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Irish Government Economic and Evaluation Service

Understanding GVA, Productivity & Globalisation: Incentivising R&D in Ireland

Dr. Dermot P. Coates and Dr. Frances P. Ruane
National Competitiveness and Productivity Council, Ireland
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This is a work-in-progress and all results are preliminary only.

Introduction

- Motivation
- Data Sources
- Defining the ‘Foreign’ sector
- **Preliminary** results
- Incentivising R&D

Motivation

Motivation:

- For GVA and labour productivity metrics, there is a structural distinction between 'foreign ownership' and 'domestic ownership' which is particularly prevalent in Ireland, owing to substantial levels of FDI and a highly globalised industrial base

- Understanding this structural distinction is critical to understanding productivity developments in Ireland – specifically, we are interested in understanding the role of ***State enterprise agency (SEA) client companies*** in these developments

Note: The Central Statistics Office's selection of sectors and definition of the 'Foreign' sector complicates comparisons across this analysis. The breakdown which can be provided at sectoral level is in many cases constrained by the need to preserve the confidentiality of data provided by individual units. Additionally, 2020 and 2021 data is impacted from the effects of COVID-19.

Defining “Foreign” Sector (sectoral approach)

CSO Productivity Statistics

Sectors dominated by foreign-owned MNE’s

- NACE 20: Chemicals
- NACE 58-63: Software & Comms
- NACE 21: Basic pharma products & prep
- NACE 26, 27, 32.5: Manufacturing
- NACE 18.2: Media

Sectors dominated by domestic & other enterprises

Foreign-owned Employment: 308,800
Foreign-owned GVA: €210bn

ABSEI Dataset

Foreign-owned
Food & drink
ICT & energy/water/waste/construction
Traditional & modern manufacturing
Financial & business services

IDA Ireland

- Engineering
- Green Economy
- MedTech
- Biopharma
- Technology
- **Financial Services**
- **Business Services**
- Media

EI
Foreign-owned food/drink multinationals

Not included in CSO ‘foreign’ data

IDA
Employment: 234,649
GVA: €125bn

EI
Employment 7,815
GVA €1.5bn

Foreign-owned Employment: 242,464
Foreign-owned GVA: €127bn

Irish-Owned

- EI
- Údarás na Gaeltachta

Note: ABSEI survey includes firms with >10 employees, as well as High Potential Start Ups (HPSU’s) that are clients of Enterprise Ireland and excludes firms with <10 employees as well as High-Potential Start-Up (HPSU) which are not Enterprise Ireland HPSU’s. The survey does include a small number of HPSU’s companies with employment of <10 where there is an expectation that their employment will exceed 10 in the following survey.
Note: ‘dominated by foreign-owned’ = MNE turnover exceeds 85% of total [balance = sectors ‘dominated by domestic & other’]

Preliminary Results: Value-Added

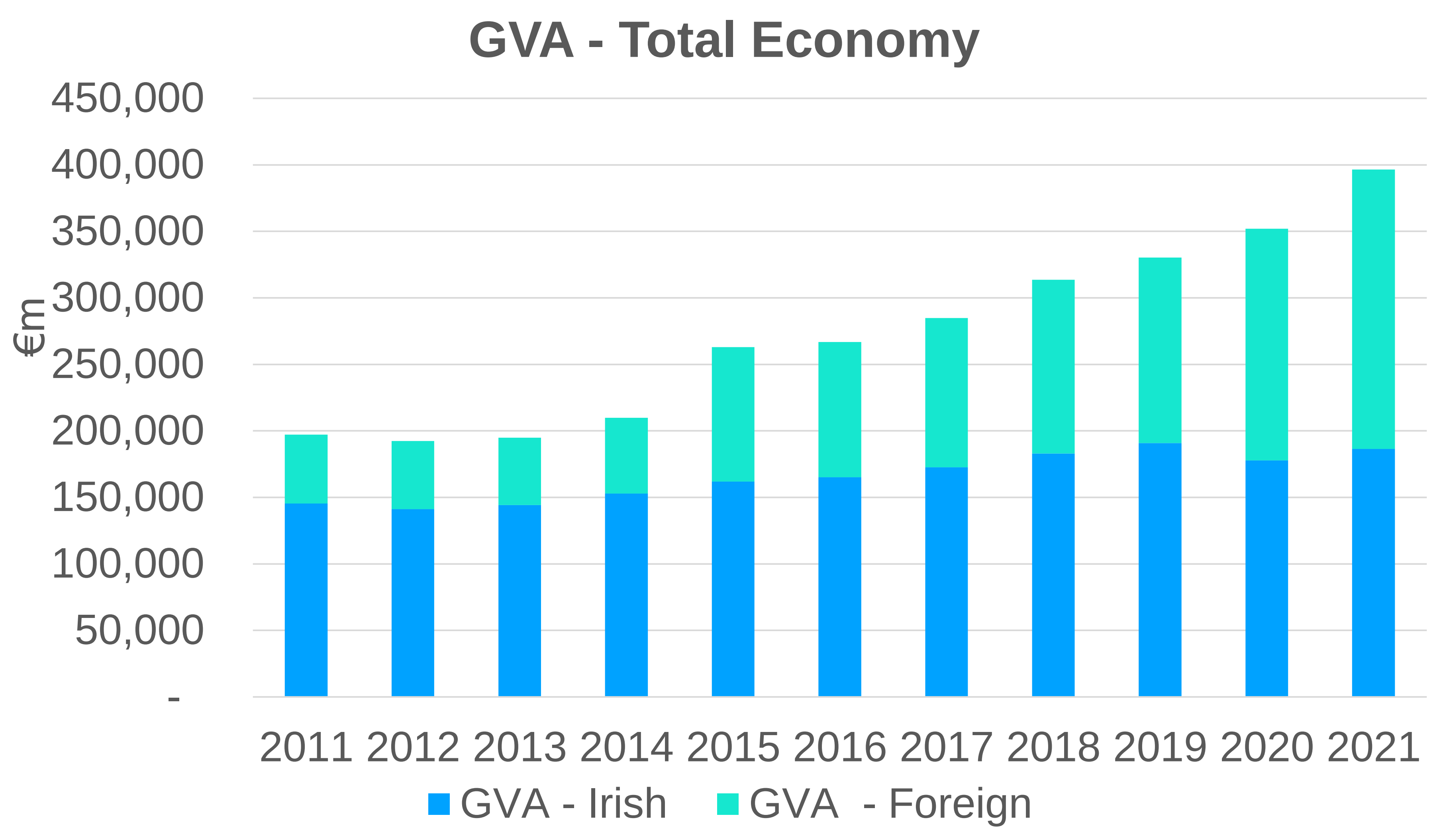
ABSEI is typically a subset of CSO, therefore it is expected that GVA* should be different…**but these client companies had previously 'explained' c.100%+ of the GVA** (for foreign-owned enterprises)

However, the % of CSO's 'foreign-dominated' GVA** accounted for has been **decreasing** for foreign-owned client companies of the various State enterprise agencies…

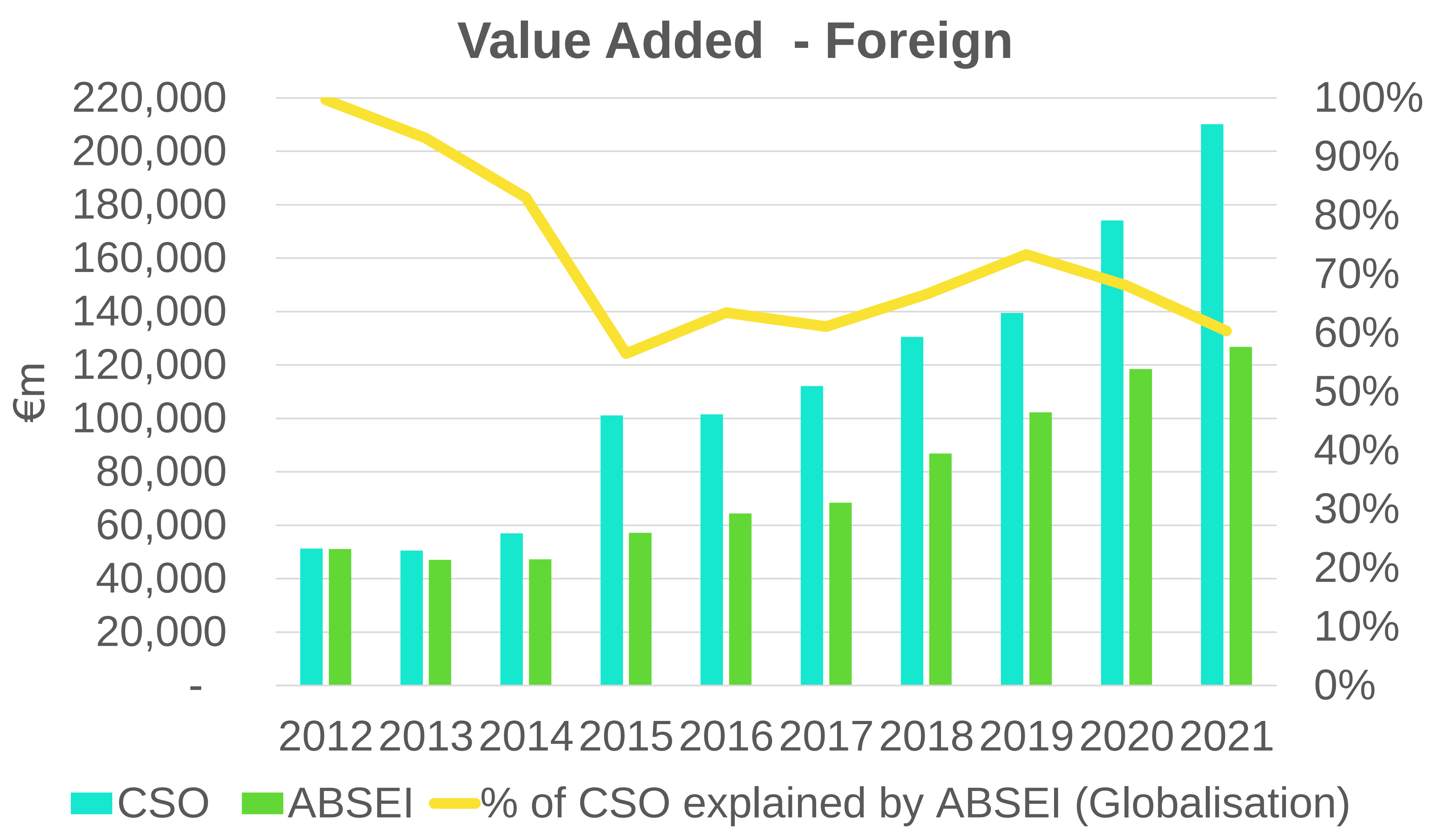
By 2021, gap = €83bn. (or 40% = 'unexplained'…or at least, unclear)

Aligning definitions by removing Financial/Business Services firms plus Food Multinationals from ABSEI definition would widen this gap = €94bn. (or 55% of total)

<u>Further work</u>: impact of statistical definitions and reporting coverage



Source: CSO



Source: CSO, ABSEI

*GVA is the difference between the value of goods and services produced and the cost of raw materials and other inputs that are used up in the production process. It is closely related to GDP and excludes taxes and subsidies on products and production.
**This definition relates to those sector s where MNE turnover on average exceeds 85% of the sector total.

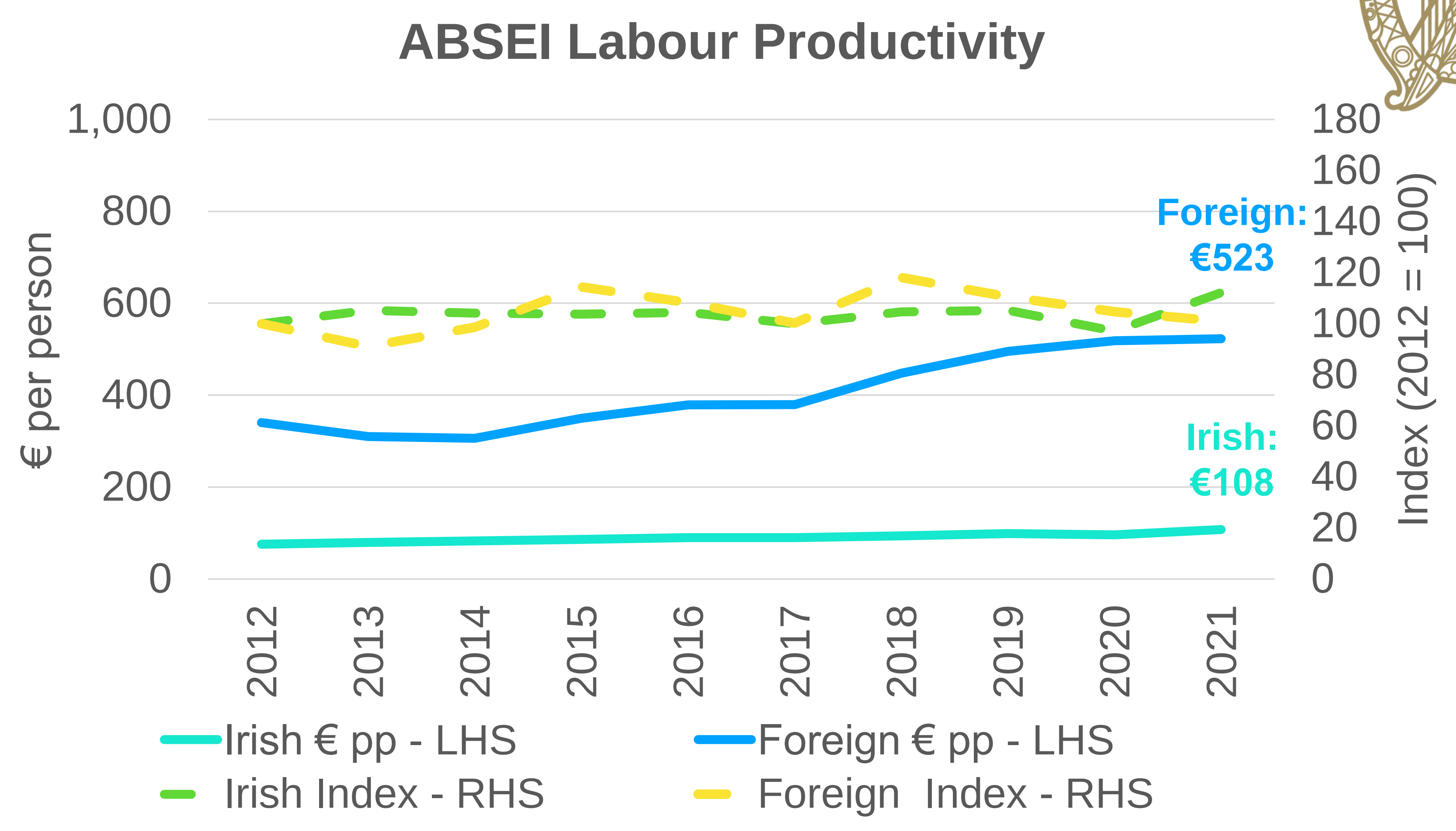
Preliminary Results: Labour Productivity

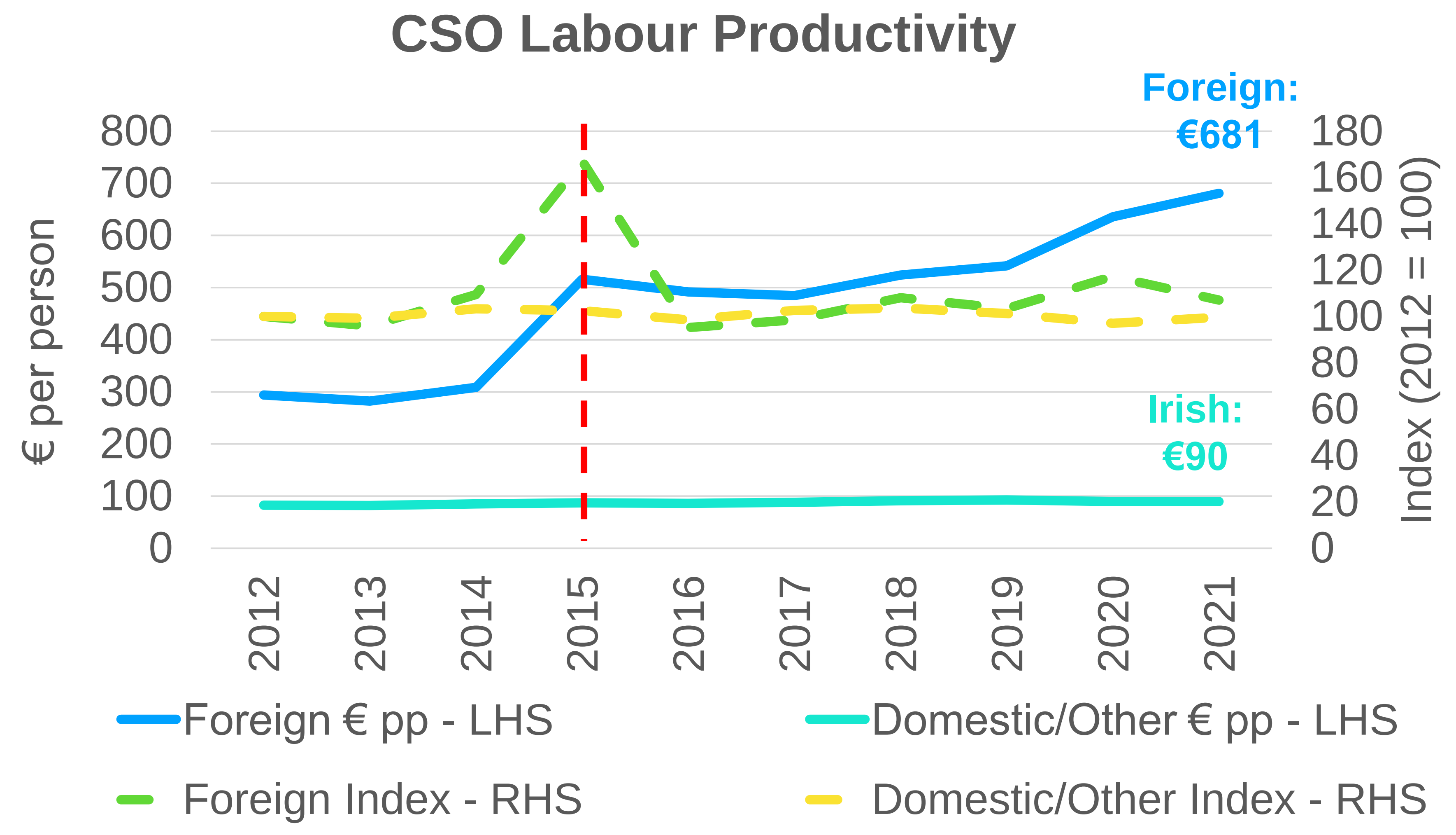
Variance **between IE-owned SEA client companies** (trading internationally) vs. CSO's 'domestic/other' (non-MNE) cohort

- Client companies do report higher Labour productivity (LP) vs. CSO data since 2016 - difference of +5% in 2016 to +20% in 2021 (Appendix B2) - but relatively low annual growth in recent years
- This gap is an 'average' only – greater variance for certain sub-sectors (forthcoming slide)
- Impact of varying statistical definitions and reporting requirements (see: Appendix A)

Both datasets show a divergence between LP for '**Foreign' vs. 'Irish**' since 2014, **however**, more pronounced in CSO dataset…

- **But** a comparison of simple % change over the past decade is of limited use as there is a clearly a **structural break** from 2015 in the CSO data
- Likely due to several factors, including IP and redomiciled PLC's
- SBS also show IE-owned firms lag foreign-owned firms (see: Appendix C)





Defining “Foreign” Sector (ownership approach)

CSO Productivity Statistics

Firms are defined as “domestic” or “foreign” if the immediate owner is a domestic or a foreign entity

Foreign-owned firms

Irish-owned firms

All Sectors (NACE REV 2)

ABSEI Dataset

Foreign-owned

Food & drink
ICT & energy/water/waste/construction
Traditional & modern manufacturing
Financial & business services

IDA Ireland

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Green Economy
MedTech
Biopharma
Technology
Financial Services
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Media

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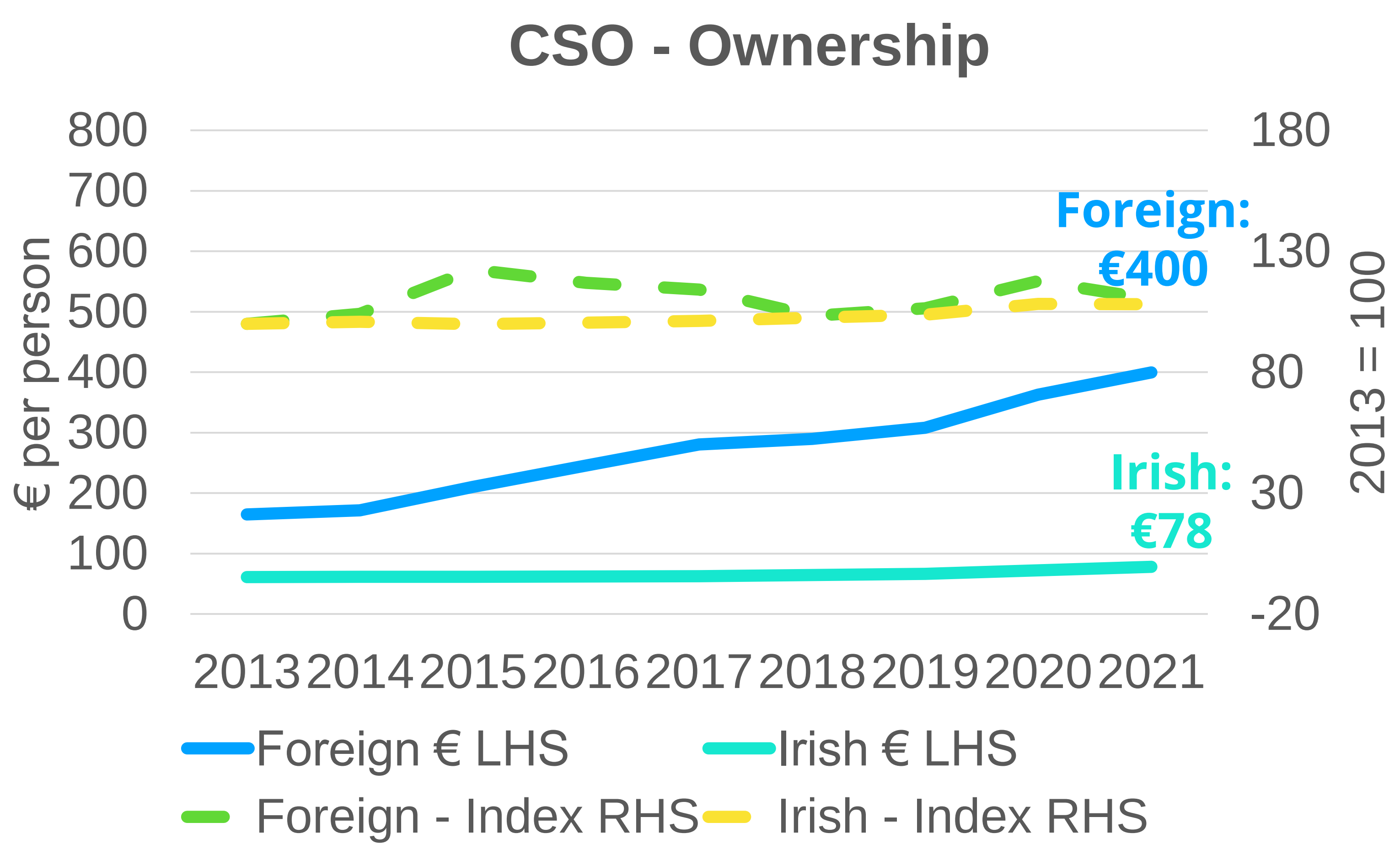
Note: The criteria used to determine ownership is whether the immediate owner is a foreign or domestic company.

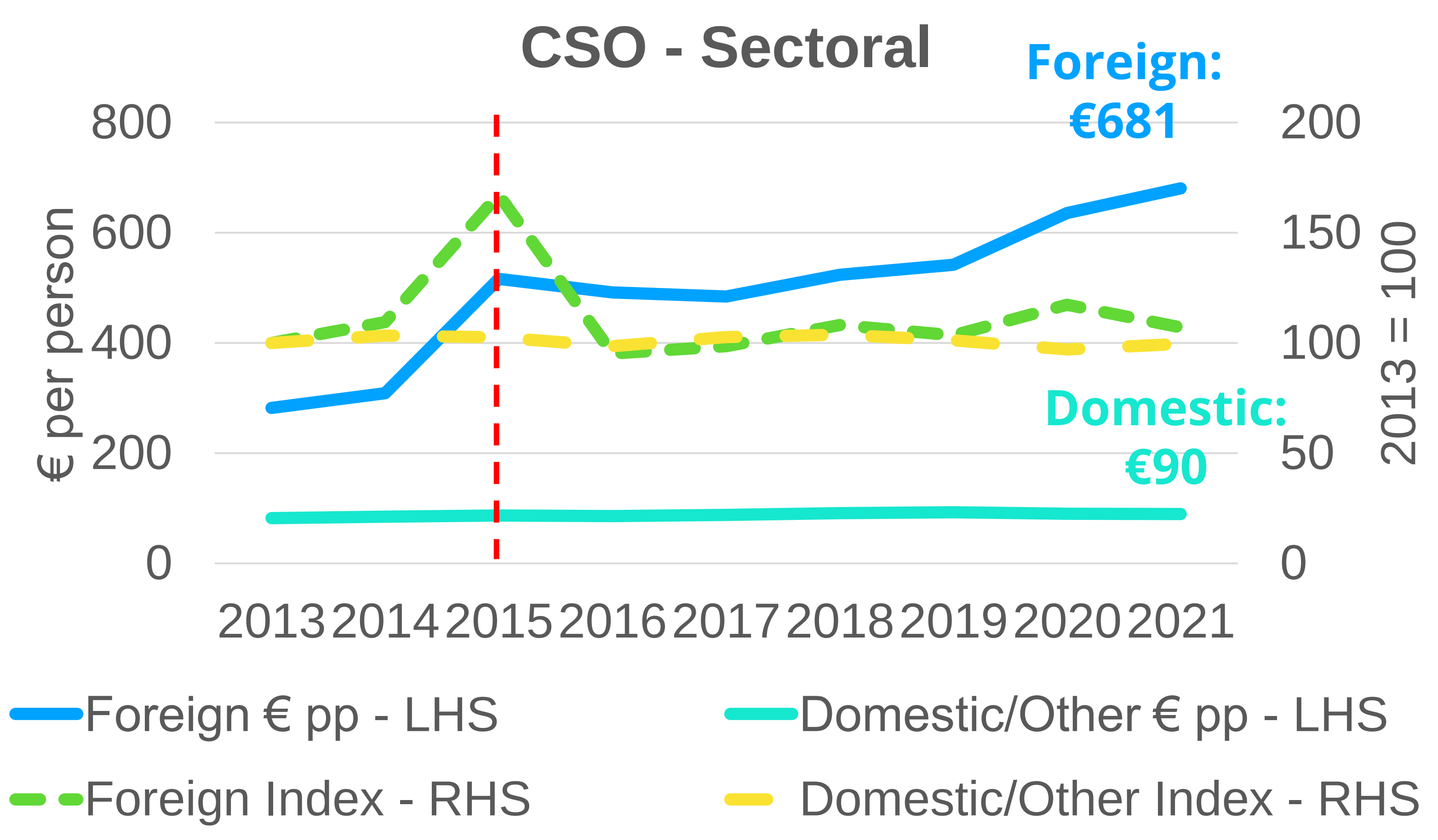
Preliminary Results: Labour Productivity

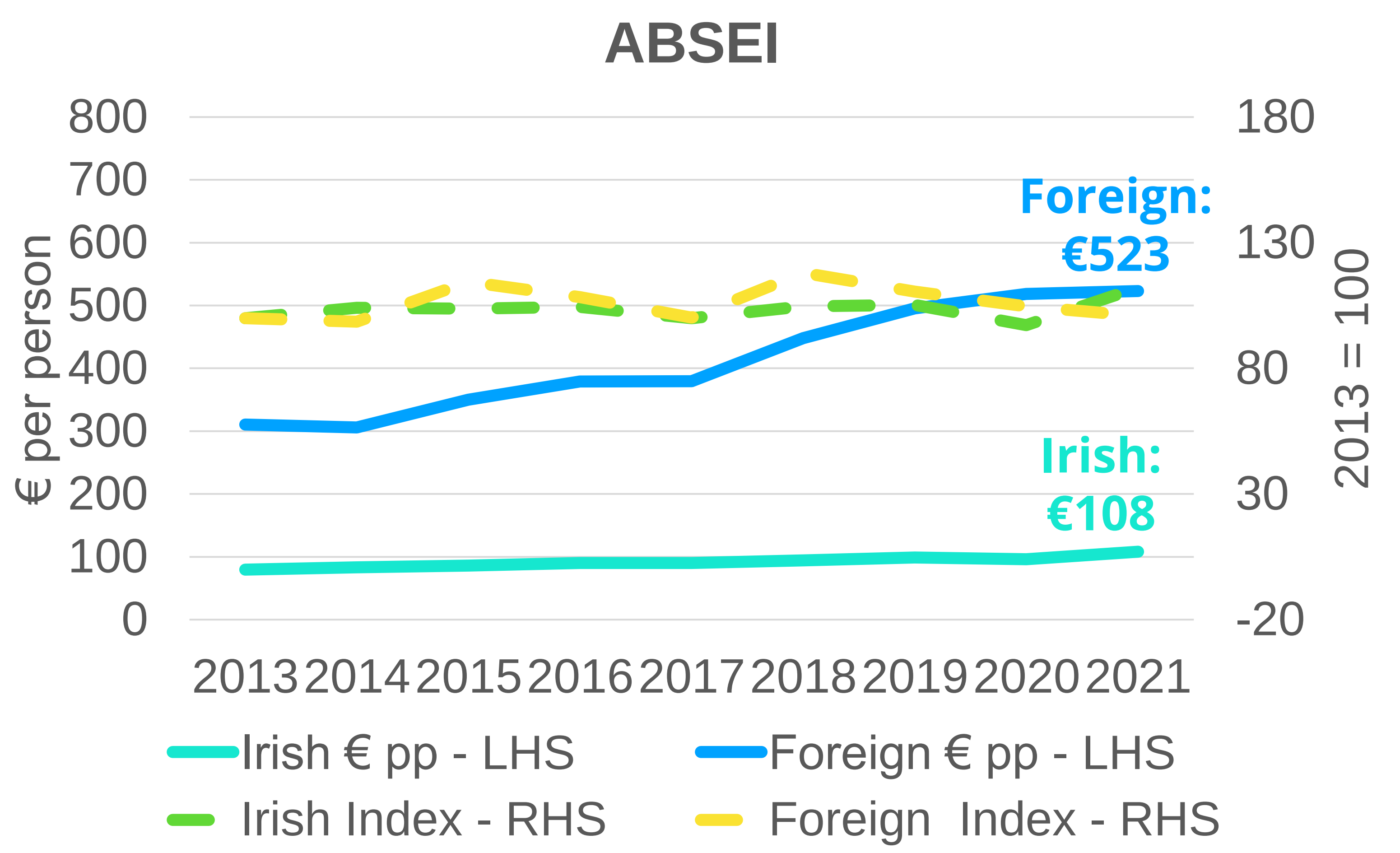
CSO's newly published ownership series incorporated into our analysis

Structural break in 2015 apparent in CSO's 'sectoral' approach not as prominent in CSO's 'ownership' approach

Client companies report higher LP than CSO's Irish-owned companies since 2013 (+30% in 2013 to +38% in 2021)
The divergence in Foreign vs Irish owned is also apparent in CSO's 'Ownership' data







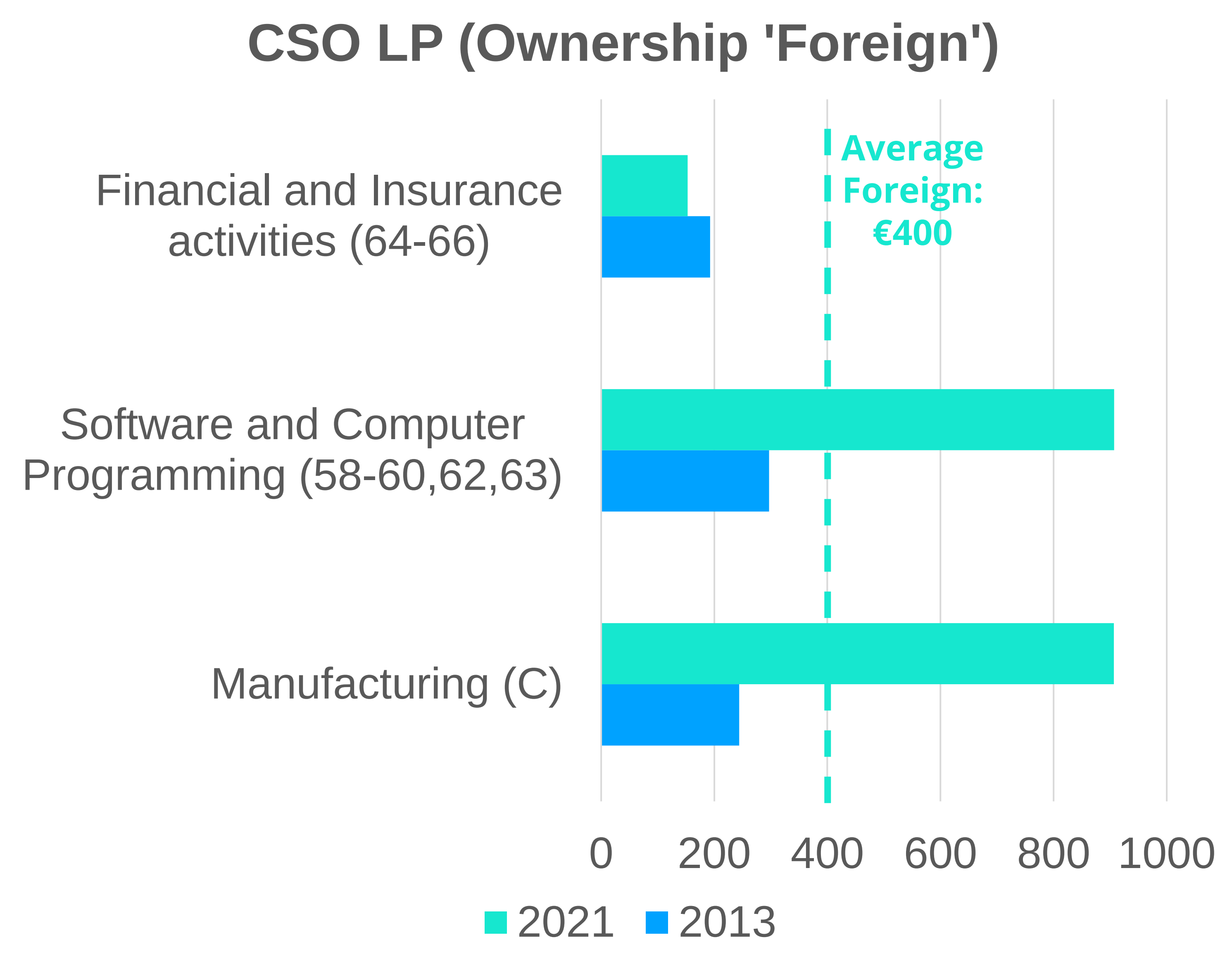
Preliminary Results: Labour Productivity by sub-sector

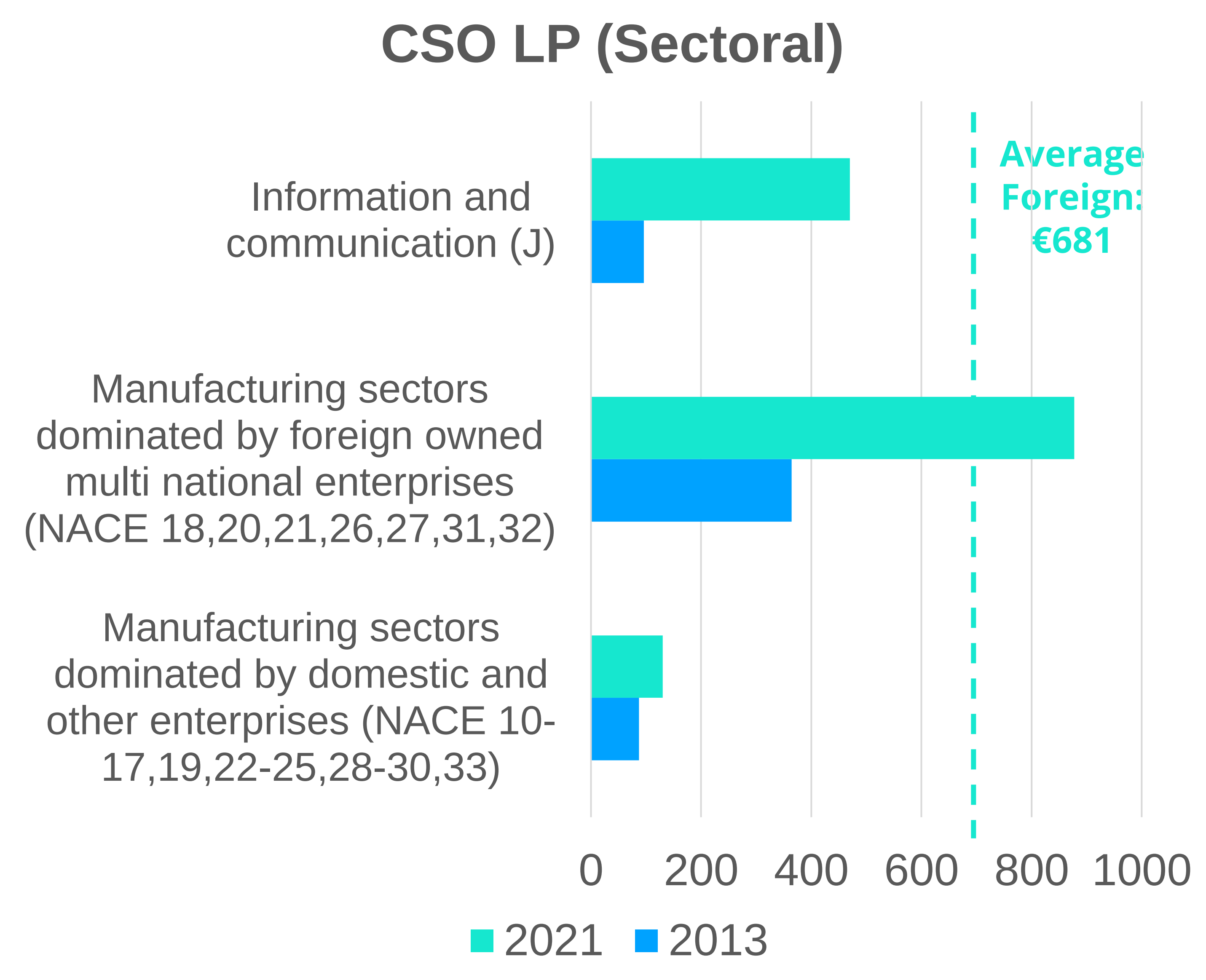
Variation in LP 'foreign' by sub-sector

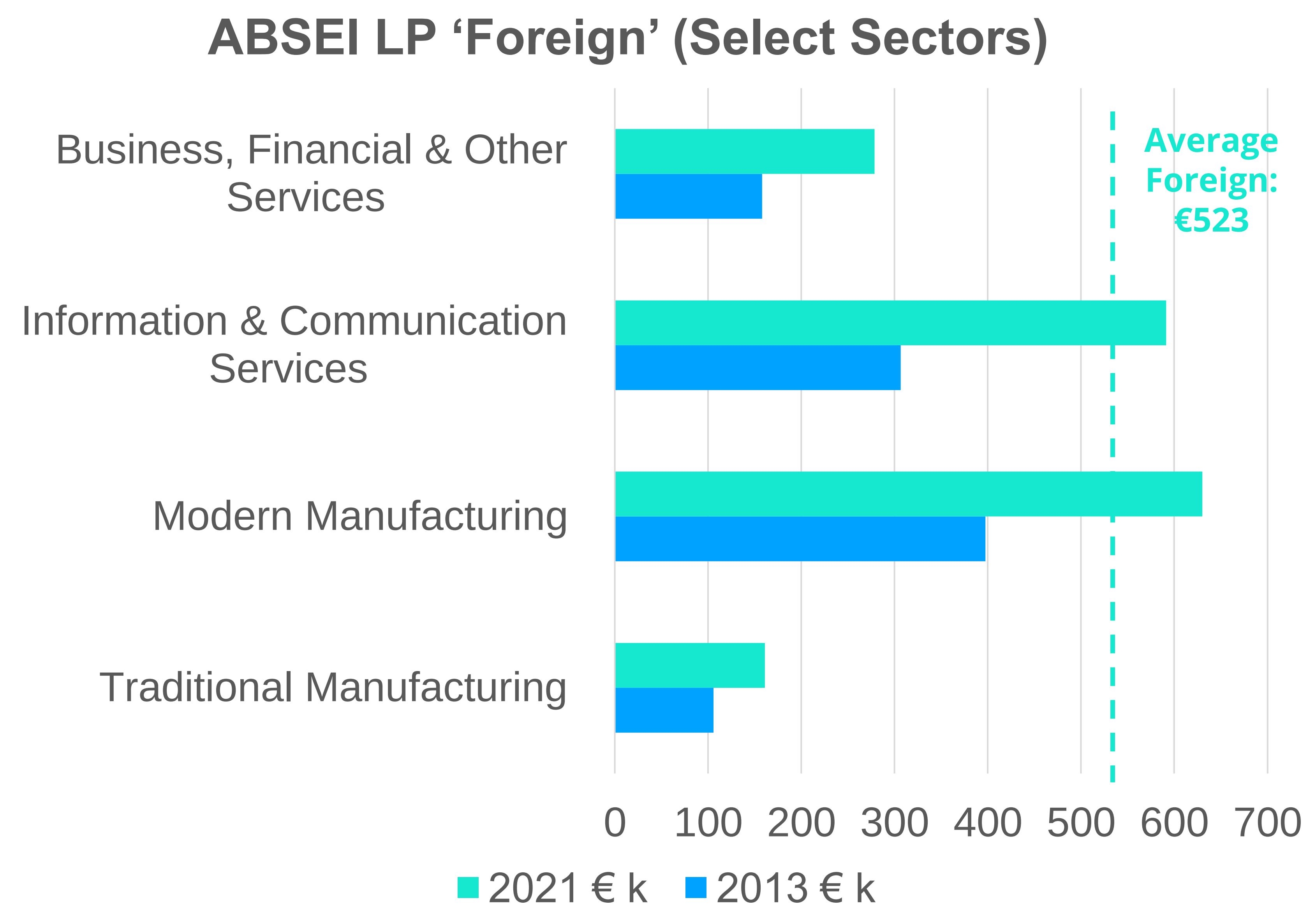
Key drivers of the increased productivity p/person are ICT & Modern Manufacturing sub-sectors

Policy implications – are these sub-sectors more likely to invest in R&D?

Further analysis of sectoral trends will be undertaken







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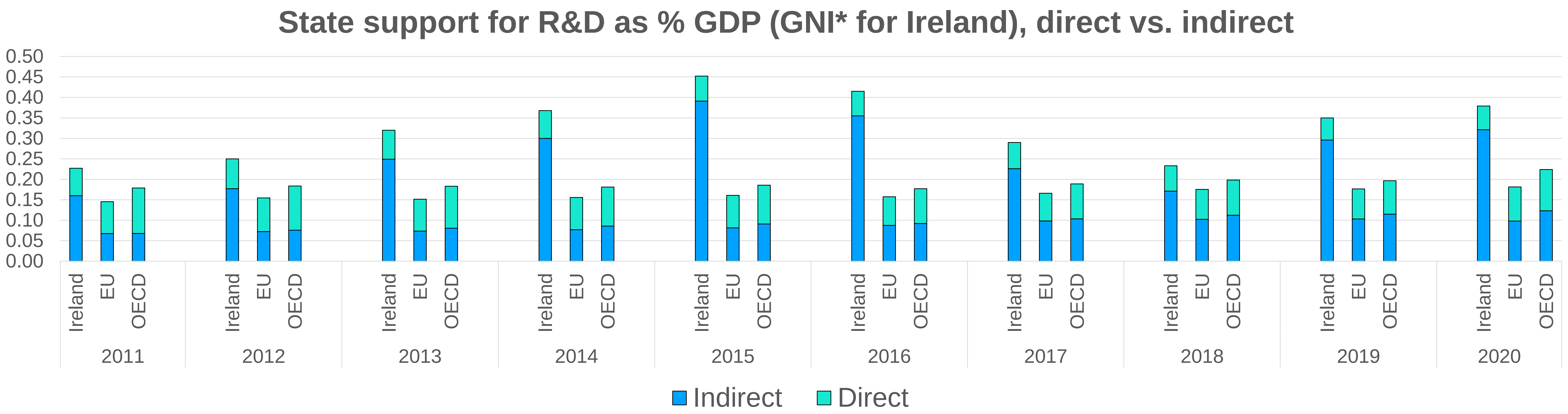
Incentivising R&D: Direct vs. Indirect Support

Ireland relies heavily on tax expenditures to incentivise industry R&D

While the scale of direct (expenditure) supports in Ireland has been consistently below the EU and OECD averages, the scale of indirect (tax incentive-based) supports has been significantly higher, and this has largely been driven by the R&D tax credit

These forms of support are not substitutes – new firms or those with financially constraints may be more responsive to direct supports

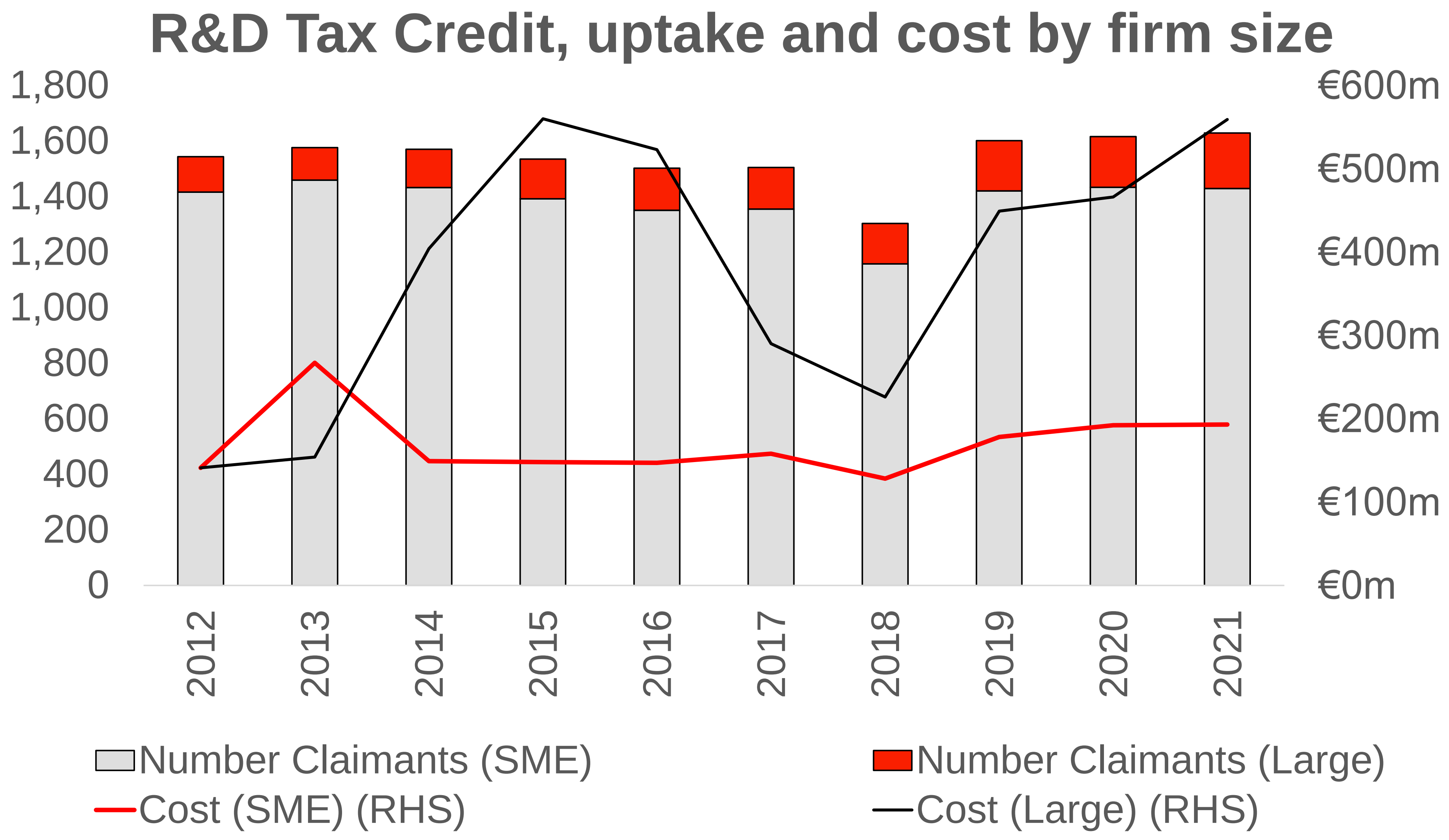


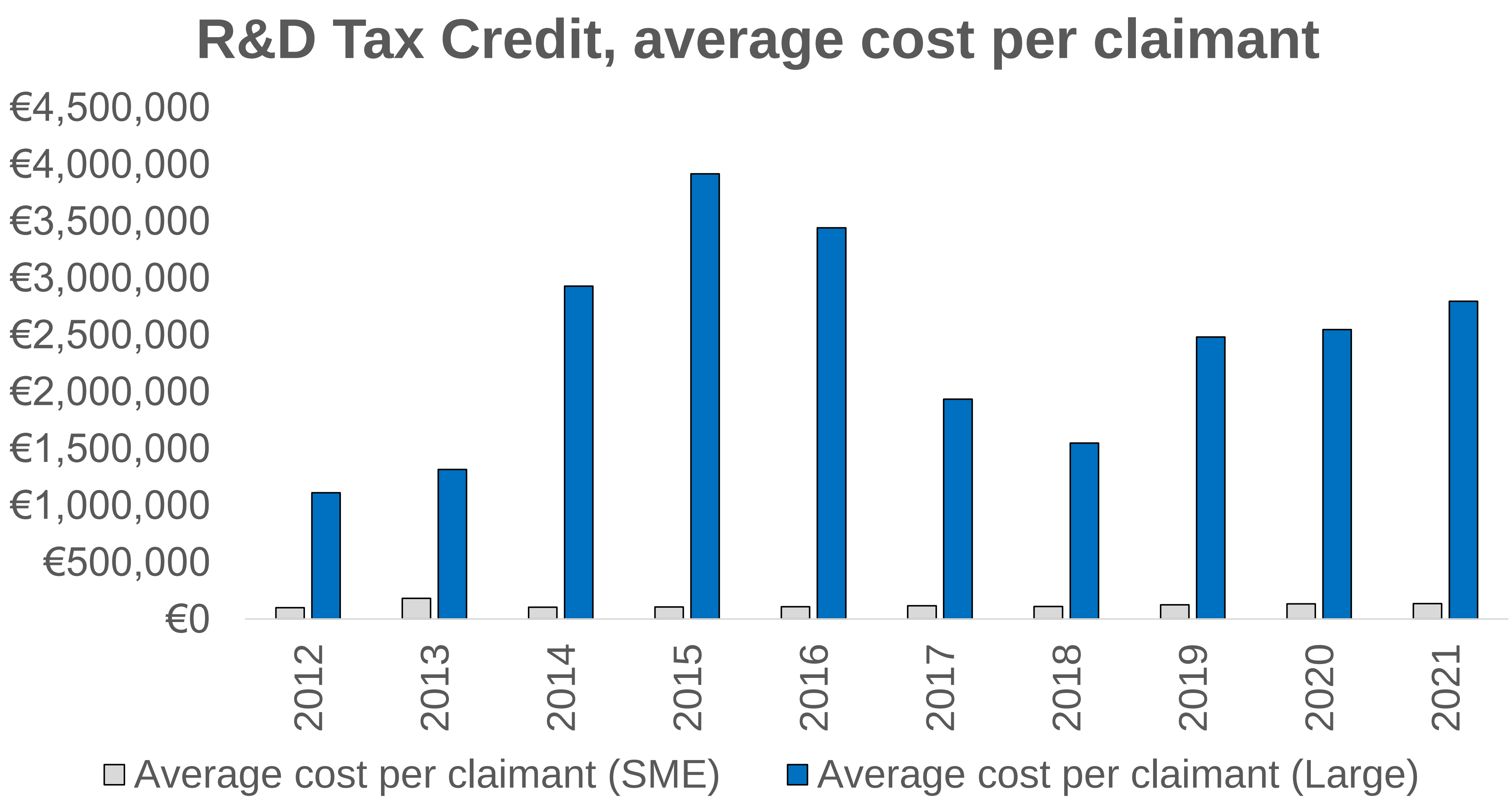
Incentivising R&D: R&D Tax Credit

SMEs make-up the majority of claimants of the “R&D tax credit”, while large firms dominate in terms of cost.

Average cost per SME claimant has stayed relatively constant over the last ten years, while average cost per large claimant has been considerably more volatile, reaching a peak of almost €4 million in 2015 – policy implications: how to encourage greater participation by the SME sector?

OECD research has shown that larger firms typically engage in R&D activities in the absence of tax incentives, with incentives having a larger positive impact for smaller firms





Incentivising R&D: Defining Innovation

R&D tax credit adheres to a specific definition of innovation ("new to world")

Activity in question must seek to resolve scientific or technological uncertainty and to achieve scientific or technological advancement – this limits the type of expenditure that can qualify

Alternative – OECD Oslo Manual refers to innovation in terms of product or process development that is "new to firm"

A recalibration of the R&D tax credit to support innovation as defined in line with the Oslo Manual could drive uptake, particularly among SMEs

Measures under consideration for inclusion in ***Ireland's Budget 2024***

APPENDIX

Preliminary Results: Payroll

Irish-owned SEA client companies also report a higher average payroll cost than the CSO's 'domestic/other' (i.e. non-MNE) cohort

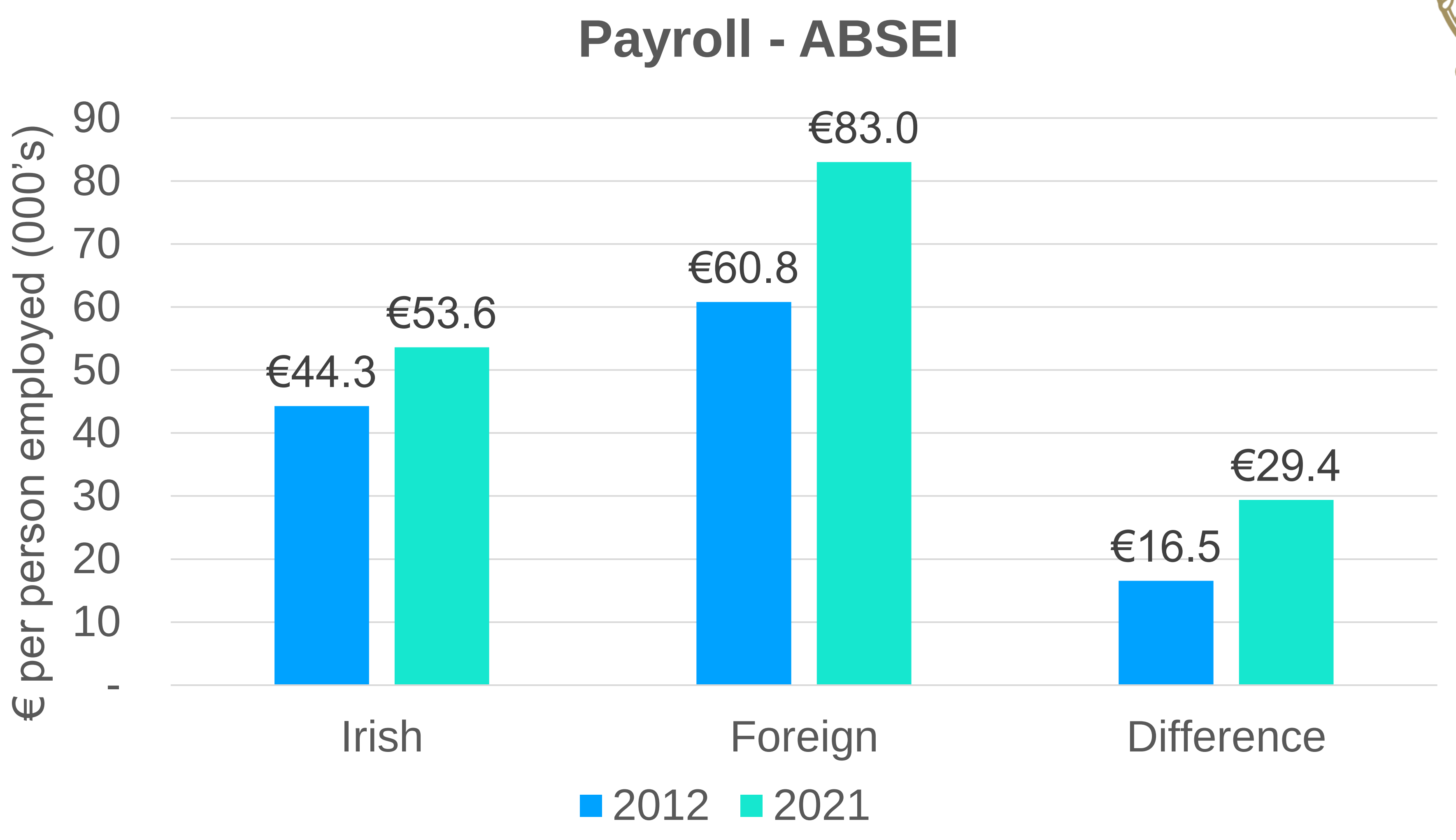
- *€53.6k ABSEI IE-Owned (2021)*
- *€44.4k CSO Domestic (2021)*

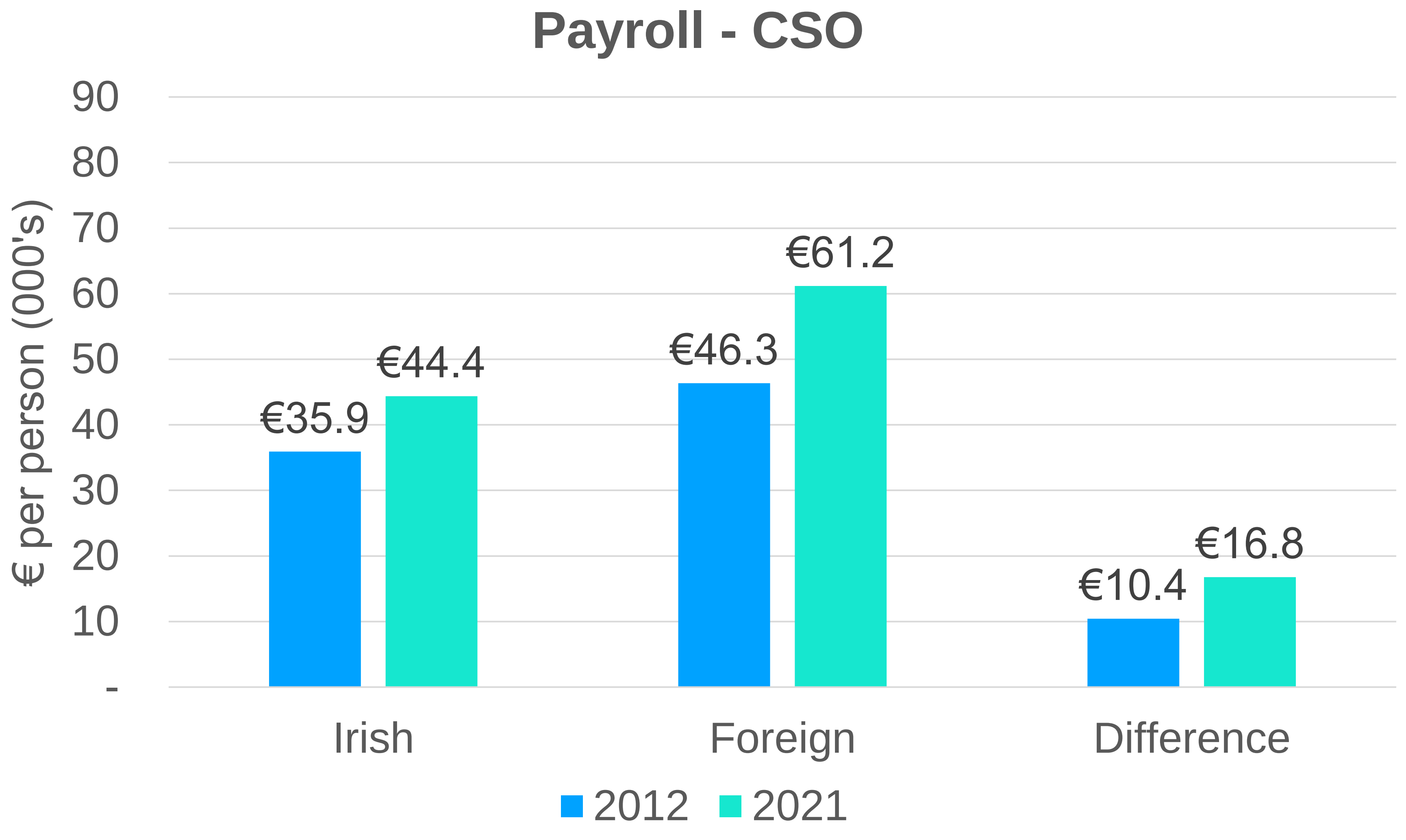
Wages rose faster for CSO's 'Domestic/Other' from 2012 to 2021

- *24% CSO Domestic/Other*
- *21% ABSEI IE-owned*

For 'Foreign' firms, ABSEI data shows a larger increase

- *ABSEI +36% (€61k in 2012, €83k in 2021)*
- *CSO +32% (€46k in 2012, €61k in 2021)*





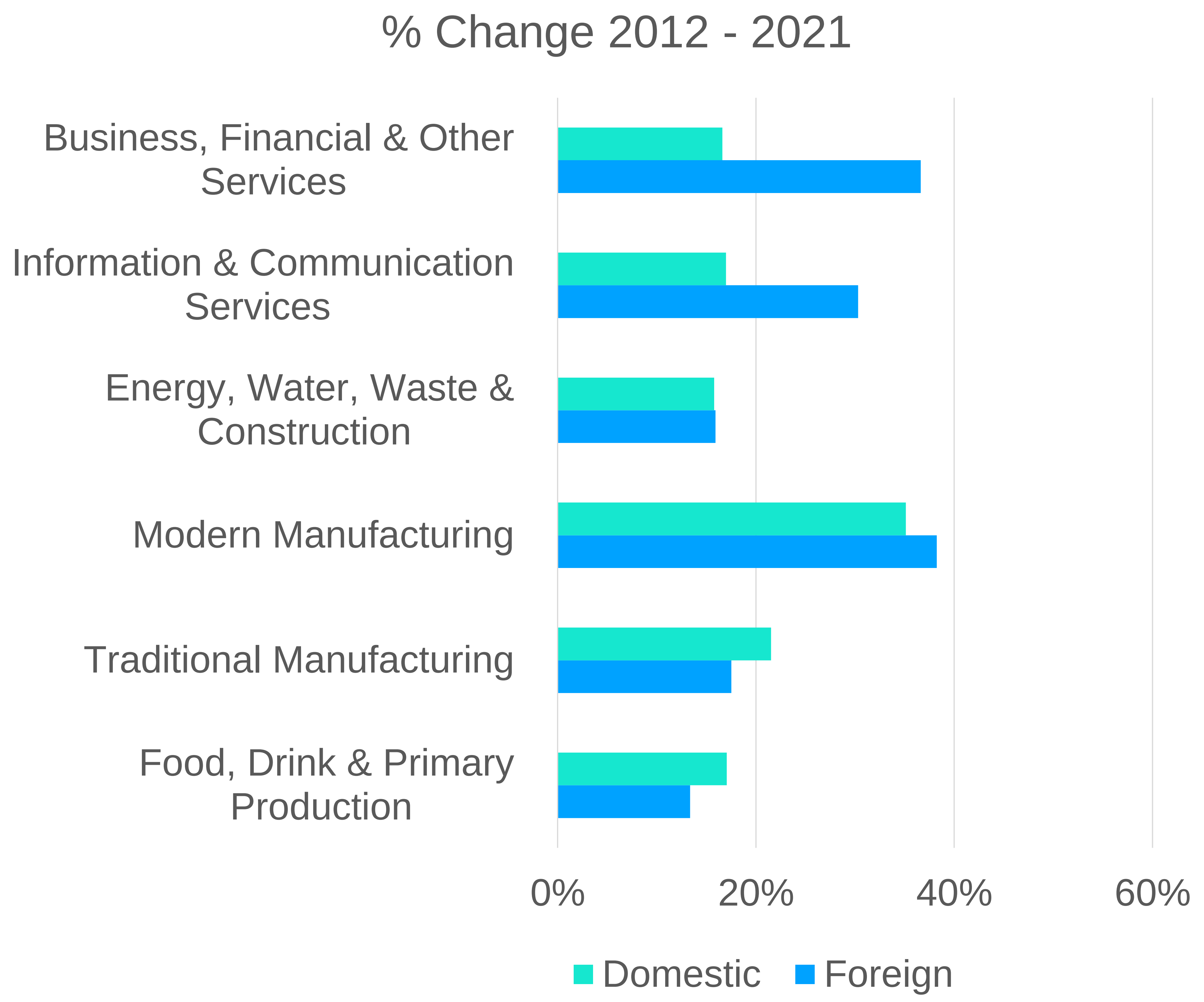
Preliminary Results: Payroll Costs by Sector

Payroll costs p/employee in the ABSEI ‘Foreign’ data have risen 36% overall, **however…..**

Rate of growth varies by sub-sector

- *Modern Manufacturing +38%*
- *Business, Financial & Other Services +37%*
- *ICT +30%*
- *Traditional Manufacturing +18%*

Further examination of trends at sub-sectoral level will be undertaken



Source: ABSEI

EU and USA Industrial and State Aid Developments (1)

The pursuit of open strategic autonomy in response to global developments has led to changes in the EU State Aid policy

- *Temporary Crisis and Transition Framework*
- *European Chips Act*
- *US Inflation Reduction Act*
- *US CHIPS and Science Act*
- *OECD BEPS project*
- *Open Strategic Autonomy: IPCEIs (see next slide)*

While some of the new flexibilities in EU State Aid policy may benefit Ireland, overall, a more permissive regime could well present a competitiveness threat to Ireland if larger countries are able to outbid smaller countries for strategic invest

Given the highly globalised nature of Ireland's economy, these developments will have a further impact on future versions of the data presented today

D/Finance: "given the proportion of manufactured goods that Ireland imports, any restructuring of global semiconductor value chains would likely have significant effects on the Irish economy"

EU and USA Industrial and State Aid Developments (2)

Approved Important Projects of Common European Interest (IPCEI)

European Commission | COMPETITION

	First IPCEI on Microelectronics (2018)	First IPCEI on Batteries (2019)	Second IPCEI on Batteries – EuBatIn (2021)	First hydrogen IPCEI - Hy2Tech (2022)	Second hydrogen IPCEI – Hy2Use (2022)	Second IPCEI on Microelectronics and Communication Technologies (2023)	Total
Participating companies	29	17	42	35	29	56	208 179*
Participating projects	43	22	46	41	35	68	255
State aid approved (EUR billion)	1,9	3,2	2,9	5,4	5,2	8,1	26,7
Expected private investments (EUR billion)	6,5	5	9	8,8	7	13,7	50
Participating Member States					+		21 with UK included as a Member State, plus Norway participated in at least one IPCEI

*Excluding the companies that participated in more than one IPCEI

Summary and Next Steps

Essential to deepen our understanding of productivity developments in Ireland

- *Important to deliver on the White Paper on Enterprise*
- *CSO continue to prioritise the engagement of productivity data at company level and more recent data releases (e.g. Quarterly Productivity Data release for Q1 2023)*

Progress with analysis

- *Sectoral and regional analysis [ABSEI data]*
- *Continue engagement with CSO and ABSEI (specifically: statistical definitions and survey coverage)*

Aim to finalise/publish updated analysis in Q4 2023

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Appendix A: Important considerations – statistical definitions & reporting coverage

- ABSEI survey: excludes firms with <10 employees/HPSUs
- CSO Productivity Statistics (PS) series: difficulty in isolating exporting vs. non-exporting firms/sectors
- Also, definition of 'foreign' (*sectors dominated by foreign-owned MNEs*) ≠ all GVA, etc. attributable to firms that are foreign-owned in these sectors – implications for composition/interpretation of the 'domestic/other' sector
- Differing classification of 'Irish' vs. 'Foreign' across datasets (i.e. Financial Services & Food/Drink MNEs)
- Differing classifications: ABSEI (IE-owned vs. foreign-owned) & CSO PS (foreign-dominated sectors vs. domestic/other sectors)

Appendix B2: Preliminary Results: Labour Productivity by Sector

Comparing LP for 'IE-owned' (ABSEI) versus '**domestic & other**' (CSO)

Further analysis of sectoral trends will be undertaken

Table: Labour Productivity – 'Irish' (or SEA client companies) vs. 'Domestic/Other'

	2012	2013	2014	2015	2016	2017	2018	2019	2020 (COVID)	2021 (COVID)
ABSEI	76	80	83	86	90	90	94	99	96	108
CSO	83	82	85	87	86	88	91	93	90	90
Difference	-8%	-3%	-2%	-1%	+5%	+2%	+3%	+7%	+7%	+20%

Source: CSO, ABSEI, Authors own calculations

Appendix B3: Preliminary Results: Labour Productivity by Sector

Comparing LP for ‘IE-owned’ (ABSEI) versus ‘**Irish-owned**’ (CSO)

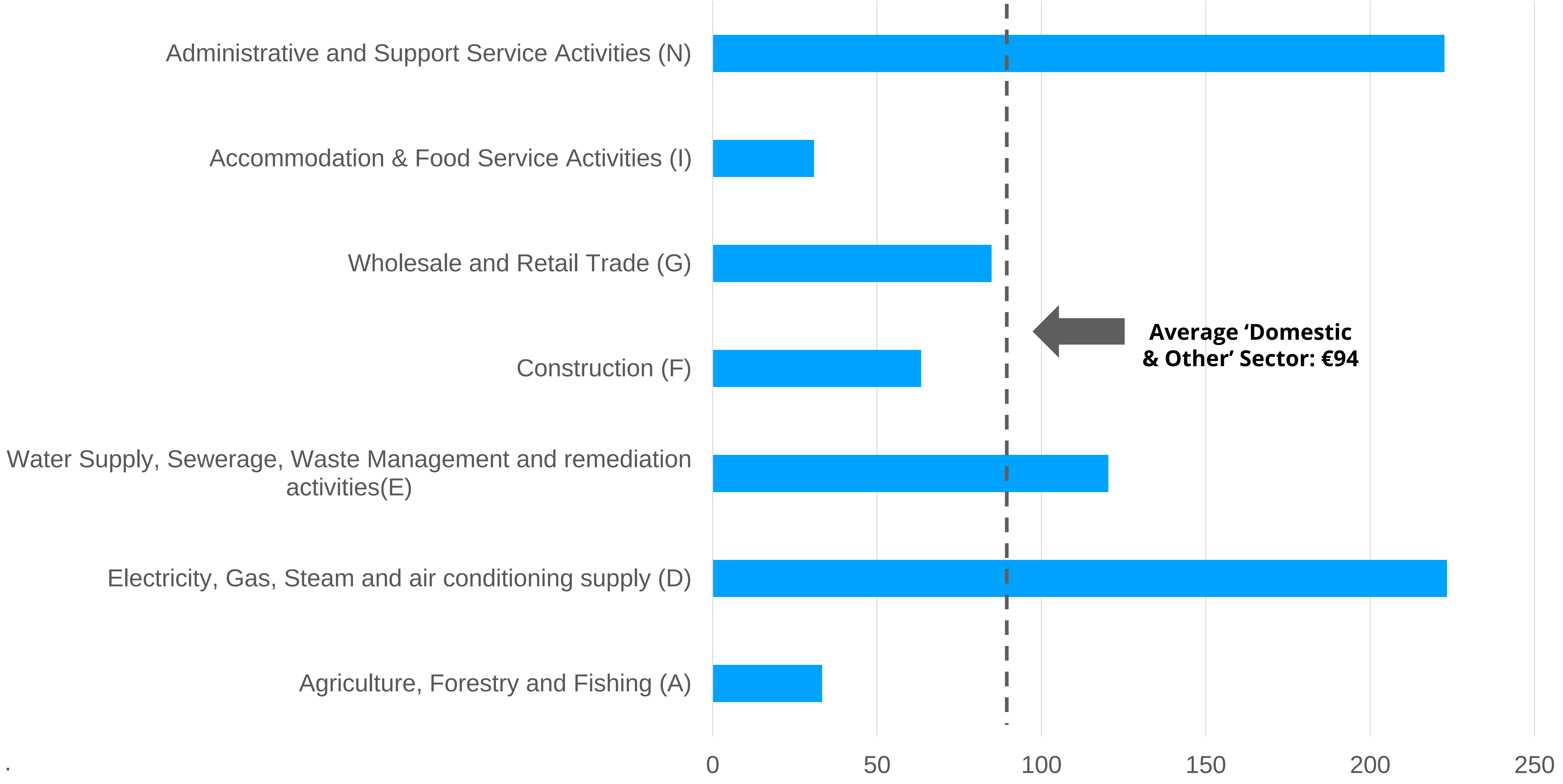
Further analysis of sectoral trends will be undertaken

Table: Labour Productivity – ‘Irish’ (or SEA client companies) vs. ‘Domestic/Other’

	2013	2014	2015	2016	2017	2018	2019	2020 (COVID)	2021 (COVID)
ABSEI	80	83	86	90	90	94	99	96	108
CSO	61	62	62	62	63	64	67	72	78
Difference	+30%	+34%	+40%	+45%	+43%	+46%	+48%	+33%	+38%

Source: CSO, ABSEI, Authors own calculations

Appendix B4: Preliminary Results: Labour Productivity by Sector, 2019



Source: CSO

Appendix C1: CSO's Structural Business Statistics (SBS) 2020

CSO Productivity Statistics 'Foreign' GVA in 2020 (narrow band of sectors): €186bn

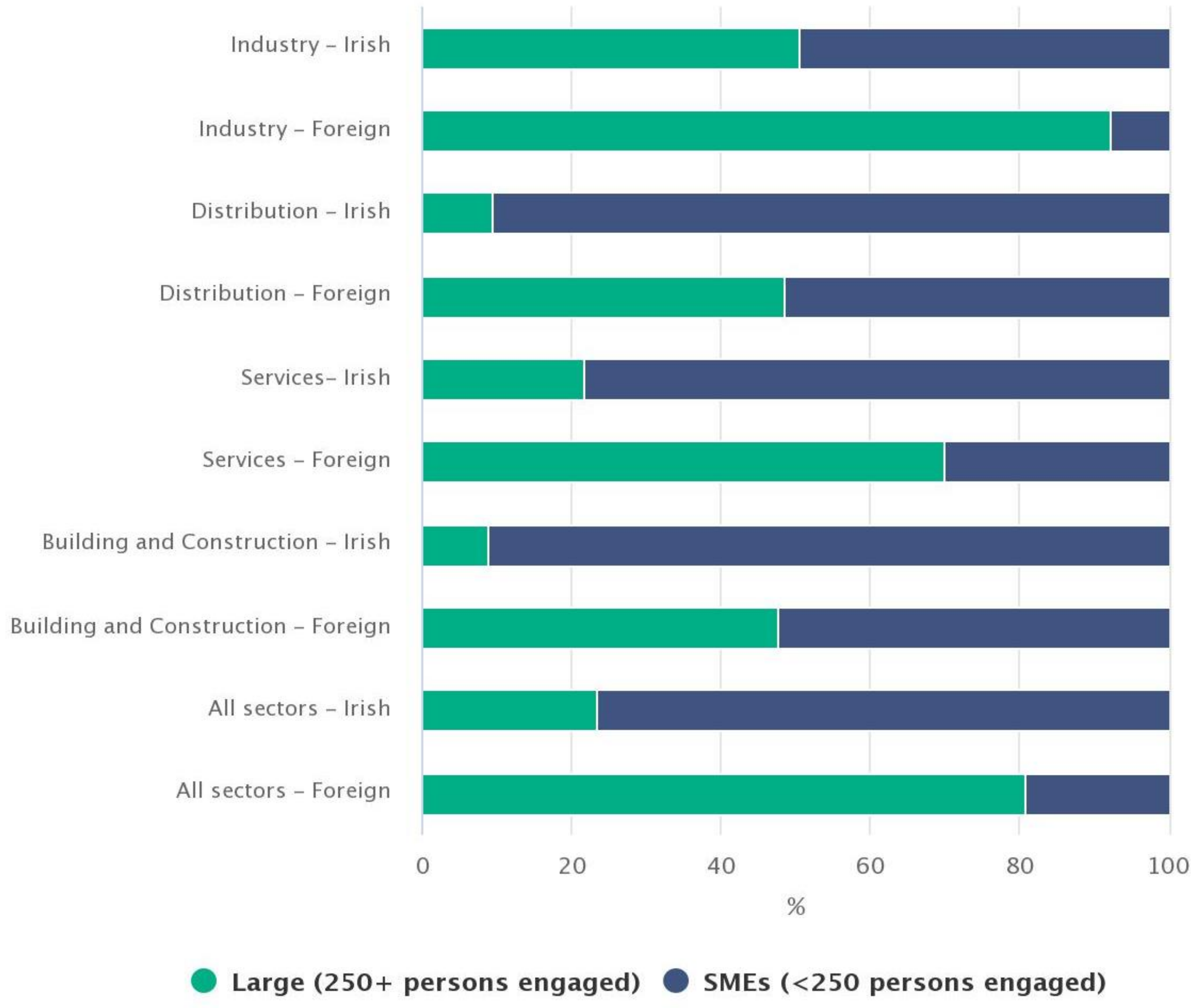
SBS 'Foreign' GVA* in 2020: €200bn (73% of Total GVA, up from 69% in 2019)

- Industry
- Distribution
- Services
- Building & Construction

Difficult to isolate purely non-exporting firms from CSO Productivity Statistics

*GVA for SBS is at factor cost.

Figure 15: Breakdown of Gross Value Added by sector, nationality of ownership and size class, 2019

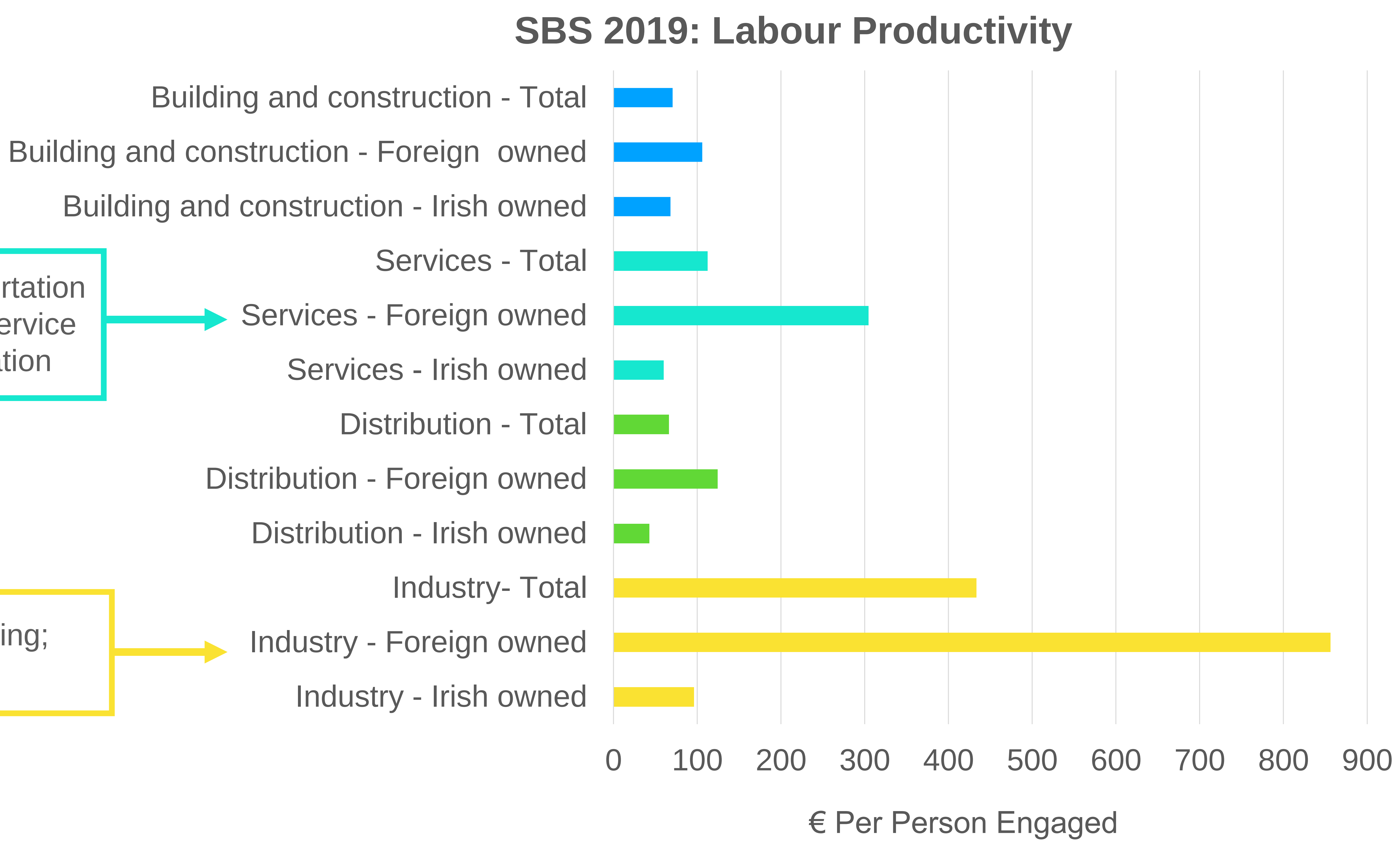


Source: CSO Ireland

Appendix C2: Structural Business Statistics 2019: Labour Productivity

E.G. Wholesale and retail trade; Transportation and Storage; Accommodation & Food Service Activities; Information and Communication

E.G. Mining and Quarrying; Manufacturing; Electricity; Water Supply;



Source: CSO
NOTE: The classification is determined by the nationality of the owners of 50 per cent or more of the share capital.

Appendix D: Preliminary Results: COE and GOS

What is driving the divergence in GVA in CSO and ABSEI?

- *Compensation of Employees (COE) vs Gross Operating Surplus (GOS) <u>or profit</u>*

Both CSO and ABSEI show increase in GOS for ‘Foreign’ **but** rate of growth has been increasing faster in CSO data

- *CSO +505%*
- *ABSEI +154%*

For CSO data, profit now accounts for c.90% of GVA for the foreign sector (compared to c.50% in the rest of the economy)

This is a key determinant in the greater divergence in CSO’s Labour Productivity ‘foreign’ data, however further analysis of estimates is required