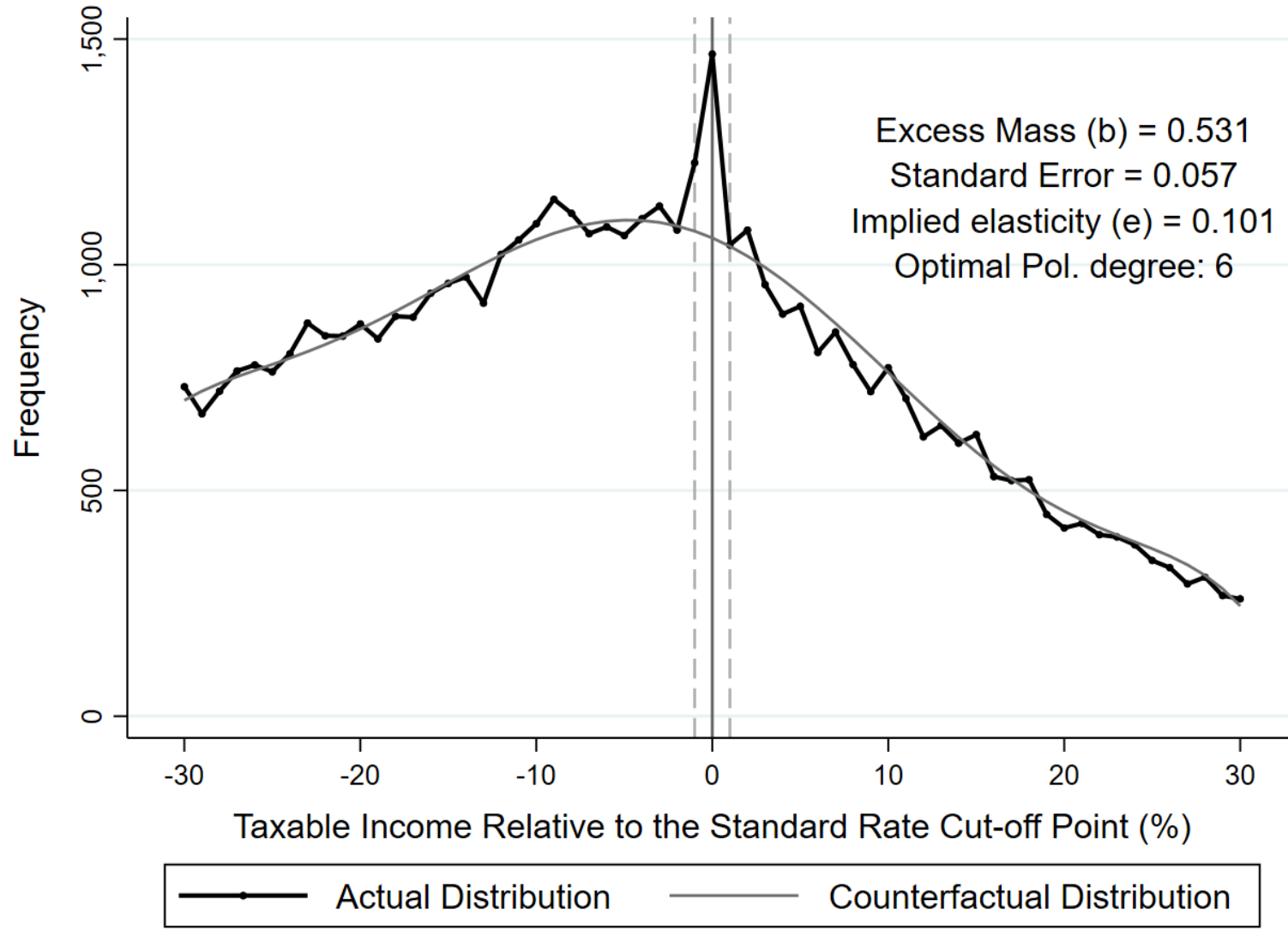
- Single males have a higher excess mass than single females, indicating more single male self-assessors are clustering their taxable income near the Standard Rate Cut-off Point. The higher implied elasticity of single males also indicate they are more responsive to changes in the marginal tax rate.
- Married with Two Earners have a lower excess mass and implied elasticity compared to single males and females, indicating they are clustering less near the Standard Rate Cut-off Point and are less responsive when it comes to adjusting their income levels.

Application to Sectors

Agriculture, Forestry & Fishing



Construction

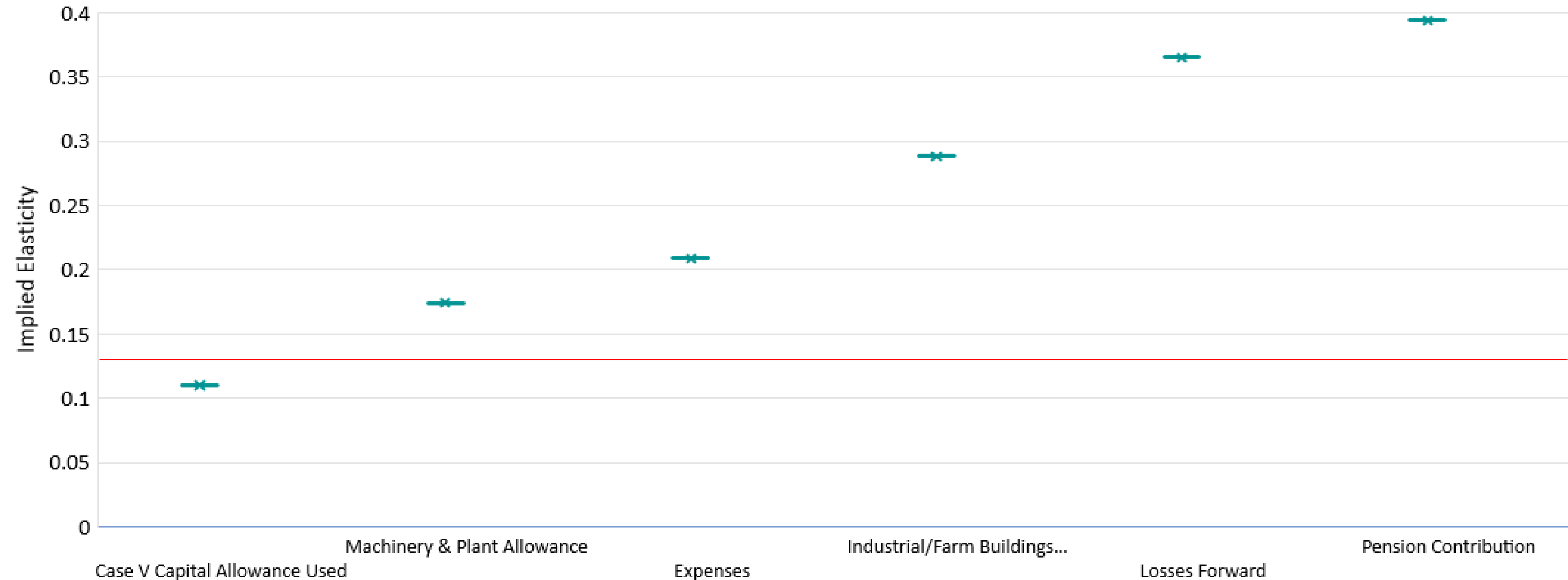


How do self-assessors respond?

- Taxpayers can adjust their taxable income through changes in real economic activity and tax adjustments.
- Focus on a subset of self-assessors who have more of an opportunity to avail of deductions, allowances and reliefs.

Total Gross Income	<i>Trading Income, Schedule E PAYE Income, Rental Income, etc.</i>
<i>Less Allowances & Deductions</i>	<i>Machinery & Plant Capital Allowance, Approved Nursing Home Expenses, Industrial Buildings and/or Farm Buildings Allowance, etc.</i>
<i>Less Reliefs & Retainable Charges</i>	<i>Pensions Contribution Relief, Employment & Investment Incentive Relief, Permanent Health Benefit, etc.</i>
<i>Equals Taxable Income</i>	

How do self-assessors respond?



- Self-assessors using Industrial/Farm Buildings Allowances, Losses Forward and Pension Contribution are more responsive to income tax changes compared to baseline elasticity of .133.

- Income bunching analysis is a well-established technique that can provide useful insights into taxpayers responsiveness to tax changes.
- We estimate an ETI of 0.106 on average, across the population of all self-assessed income taxpayers.
- Proportion of bunchers each year has remained consistent (4 per cent of all self-assessors).
- Examination of how taxpayers respond to tax changes indicates that some may use Pension Contributions, Losses Forwards and Industrial/Farm Buildings Allowances to reduce taxable income.

Potential Research Avenues

- Extend analysis to consider behaviour of other groups, e.g. elasticity of pure-wage earners using Revenue real-time payroll data.
- Analysis of bunching behaviour over time.

Revenue Statistics and Economic Research Seminar

Q&A Discussion

Conor O'Brien, Yvonne Hayden, Alan McLoughlin

