

“Ireland’s Productivity Challenge – exploring Eurostat cross-country sector-size data for insights”

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“Productivity is not everything but in the long-run it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker” (Paul Krugman 1994)

- Generates
 - wages/other labour returns,
 - margins/profits/interest, and
 - taxes/community surpluses
- Determines competitiveness in global market-place
- Can enable spread of economic capability throughout population
- With working population stable in long-term, only way to increase incomes.

What is Republic of Ireland's Productivity?: a challenging question to ask

- A widely held narrative of very highly productive Multinational Company sector and a much less productive Domestic company sector and/or SME sector (enterprises with less than 250 employees).
- CSO "Productivity in Ireland 2019"
 - "measurement and analysis of productivity in Ireland is a challenging undertaking due to the scale and concentration of globalisation activities in the economy, ... especially since 2015" meaning imports of Intellectual Property Products (IPP), depreciation on aircraft leasing, redomiciled PLCs etc.
 - "labour productivity in the foreign sector is almost entirely driven by swings in GVA"
 - "emphasises the importance of looking beyond the national aggregate rate and focusing on the Domestic and Other sector"
- National Accounts
 - 2019 GDP
 - Total 356,526 mill euro - per person in employment 153,510 euro
 - 2019 Modified GNI*
 - Total 215,555 mill euro - per person in employment 92,812 euro
 - 40% less, brings RoI from 2nd in EU to 8th in EU (Honohan (2021))
- Gap translates into attempting sectoral and size comparisons

Context of Recent Substantial Systematic Analysis

- CSO (2022) “Productivity in Ireland 2019”
- European Commission (2020) “European Panorama of Clusters and Industrial Change”
- Honohan, P. (2021) “Is Ireland really the most prosperous country in Europe?” Central Bank
- Jordan, D. (2022) “Northern Ireland’s Productivity Challenge: Exploring the issues” (NERI Blog)
- Kostarakos, I., McQuinn K., Varthalitis, P. (2022) “Is Ireland the most Intangible Intensive Economy in Europe?” ESRI
- KPMG, FAC, TUD (2019) “Economic analysis of productivity in the Irish construction sector” DPRI
- Lawless, M., Redhill, L (2021) “Productivity dispersion and sectoral labour shares in Europe” OECD
- Mac Flynn, P. , Goldrick-Kelly, P. (2019) “Productivity on the Island of Ireland - A tale of three economies” NERI
- National Competitiveness and Productivity Council Bulletin 21-5 2 “Firm Dynamism and Productivity” (2021) and “Productivity Statement 2019” (2019)
- OECD (2019), “SME and Entrepreneurship Policy in Ireland, OECD Studies on SMEs and Entrepreneurship”, OECD Publishing, Paris, <https://doi.org/10.1787/e726f46d-en>.
- OECD (2021) “Compendium of Productivity Indicators” OECD Publishing, Paris
- Papa J., Redhill, L, O’Connor, B. (2018) “Patterns of Firm Level Productivity in Ireland” Department of Finance (NERI Workshop 2018)
- Papa, J.(2019) “What is behind aggregate productivity growth in Ireland? A granular approach” DBEI

Basic Approach

- **Eurostat database** – industry- **structural business stats**, for industry, construction, trade and services – employment by size sector – publically available database at <https://ec.europa.eu/eurostat/web/main/data/database>
- Data-base dimensions comprise countries (all EU/EFTA), size categories (0-9,10-19,20-49,50-249, 250+), sectors (NACE Rev 2 B-N to three digit level), Features (enterprise nos etc.), timeline (2005-2020)
- Data selection used six countries (Denmark, Germany, France, Finland, UK, Ireland), all size categories, sectors in Rol in order of 5k jobs (15k for more details), four features of enterprise nos, persons engaged, turnover per person, gross value per person, and years 2005, 2010, 2015, 2017, 2018, 2019, 2020.
- Analysis yielded ratios of sectoral six country productivity (with Germany as base 1.0), and selected changes over 2019/10, size structure ratios, sectoral comparisons by size etc.
- **Focus on absolute levels** relative to other economies,(not so much on growth rates), on company **size structure** as feature and on operational implications
- Measures used is **labour productivity of Turnover (Gross Added Value) per person engaged (Limited data available on GVA/Hours worked also examined)**
- Data limits include gaps (large cos, some sectors, some years), collection, some mis-entries, questions over some add-ups etc., comparing different years (UK)
- **Basic statistical examination** with operational focus, as add-on to CSO/DOF/ESRI/others comprehensive econometric analysis – **a work-in-progress!**
- **Preliminary figures, and based on data as presented**

MANUFACTURING +		CONSTRUCTION +	RETAIL/WHOLESALE+ TRANSPORT	ACCOMODATION + FOOD SERVICE	SERVICES (PRIVATE, NONFINANCIAL)
B MINING 5k C MANUFACTURING 239k		D ELECTRICITY 10k E WATER 11k F CONSTRUCTION 158k	G RETAILWHSALE 390k H TRANSPORT 109k	I ACCOMODATION AND FOOD SERVICE 223K	J INFOR+ COMM 119k L REAL ESTATE 33k M PROF/TECH 171k N ADMIN SERV 167k
C10 FOOD PRODUCTS 52k C101 MEAT 22k C102 FISH 2k C105 DAIRY 9k C108 OTHER FOODS 8k (C11 BEVERAGES)	C24 BASIC METAL 4k C25 FAB. METAL 17k C 26COMPUTER 15k C 27 ELCTRICAL 5k C28 MACHEQUIP10k	F 41 CONSTRUCTION OF BUILDINGS 43k F 42 CIVIL ENG. 11k F43 SPECIALISED CONSTRUCTION 106k	G 45 TRADE MOTOR 39k G 46 WHSALE 114k G47 RETAIL238k	I 55 ACCOMMOD. 72K I 56 FOOD SERVICES 151K	(J 58 PUBLISHING) J59 MOTION PICT./TV/VIDEO 9k J61 TELECOMMS ? J62 COMP. PROG 68k J63 INFOR SERVICES4k
C16 WOOD PRODS 6k C17 PAPER PRODS 3k C18 PRINTING 6k C22 RUBBER/PLASTIC 10k C23 OTHER NON METALIC MINERAL PRDS 10k C31 FURNITURE PRS 5k	C29 MOTORVECH 4k C33 REPAIRSMEQ 3k		H49 LAND TRANS 59k H 51 AIR TRANSPORT H 52 WAREH' 19K		M69 LEGAL/ACC. 53k M70 MAN. CONS. 43k M71 ARCH/ENG. 36k
C20 CHEMICAL PRODS 7k C21 PHARMA PRODS 15k (C32 OTHER MAN) C325 MEDICALDEVICES23k					(N82 BUSINESS SUPPORTS) N822 CALL CENTRE 9k

QUESTIONS TO EXPLORE

- **How exceptional is Republic of Ireland's productivity performance?**
- **To what extent does enterprise size play a factor?**
- **How competitive is Rol's productivity rankings across sectors and size?**
- **What are policy implications, if any?**

QUESTIONS TO EXPLORE

- **HOW EXCEPTIONAL IS THE REPUBLIC OF IRELAND'S PRODUCTIVITY PERFORMANCE?**
- **To what extent does enterprise size play a factor?**
- **How competitive is RoI's productivity rankings across sectors and size?**
- **What are policy implications, if any?**

Comparative Turnover pp (GVA pp) 2019 (GERMANY =1.00)

	MANUFACT. +		CONSTRUCTION+			RET/WH/TRANSP		ACCFDS	SERVICES		
SECTOR	<u>C</u> MAN	<u>B</u> MIN	<u>F</u> CON	<u>D</u> EL	<u>E</u> WAT	<u>G</u> R/W	<u>H</u> TR	<u>I</u> ACCFDS	<u>J</u> INF+COM	<u>M</u> PROF	<u>N</u> AD
Denmark	1.4(1.6)	2.8 (5.5)	1.7(1.5)	2.3(2.7)	1.8(1.8)	1.2(1.3)	2.9(2.1)	1.5(2.7)	1.0(1.1)	1.5(1.5)	1.5(1.4)
Germany	1.0 (1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)	1.0(1.0)
Ireland	3.9 (5.8)	1.2 (1.1)	1.7(1.5)	0.7(1.8)	1.1(0.9)	1.5(1.3)	1.6(1.3)	1.3(1.1)	7.1(4.7)	1.9(1.3)	3.5(3.1)
France	1.2 (1.0)	1.2 (0.9)	1.5(1.3)	0.4(1.1)	0.9(0.6)	1.3(1.1)	1.1(1.3)	2.3(1.9)	1.1(1.1)	1.2(1.2)	1.1 (1.1)
Finland	1.4 (1.0)	1.0(1.1)	1.5(1.2)	0.7(2.1)	1.3(1.2)	1.2(1.1)	1.2(1.2)	2.1(1.6)	1.1(1.1)	1.1 (1)	1.0(1.0)
UK 2017/5	1.0 (1.2)	3.2 (3.4)	1.7(0.9)	0.4(1.0)	0.9(1.1)	1.0(0.9)	1.2(1.5)	1.3(1.3)	0.9(1.1)	1.2 (1.4)	1.6(1.5)

- OF 66 BROAD SECTOR/COUNTRY COMPARISONS, FIVE EXCEED A RATIO OF 3/1
- REPUBLIC OF IRELAND HAS THREE – MANUFACTURING, INFORMATION + COMMS, BUSINESS SUPPORT
- TWO OTHERS ARE UK AND DENMARK – BOTH IN MINING

Republic of Ireland over(under)performs in 4(6) of 16 Manuf. Sectors (Comparative Turnover pp (GVA pp) 2019)

Sector	Denmark	Germany	Ireland	France	Finland	UK
Food products	2.3 (1.8)	1.0 (1.0)	1.8 (2.6)	1.4 (1.3)	1.2(1.4)	1.3 (1.9)
- Dairy	n/a	1.0 (1.0)	0.6 (0.7) !	0.7 (0.8)	0.6 (0.8)	0.8 (1.5)
- Meat	2.1 (2.5)	1.0 (1.0)	1.0 (1.3)	1.2(1.3)	1.0(1.5)	1.3 (1.6)
- Other foods	0.9 (1.1)	1.0 (1.0)	4.0 (6.4)	1.2 (1.0)	0.9 (1.1)	0.8 (1.2)
- Fish	2.0 (1.2)	1.0 (1.0)	0.5 (0.7) !	1.0 (0.9)	1.0 (0.7)	0.7 (0.9)
Wood	1.0 (1.3)	1.0 (1.0)	0.9 (0.9)!	1.1 (0.9)	2.1 (1.3)	0.9 (1.4)
Furniture	1.5 (1.5)	1.0 (1.0)	1.0 (1.0)	0.9 (0.9)	0.9(0.9)	0.7 (0.8)
Paper product	1.0 (1.1)	1.0 (1.0)	0.6 (0.5) !	1.1 (0.9)	2.9 (1.6)	1.0 (1.4)
Printing	n/a	1.0 (1.0)	1.0 (1.1)	1.2 (1.2)	1.2 (1.2)	n/a
Plastic/rubber	1.1 (1.4)	1.0 (1.0)	0.8 (0.9) !	1.3 (1.2)	1.3 (1.2)	1.0 (1.2)
Non-metals	1.2 (1.4)	1.0 (1.0)	1.0 (1.0)	1.3 (1.0)	1.2 (1.0)	1.0 (1.0)
Chemicals	0.8 (1.3)	1.0 (1.0)	1.7 (3.0)	1.0 (0.9)	0.9 (1.0)	0.8 (1.0)
Pharma	1.3 (1.5)	1.0 (1.0)	7.0 (6.7)	1.4 (0.9)	1.0 (1.4)	1.3 (1.6)
Metal fab	1.3 (1.3)	1.0 (1.0)	1.1 (0.8) !	1.3 (1.0)	1.2 (1.0)	0.9 (1.0)
Computer	1.0 (1.3)	1.0 (1.0)	3.2 (2.8)	1.1 (0.9)	3.9 (1.2)	0.8 (1.0)
Machine eq	1.4 (1.2)	1.0 (1.0)	1.4 (1.4)	1.2 (1.0)	1.4(1.1)	1.0 (1.1)
Med devices	2.1 (2.2)	1.0 (1.0)	3.2 (3.1)	1.3 (1.8)	1.1 (1.4)	1.0 (0.9)

Republic of Ireland over(under)performs in 4(5) of 13 Service Sectors (Comparative Turnover pp (GVA pp) 2019)

Sector	Denmark	Germany	Ireland	France	Finland	UK
Retail	1.1 (1.0)	1.0 (1.0)	0.9 (1.0) !	1.5 (1.3)	1.5 (1.3)	1.0 (1.0)
Wholesale	1.1 (1.3)	1.0 (1.0)	2.0 (1.8)	1.1 (1.0)	1.1 (1.0)	1.1 (0.6)
Land transport	1.7 (1.5)	1.0 (1.0)	1.0 (0.9) !	1.1 (1.2)	1.2 (1.2)	1.2 (1.4)
Warehousing	2.3 (1.9)	1.0 (1.0)	1.4 (1.3)	1.7 (1.7)	1.4 (1.1)	1.1 (1.3)
Accommodation	1.8 (1.4)	1.0 (1.0)	1.1 (0.9) !	2.1 (1.7)	2.1 (1.4)	1.2 (1.1)
Food service	1.5 (1.3)	1.0 (1.0)	1.4 (1.2)	2.4 (2.1)	2.2 (1.7)	1.3 (1.3)
Motion picture	0.9 (0.9)	1.0 (1.0)	0.9 (0.8) !	1.0 (1.2)	0.9 (0.8)	1.8 (1.7)
Computer progr	1.1 (1.2)	1.0 (1.0)	6.1 (2.3)	1.0 (1.1)	0.9 (0.9)	0.9 (1.1)
Inform service	1.6 (1.3)	1.0 (1.0)	21.7 (1.3)	1.1 (0.9)	1.4 (1.2)	1.3 (1.9)
Real estate	1.4 (2.5)	1.0 (1.0)	0.6 (0.5) !	1.2 (1.0)	2.2 (1.6)	0.4 (0.5)
Legal/accounts	1.6 (1.6)	1.0 (1.0)	1.4 (1.1)	1.5 (1.4)	1.2 (1.1)	1.2 (1.3)
Man consult.	1.2 (1.4)	1.0 (1.0)	2.0 (1.9)	1.0 (1.0)	0.9 (1.0)	0.9 (1.3)
Call centres	0.9 (1.0)	1.0 (1.0)	1.3 (1.3)	1.2 (1.0)	0.9 (0.9)	1.1 (1.2)

Note: Over-performs, as in highest ratio. Under-performs, as in lower than 1.0.

Question 1: Findings/comments

- Republic of Irelands productivity levels, compared to other highly productive economies, is very exceptional
- Of 66 broad sector/country comparisons
 - Five exceed a ratio of 3/1 (Germany = 1.0)
 - Republic of Ireland has three – Manufacturing (4/1), Information + Comms (7/1) , Business Supports (3.5/1)
 - Two others are UK and Denmark – both in Mining
- Republic of Ireland over(under)performs in 4(5) of 16 Manufacturing Sectors, and in 4(6) of 13 Service Sectors
- Ireland/USA ratios include Pharma (5.8/1 2010), Medtech (2.0/1 2010), Computers (3.2/1 2019),Other Foods (2.8/1 2019) (US Dept of Labour)
- Much of explanation lies in “swings in GVA” and globalisation financial activities behind them, in the context of the GDP/GNI* ratio and gap
- Question arises for overseas dominated sectors, in that with “swings in GVA” driving nominal productivity levels, how to understand comparative operational real levels of productivity.
- Overall, MNCs in the Republic have brought significant benefits of employment, regional spread, output and exports and exchequer contribution, as well as some risks of over-reliance and similar issues.
- Such overseas operations in the Republic are regarded in general as highly and strongly operationally productive.
 - They are usually in leading edge global companies
 - They here tend to be newer plants and operations
 - Pandemic showed their productive power
 - There is a MNC wage premium
 - They are generally large companies

Questions to explore

- **How exceptional is the Republic of Ireland's productivity performance?**
- **TO WHAT EXTENT DOES ENTERPRISE SIZE PLAY A FACTOR?**
- **How competitive is Rol's productivity rankings across sectors and size?**
- **What are policy implications, if any?**

Turnover per person employed - sector-size comparison (Germany/Ireland)

	0-9	10-19	20-49	50-249	250+	L/M AVER
<u>C MANUFACTURING</u>						
Germany	0.3	0.3	0.4	0.5	1.0	4.0
Ireland	0.3	0.1	0.1	0.2	1.0	4.0
<u>F CONSTRUCTION</u>						
Germany	0.4	0.5	0.6	0.7	1.0	2.7
Ireland	0.5	0.5	0.5	0.6	1.0	2.0
<u>G RETAIL/WHOLESALE*</u>						
Germany	0.4	0.5	0.7	1.0	1.0	2.3
Ireland	1.0	1.0	1.6	1.3	1.0	1.0
<u>H TRANSPORT*</u>						
Germany	0.5	n/a	0.6	0.9	1.0	2.2
Ireland	0.3	1.8	0.5	0.5	1.0	3.2

*2-9

Turnover per person engaged - sector-size comparison (Germany/Ireland)

	0-9	10-19	20-49	50-249	250+	L/M AVER
<u>I ACCOMODATION/FOOD SERVICES*</u>						
Germany	0.5	0.5	0.5	0.7	1.0	1.9
Ireland	0.8	0.9	1.0	1.0	1.0	1.3
<u>J INFORMATION/COMMS*</u>						
Germany	0.3	0.4	0.5	0.6	1.0	2.8
Ireland 2018	0.1	0.1	0.2	0.2	1.0	11.6
<u>M PROFESSIONAL/TECHNICAL*</u>						
Germany	0.5	0.6	0.7	1.0	1.0	2.0
Ireland	0.5	0.5	0.5	0.7	1.0	2.2
<u>N ADMIN/BUSINESS SUPPORTS*</u>						
Germany	0.9	0.9	0.9	0.8	1.0	1.2
Ireland	3.9	3.2	6.3	2.2	1.0	0.3

*2-9

Question 2 Findings/comments

- Large/micro and size categories productivity ratios– three “types”
 - **Build-up 10/16**
 - From approx. 30% (Micro) to 100% (Large)
 - Manufacturing (Germany), Construction (both), Retail/Wholesale (Germany), Transport (both), Accommodation (Germany), Information/Comms (Germany), Professional (both)
 - **Balance 4/16**
 - SMES similar to, or even greater, than large companies – Retail/Wholesale (Ireland), Accommodation (Ireland), Admin/Business Support (both, with Irish SMEs higher than large cos)
 - **Big Gap 2/16**
 - Large companies are multiples of SMEs – Manufacturing (Ireland), Information/Comms (Ireland)
- Large companies (including MNCs) are in general more productive (2/1?) than SMEs – **economies of scale**
 - E.g. OECD Germany (2018) Business economy Large 100%, Medium 75% Small 59% Micro 56%
 - Question for within Large – how scaling from 300 v 3000 v 30,000 impacts on output per person?
- Also, **large productivity gap between the top performers and the rest (90/10) (DofF 2018)**
 - 6.6 (Ireland) v 6.6 (international) for manufacturing
 - 9.2 (Ireland) v 9 (international) for services
- Implies wide dispersal within sectors and within sector-sizes – “reflecting a high degree of **heterogeneity amongst firms** within a given sector” (DofF 2018) - Confirmed by company benchmarking experience etc.

Questions to explore

- **How exceptional is the Republic of Ireland's productivity performance?**
- **To what extent does enterprise size play a factor?**
- **HOW COMPETITIVE IS ROI'S PRODUCTIVITY RANKINGS ACROSS SECTORS AND SIZE?**
- **What are policy implications, if any?**

COMPARATIVE TURNOVER PER PERSON BY COUNTRY AND SIZE –
C MANUFACTURING

COUNTRY	0-9	10-19	20-49	50-249	250+	TOTAL
Denmark	2.2 H	2.0 H	1.8 H	1.6 M	1.4 M	1.4
Germany	1.0 L	1.0 L	1.0 L	1.0 L	1.0 L	1.0
Ireland	5.1 H	1.8 M	1.4 M	2.2 H	5.1 H	3.9
France	1.3 L	1.4 M	1.4 M	1.3 M	1.2 M	1.2
Finland	1.7 M	1.9 H	1.6 H	1.7 H	1.5 H	1.4
UK (2015)	1.7 M	1.5 M	1.0 L	1.1 L	1.1 L	1.0

F CONSTRUCTION

COUNTRY	0-9	10-19	20-49	50-249	250+	TOTAL
Denmark	2.1 H	1.5 H	1.6 H	1.6 H	1.1 L	1.7
Germany	1.0 L	1.0 L	1.0 L	1.0 L	1.0 L	1.0
Ireland	2.3 H	1.7 H	1.4 H	1.4 M	1.7 H	1.7
France	1.7 M	1.3 M	1.3 M	1.4 M	1.1 L	1.5
Finland	1.4 L	1.3 M	1.3 M	1.4 M	1.4 M	1.5
UK 2017	2.0 M	1.2 L	1.0 L	1.2 L	1.5 H	1.6

COMPARATIVE TURNOVER PER PERSON BY COUNTRY AND SIZE –

G RETAIL/WHOLESALE2

COUNTRY	2-9	10-19	20-49	50-249	250+	TOTAL
Denmark	1.8 H	1.6 H	1.5 M	1.3 H	0.9 L	1.2
Germany	1.0 L	1.0 L	1.0 L	1.0 L	1.0 M	1.0
Ireland	2.2 H	1.7 H	2.3 H	1.1 M	1.0 M	1.5
France	1.4 M	1.5 M	1.4 M	1.1 M	1.2 H	1.3
Finland	1.3 M	1.4 M	1.5 M	1.5 H	1.0 M	1.2
UK 2017	1.8 H	1.3 L	1.3 L	1.1 M	0.8 L	1.0

H TRANSPORT

COUNTRY	2-9	10-19	20-49	50-249	250+	TOTAL
Denmark	2.7 H		2.4 H	2.1 H	3.3 H	2.9
Germany	1.0 L	N/A	1.0 L	1.0 L	1.0 L	1.0
Ireland	1.5 L		2.1 H	1.2 M	2.1 H	1.6
France	1.8 M		1.4 M	1.1 L	1.1 M	1.1
Finland	1.8 M		1.8 M	1.3 M	1.1 M	1.2
UK 2017	1.2 L		1.5 M	1.2 M	1.1 M	1.2

COMPARATIVE TURNOVER PER PERSON BY COUNTRY AND SIZE –

I ACCOMODATION+ FOOD SERVICE

COUNTRY	2-9	10-19	20-49	50-249	250+	TOTAL
Denmark	1.7 M	1.6 M	1.5 M	1.7 M	1.0 M	1.5
Germany	1.0 L	1.0 L	1.0 L	1.0 L	1.0 M	1.0
Ireland	1.2 L	1.5 M	1.6 M	1.3 M	0.8 L	1.3
France	2.0 H	2.1 H	2.3 H	2.6 H	1.7 H	2.3
Finland	2.0 H	2.2 H	2.4 (2015) H	1.9 (2015) H	1.4 H	2.1
UK 2017	1.3 M	1.1 L	1.1 L	1.1 L	0.9 L	1.3

J INFORMATION + COMMUNICATIONS

COUNTRY	2-9	10-19	20-49 (2018->)	50-249	250+	TOTAL
Denmark	2.0 H	1.8 H	1.6 H	1.2 M	0.9 L	1.0
Germany	1.0 L	1.0 L	1.0 L	1.0 L	1.0 M	1.0
Ireland	2.0 H	2.1 H	3.6 H	3.4 H	8.4 H	7.1
France 2018	1.6 M	1.3 M	1.3 M	1.1 L	1.0 M	1.1
Finland	1.3 L	1.3 M	1.5 M	1.7 H	0.9 L	1.1
UK 2018	1.5 M	1.1 L	1.2 L	1.3 M	1.2 H	1.0

COMPARATIVE TURNOVER PER PERSON BY COUNTRY AND SIZE –

M PROFESSIONAL+TECHNICAL

COUNTRY	2-9	10-19	20-49	50-249	250+	TOTAL
Denmark	2.1 H	1.7 H	1.4 H	1.3 H	1.3 H	1.5
Germany	1.0 L	1.0 L	1.0 L	1.0 M	1.0 L	1.0
Ireland	2.0 H	1.9 H	1.4 H	1.5 H	2.2 H	1.9
France	1.7 M	1.4 M	1.2 M	1.1 M	1.2 M	1.2
Finland	1.3 L	1.4 M	1.1 M	1.0 M	0.8 L	1.1
UK 2017	1.5 M	1.0 L	0.8 L	0.8 L	1.4 M	1.2

N ADMINISTRATION+BUSINESS SUPPORT

COUNTRY	2-9	10-19	20-49	50-249	250+	TOTAL
Denmark	2.2 H	2.1 H	1.9 H	2.3 H	0.7 L	1.5
Germany	1.0 L	1.0 L	1.0 L	1.0 L	1.0 H	1.0
Ireland	3.7 H	2.9 H	5.6 H	2.2 H	0.8 M	3.5
France	1.6 M	1.4 M	1.2 L	1.5 M	0.8 M	1.1
Finland	1.5 L	1.4 M	1.4 M	1.2 L	0.6 L	1.0
UK 2017	1.8 M	1.4 M	1.6 M	1.9 M	1.7 H	1.6

High Performers: Six Economies Productivity Rankings by Size and sector (2019)

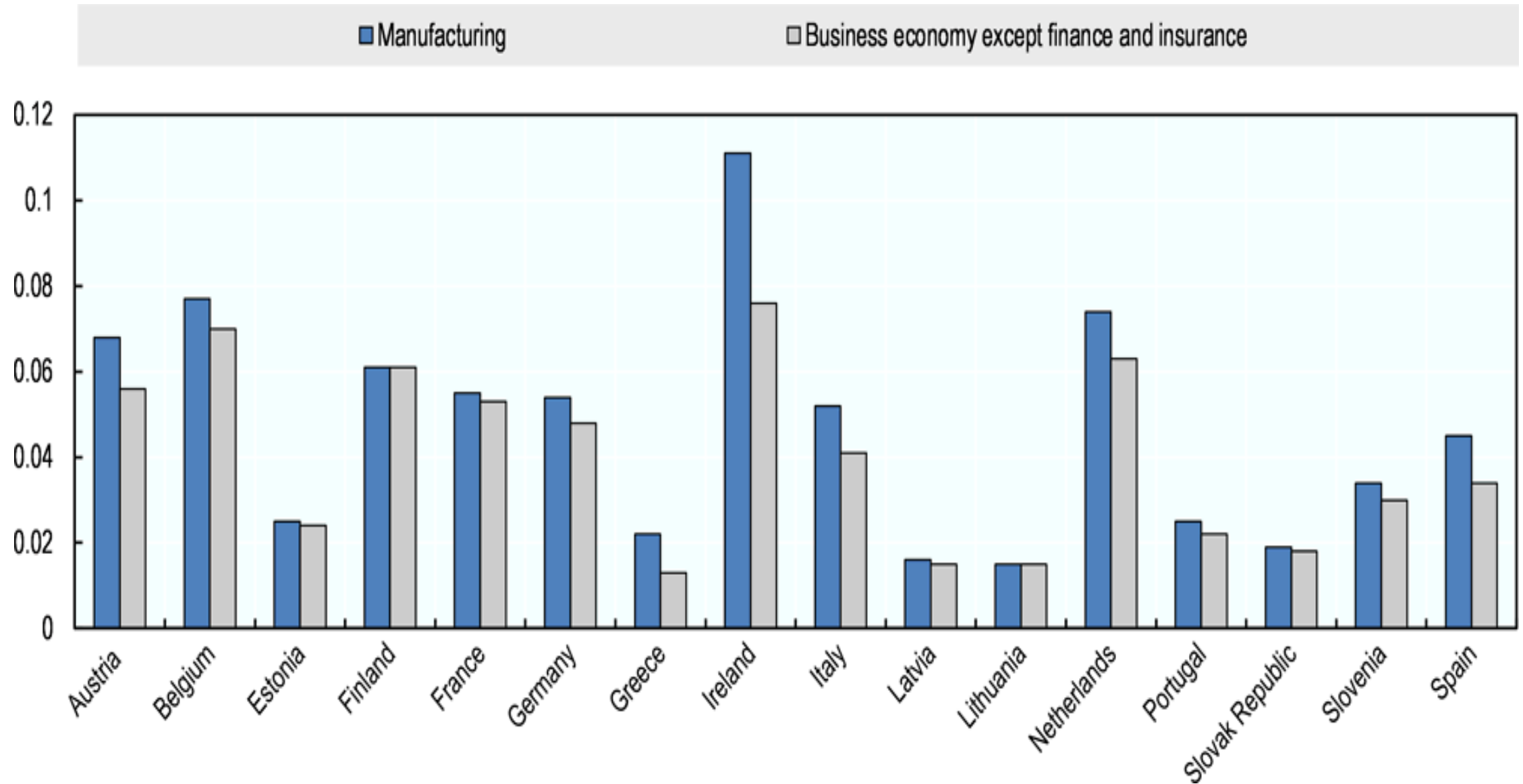
	0-9	10-19	20-49	50-249	250+	<u>Sum</u>	Man C	Con F	Ret G	Tran H	Acc I	Info J	ProM	Ad N
Denmark	7	6	6	5	2	26	3	4	3	4	0	3	5	4
Germany	0	0	0	0	1	1	0	0	0	0	0	0	0	1
Ireland	6	5	6	4	5	26	3	4	3	2	0	5	5	4
France	1	1	1	1	2	6	0	0	1	0	5	0	0	0
Finland	1	2	2	4	2	11	4	0	1	0	5	1	0	0
UK	1	0	0	0	3	4	0	1	1	0	0	1	0	1
Total 6	16	14	15	14	15	74	10	9	6	10	10	10	10	10
Irel %	33%	31%	40%	29%	33%	35%	30%	44%	33%	33%	0%	50%	50%	40%

Max each country possible is by Size 8, by Sector 5
Total max High/M/L is by Size is 8 sectors x2 ie 16, and for all is 16x3 48; by Sector 5 sizes x2 ie 10 and all is 10x3 30

Question 3: Findings/comments

- In ranking comparisons of sector and size of six globally very productive economies,
 - Denmark (26) and Ireland (26) both have greatest number of High rankings
 - Finland (11) has next number of High rankings
 - France (6), UK (4) and Germany (1) have the least number of High rankings
- Republic of Ireland has
 - most High rankings in Infor/Comm, Prof/Tech, Construction
 - middling High rankings in Retail/Wholesale, Admin/Business Support, Transport, Manufacturing
 - Least (zero!) High rankings in Accommodation
- Based on Eurostat data as examined, the Republic of Ireland overall has relatively high levels of operational productivity, with some significant gaps.

Labour productivity of SMEs Euros, millions, 2016 (OECD 2019)



Implication of GVA/Hours analysis

- *“Labour productivity by enterprise size class is measured as gross value added in current prices per person employed. Labour input is measured as total employment, which includes employees and all other paid or unpaid persons who worked for the concerned unit during the reference year. Data on hours worked by all persons employed are typically not available by enterprise size class.”* OECD Compendium on Productivity Indicators (2021)
- Eurostat data on GVA/hours by enterprise size and sector is limited to Manufacturing and Construction, with some comparators missing (Denmark, France).
- Results for Manufacturing suggest Ireland, with T/O pp is High in 3 of 5 as well as Total Sector, and Medium in 2 other size categories. With GVA/Hours, Ireland is High in 4 of 5 size categories and well as Total Sector, and now Low in one size category (20-49).
- Results for Construction suggest Ireland, with T/O pp is High in 4 of 5 size categories as well as Total Sector. With GVA/Hours Ireland is High only in two size categories, Medium in two size categories and Low in one, as well as (still) High in Total Sector, in comparison with the four of six comparators with data. Overall, Ireland is in middle ranking productivity group for this sector.
- Overall, while there are some changes in relative rankings when GVA/Hours is used rather than T/O pp, the Total Sector rankings and overall message remains broadly the same.

GVA/hours worked by employees (Eurostat)

CONSTRUCTION

MANUFACTURING

	ALL	1-9	10-19	20-49	50-249	250+	ALL	1-9	10-19	20-49	50-249	250+
Belgium	71.7 H	113.8 H	51.8 H	58.2 H	56.1 H	60.4 H*						
Denmark	N/A											
Germany	39.1 L	38.8 L	33.6 M	37.0 H	42.3 H	49.2 M	55.0 M	35.2 L	32.4 L	34.3 M	40.8 M	65.9 M
Ireland	48.8 H	60.7 M	29.8 L	33.4 M	42.0 H	60.9 H*	241.9 H	95.4 H	45.3 H	26.9 L	65.2 H	421.2 H+
France	N/A											
Finland	43.3 M	54.3 M	36.5 H	35.8 M	38.3 M	47.2 M	57.3 M	54.8 M	40.5 M	40.2 H	47.5 M	68.5 M
UK	41.3 M	80.8 H	27.6 L	22.8 L	28.2 L	41.8 L	40.8 L	65.1 M	33.8 L	29.4 L	32.4 L	46.5 L

Questions to explore

- **How exceptional is the Republic of Ireland's productivity performance?**
- **To what extent does enterprise size play a factor?**
- **How competitive is Rol's productivity rankings across sectors and size?**
- **WHAT ARE POLICY IMPLICATIONS, IF ANY?**

Policy – what now

- **“... THE DYNAMICS THAT DRIVE THE MAIN CHANNELS FOR AGGREGATE PRODUCTIVITY GROWTH ... (DofF 2018)**
 - **PRODUCTIVITY GROWTH AT THE PRODUCTIVITY FRONTIER,**
 - **DIFFUSION OF TECHNOLOGY FROM THE FRONTIER TO LAGGING FIRMS,**
 - **A REALLOCATION OF RESOURCES FROM THE LEAST PRODUCTIVE TO THE MOST PRODUCTIVE”**
- **KLEMS AND QALI ANALYSIS AT SECTORAL LEVEL ALLOWS FOR GREATER FOCUS ON LEVERS OF CHANGE (EG AFS INCREASE IN QUALITY NOT QUANTITY OF LABOUR DROVE POSITIVE GROWTH 2019)**
- **BUSINESS ENVIRONMENT AT SECTORAL, REGIONAL, NATIONAL/ALL-ISLAND, AND EUROPEAN LEVELS**

National Competitiveness and Productivity Council

“Productivity Statement 2019” (2019)

- “The latest OECD Compendium of Productivity Indicators 2019 analyses the role of firm size in productivity performance across OECD countries. In terms of value added per person employed in 2016, **Ireland showed the biggest productivity gap** between SMEs (with less than 250 employees) and large firms (with more than 250 employees) of any OECD country; this result is driven mainly by the high-performing MNEs operating in Ireland.
- “As discussed in the NCC Productivity Statement 2018, policies designed to enhance Irish productivity should be comprehensive and tackle the many related elements
 - **within firms** (e.g. digitalisation, upskilling, innovation and knowledge-based capital),
 - **between firms** (e.g. economic integration, productivity spill-overs) and
 - **across industries** (e.g. infrastructure, diversification)

to ensure a more resilient, widespread and sustained growth of productivity in Ireland.”

- “The policy focus on productivity, including the recommendations in the recently-published OECD study SMEs and Entrepreneurship Policy , point to the need for **more analysis based on data dis-aggregated by size class and at enterprise level** (e.g. on firm characteristics such as exporting, finance, innovation, age, human capital).

OECD SME Report (2019) “A multi-pronged approach is needed to increase SME productivity growth”

- “Ireland has a comprehensive and solid set of support programmes for SMEs and entrepreneurship (available through EI, LEOs, Skillsnet, etc.)
- **“Ireland has many SMEs with low productivity compared to the frontier firms in their industry.** The causes include
 - prolonged use of low-productivity techniques,
 - underinvestment in capital,
 - weak management practices,
 - insufficient digital technology adoption and
 - limited direct entry into export markets.
- “A range of policy initiatives need to be applied to address this multifaceted issue. They include
 - increasing take up by SMEs of Skillnet Ireland management training programmes,
 - expanding vouchers for digitalisation processes in SMEs,
 - integrating international standards adherence in SME development programmes, and
 - increasing SMEs take up of R&D incentives.
- **“There is (also) scope to strengthen business advisory services**

Policy - What new ?

Strategic issues for further reflection

- What might be achievable and ambitious 10y real Productivity goal?
- What are the productivity pinch-points in Ireland's global economic system?
- How engage with global leading edge experience, through Ireland's rich and diverse capabilities, networks and global connections?
- Does Smart Specialisation and sector re-allocations have a role to play?
- What is regional dimension of productivity growth?

Issue : Is major real labour productivity growth (up to 35/40% ?) over decade achievable or/and ambitious enough?

TURNOVER PER PERSON -% CHANGE 2010/19

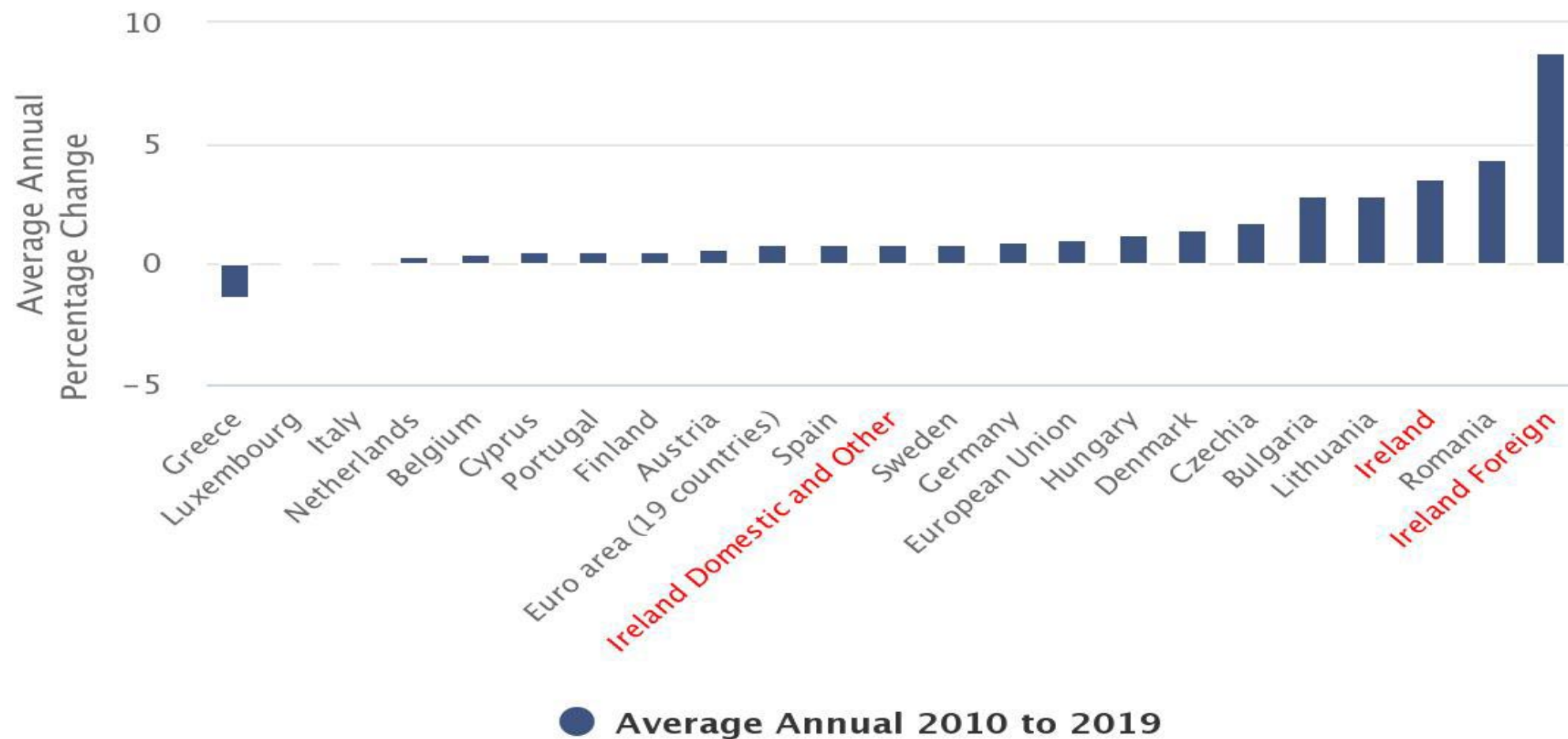
	MANUFACTUR. +		CONSTRUCTION+			RET/WH/TR		ACC+FDS	SERVICES		
SECTOR	<u>C</u> MAN	<u>B</u> MIN	<u>F</u> CON	<u>D</u> EL	<u>E</u> WAT	<u>G</u> R/W	<u>H</u> TR	<u>I</u> ACC+FDS	<u>J</u> INF+COM	<u>M</u> PROF	<u>N</u> AD
GERMANY	1.2	1.5	1.2	0.8	1.0	1.2	1.1	1.4	1.0	1.2	1.4
IRELAND	1.9	1.0	1.3	1.4	1.2	1.3	1.3	1.1	1.7	1.2	1.2
FINLAND	1.2	0.9	1.3	1.0	1.1	1.0	1.1	1.1	1.2	1.1	1.0

OF 41 SUBSECTORS IN GERMANY, IRELAND + FINLAND, 33% OF THREE-COUNTRY CASES THAT SHOW POSITIVE GROWTH 2010-2019 HAVE RATES OF 30% + (IRELAND 44%)

RATE OF GROWTH (T/O PP)	THREE COUNTRY CASES (IRELAND)
</=1.0	27(16)
1.0-1.1	19 (5)
1.1-1.2	21 (2)
1.2-1.3	14(3)
1.3-1.4	12(2)
1.4-1.5	9(4)
1.5+	6(2)
N/a	15 (7)
TOTAL	123 (41)

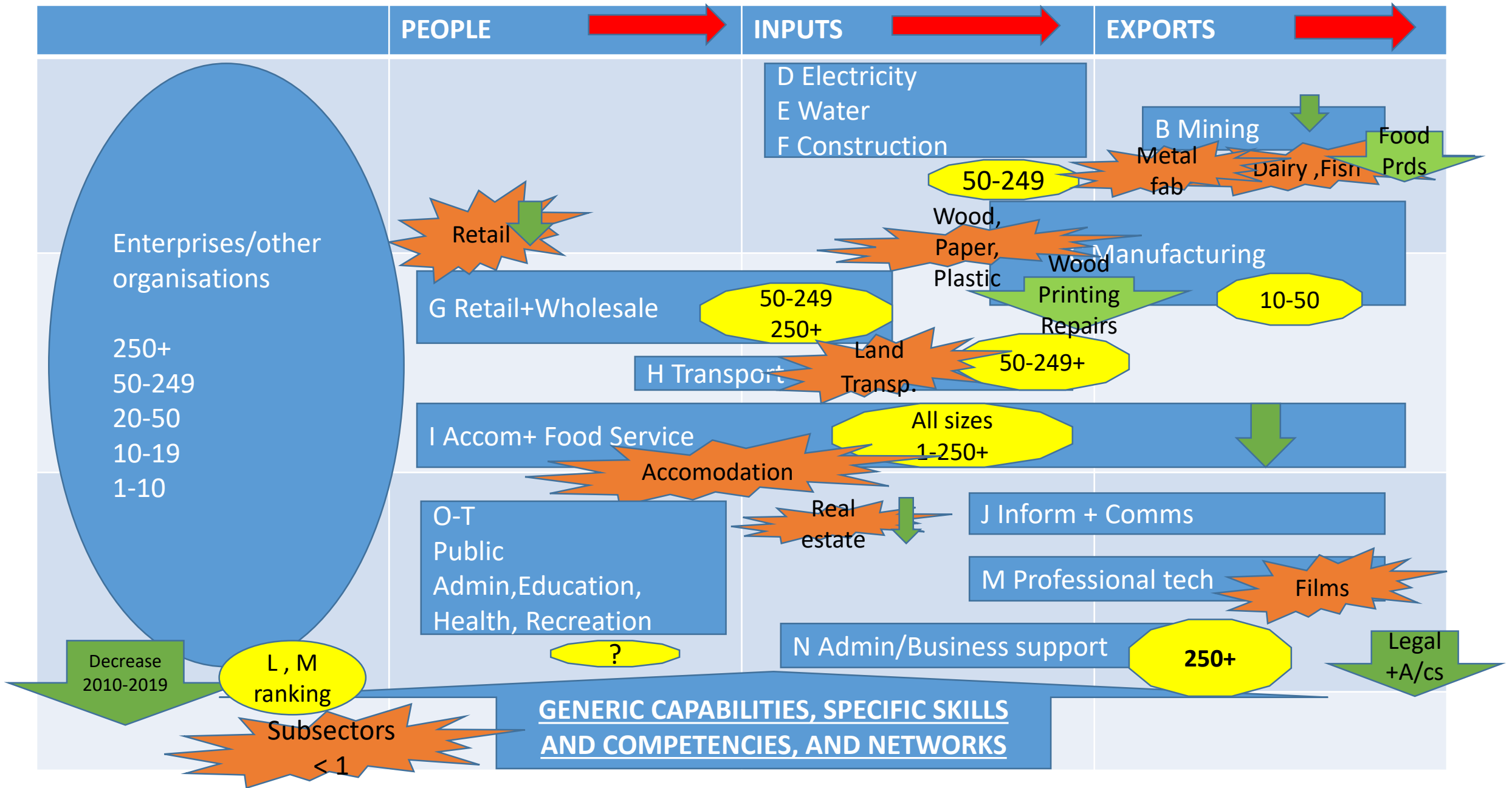


Figure 2.11: Labour Productivity – Average Annual Growth 2010 to 2019



Source: CSO Ireland

Issue Where are Possible Productivity Pinch-points in Ireland's Small Open Economy System?



Policy - What new ?

Strategic issues for further reflection

- What might be achievable and ambitious 10y real Productivity goal?
- What are the productivity pinch-points in Ireland's global economic system?
- How engage with global leading edge experience, through Ireland's rich and diverse capabilities, networks and global connections? With "*high degree of heterogeneity amongst firms*" much more diverse than MNCs operations here  SMEs general assumption
- Does Smart Specialisation and sector re-allocations have a role to play? With "*within sector differences as the main driver of overall (productivity) variation*" ?
- What is regional dimension of productivity growth? With higher productive large company % jobs in e.g. Dublin (47%) v Borders/NW (12%)

Issue –As “high degree of heterogeneity amongst firms”, how engage with global leading edge experience? – Through Ireland’s rich and diverse capability, networks and global connections.

- MNCs operations here  SMEs as general assumption?
- Large sophisticated organisations in many countries, with new operations with latest technology
- Large Irish companies also (12+/30 top companies), with multi-plants/global sectoral leadership
- Many SMEs here and overseas at best practice level – power of concentration and focus
- Shift to few tier one global suppliers -> less % of spend (and suppliers) locally (also opportunity)
- Decision-makers and/or leading edge practices are somewhere else within MNC – plant mandates
- Not generally in direct market competition - major transmission means
- Also, purchase best-practice SME as way of entry – 2way
- Large Cos participate to learn in SME /Born Global Start-ups innovation eco-system – 2 way
- Best practice learning for all types organisations – Large(Irish/MNC), Medium, Small/Micros
- Best in class within global sector often can be elsewhere – we are a regional Small Open Economy!
- Practice transfer between sectors – Toyota (Wales), Dell, Combilift, Plato, EI/IDA Ireland Mission
- Skills in people moving jobs between different types – often 2way
- Other mechanisms – specialist capital providers, global hires, non-Execs, networks, grads, etc.
- HEI’s as key mechanism – MIT Local Innovation System <http://web.mit.edu/lis/>
- “Hang around with the best in the world – whoever and wherever they are!”

Issue Spatial Clusters and Productivity in Regions of Ireland

“Productivity is 25% higher in regional industrial clusters than that for all industries... In high performing clusters average wages and productivity are very high, at more than double the rate of that for all industries” EU Panorama Report on Clusters and Industrial Change

Clusters	Northern Ireland (11)	Northern /Western (3)	Eastern/Dublin (16)	Southern (8 imputed)
High	Non-metallic mining	(Medical Devices)	Information Technology Insurance Services Medical devices	Information Technology Medical devices
Medium	Biopharmaceuticals Recreational and small electronic goods	Communication Equipment/Services	Transportation and Logistics Vulcanised/Fired materials Business services Printing services Communications Equipment/Services Distribution and electronic commerce Education Knowledge Clusters Financial Services	Biopharmaceuticals Transportation and Logistics Printing services Financial Services
Low	Vulcanising/fired materials Livestock processing Furniture /Wood Products Environmental Services Construction Products/Services Downstream Chemical Products Electric Power Generation	Biopharmaceuticals Lightening and Electrical Equipment	Appliances Video production and distribution Hospitality and tourism Jewelry and precious metals Paper and Packaging	Upstream Chemical Products Hospitality and tourism
% of jobs in large enterprises 250+		Border 12% West 16%	Dublin 47% Mideast 17% Midland 8%	Southeast 18% Southwest 24% Midwest 20%

Issue Sectoral shift and Smart Specialisation?

- Dof (2018) “*..firm level productivity variation ... point to within sector differences as the main driver of overall variation, rather than differences between sectors ...*”
- OECD (2021)“*Very little of the overall decline (in labour share of national income) is associated with structural change across sectors ... significantly associated with greater (firm) concentration and dispersion of productivity within sectors...mainly operate though the channel of reallocation between firms (superstar firm hypothesis)*”
- Jordon(2021) on Northern Ireland “*..the evidence shows that economic structure is responsible for just under half of the productivity gap. Within-sector productivity failings are just as important, and include a long-tail of firms that underperform relative to their peers.*”
- Share of high-tech manufacturing and high-tech and knowledge-intensive services is regionally skewed (SRA)

Eastern/midlands 1.16	Southern 0.96	Northern/western 0.60
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- **If the case, then Smart Specialisation as a strategy to drive productivity growth may be problematic?**

CONCLUSION AND QUESTIONS

Attachments

Comparative Turnover pp (GVA pp) 2019*(SIZE) Euro '000

	MANUFACT. +	CONSTRUCTION+	RET/WH/TRANSP	ACCFDS	SERVICES
	<u>C</u> MAN <u>B</u> MIN	<u>F</u> CON <u>D</u> EL <u>E</u> WAT	<u>G</u> R/W <u>H</u> TR	<u>I</u> ACCFDS	<u>J</u> INF+COM <u>M</u> PROF <u>N</u> AD
D	398(130) 769(518)	214(73) 3762(417) 436(182)	400(64) 410(102)	66(27)	207(101) 178(91) 113(53)
G	291 (80) 278 (94)	126(50) 1614(155) 238(100)	322(51) 143(49)	43(21)	201(87) 118(63) 73 (39)
I	1140(462) 332(100)	213(71) 1113(280) 252(87)	493(66) 227(66)	57(23)	1415(334) 227(84) 256(122)
FR	341(80) 328(88)	188(59) 567(175) 209(62)	411(57) 160(63)	97(40)	227(100) 46(72) 79(41)
FI	401(83) 280(100)	188(56) 1063(329) 300(120)	399(56) 165(59)	88(32)	215(98) 125(63) 73(37)
UK	282(89) 694(295)	189(72) 892(198) 233(114)	319(42) 161(68)	49(24)	211(118) 141(84) 102(52)

Subsector T/O PP % growth 2010-19: summary

Growth rate	Totals	Germany	Ireland	Finland
</= 1	27	Chemicals Repairs Water Real estate Man consultancy Electricity 6	Dairy Meat Other foods, Fish Wood Motor vech. Motion pics, Repairs Mining Printing Retail Warehousing Accommodation Real estate Food service Legal/accounts 16	Computers Wholesale Motor trade Electricity Mining 5
1.0-1.1	19	Dairy Other foods Wood Paper Printing Machine equip. Wholesale Motion Pictures Warehousing 9	Paper Plastic Non-metals Motor trade Land transport 5	Dairy Water Man consulting Food service Motion pics 5
1.1 – 1.2	21	Meat Furniture Nonmetals Metal fab Computer BasicMetals Electrical Eq. Computer programming Land transport, Plastic, Specialised construction 11	Civil engineering Water 2	Printing Retail Computer Prog Building construction Land transport Accommodation Warehousing Arch/Engineering 8
1.2 – 1.3	14	Retail , Legal/accounts, Food service, Architect/Engineering, Pharma 5	Metal fab Building construction Arch/engineering 3	Machine equip Motor vehicles Information services Plastic Real estate Legal/accounts 6
1.3 -1.4	12	Motor vehicles Med devices Call centres, Accommodation Civil engineering, 5	Specialised construction Call centres 2	Non-metals Metal fab Basic metals Repairs Call centres 5
1.4 – 1.5	9	Fish , Motor trade, Mining, Building construction 4	Computer programing Electricity Wholesale Man consulting 4	Civil engineering 1
1.5 +	6	Information services 1	Basic metals, Electrical Eq 2	Paper Chemicals Wood 3
N/A	15	0	Furniture, Chemicals, Pharma Computers, Machine eq., Med devices Information services 7	Meat, Other foods, Fish,, Furniture, Pharma, Electrical, Med devices Specialised Cons 8
Totals	123	41	41	41

CONSTRUCTION COUNTRY COMPARISON (EUROSTAT)

Country	GVA mill euro	Hours mill	GVA/Hours
Ireland *	11,176	228.8	48.8 3
Denmark*	13,267	N/a	N/a
Germany	132,211	3,382	39.1 6
France	103,076	N/a	N/a
Finland	11,771	272	43.3 4
UK *	116,083	2,813	41.3 5
Belgium *	20,201	281.7	71.7 1
Netherlands *	34,457	551	62.5 2
Spain	49,919	1823	27.4 7
Italy	52,555	1,345	39.1 6