

Regional topics

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Globalinto 2019-2022
New Intangibles for European
<https://globalinto.eu>
Funded by EU Horizon 2020 Programme CEPR

OECD CLASSIFICATION BY TECHNOLOGICAL LEVEL + IA PRODUCING SERVICES (using Nace)

KNOWLEDGE INTENSIVE SERVICES (KIS)

OC services= legal M69 head office M70 advertising, market research M73

ICT services= computer programming, consultancy 62 information services 63

R&D (incl. engineering) services= R&D M72, architectural, engineering M71

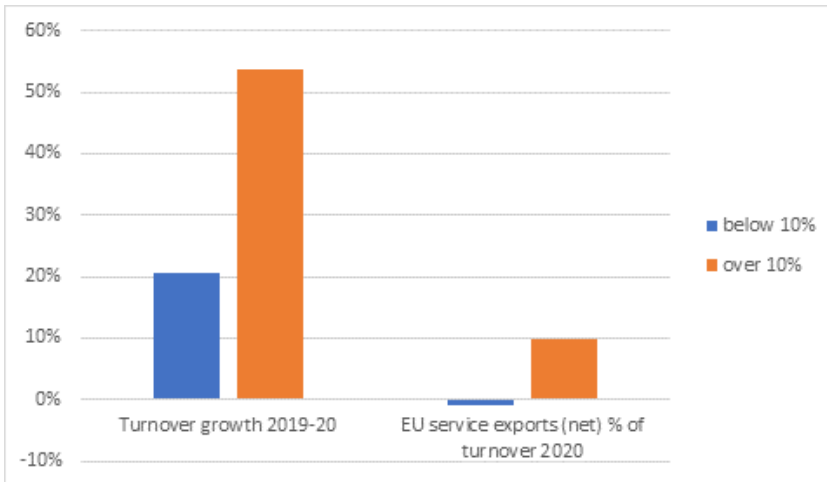
Other KIS=water transport 50, air transport 51, publishing 58, motion picture 59, programming, broadcasting 60, telecommunication 61, finance 64-66, other professional activities 74, veterinary activities 75, employment 78, security and investigation 80, public administration O, education P, human health Q, arts, entertainment and recreation R

4 BASIC SERVICES

wholesale trade 45-47, land transport 49, warehouse and support activities 52, postal 53, accommodation 55, food and beverage 56, real estate 68, rental and leasing 77, travel agency 79, services to buildings, landscape 81, office administrative support 82, other service activities S



Skilled foreign origin employees in ICT firms in Finland



Orange: 10% or more foreign origin workers (214 firms)

- **Huge growth over 50%**
- Blue: under 10% foreign workers**

Data: structural business register with companies in industry Nace J62 and over 9 employees and 2,0 million euro turnover in 2020, linked to LEED

European rank: number of brain-business jobs per 1000 working-age persons

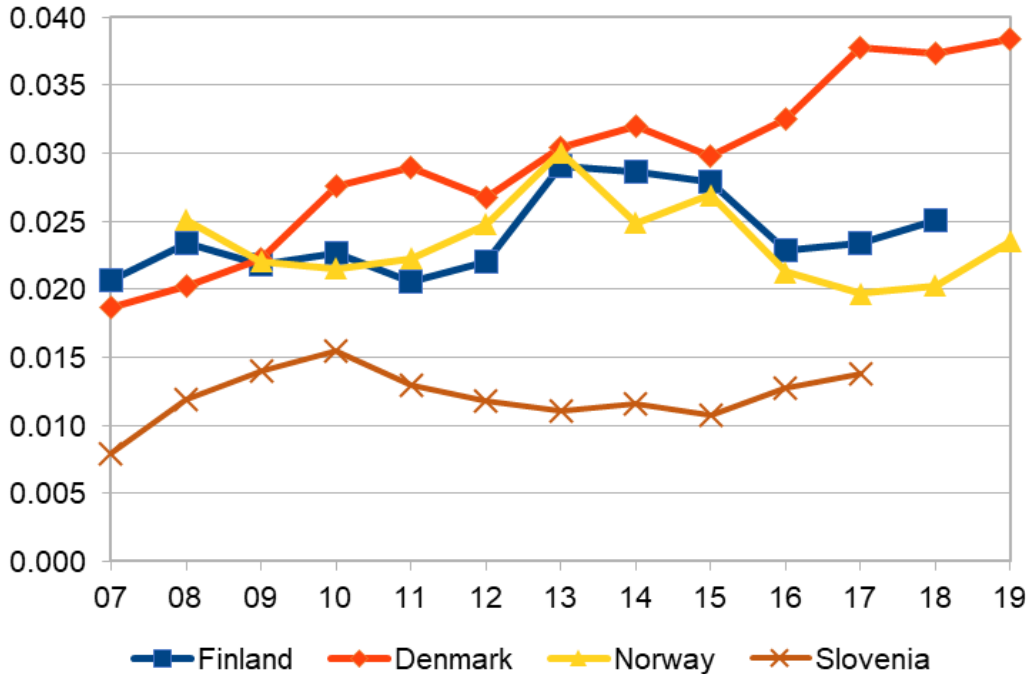
KIS	OC worker	R&D worker	ICT worker	All
Finland	1.6 %	4.1 %	1.7 %	7.5 %
Denmark	2.6 %	4.8 %	2.2 %	9.6 %
Norway	3.9 %	6.7 %	5.8 %	16.4 %
Slovenia	1.7 %	3.5 %	1.0 %	6.2 %

Source: Globalinto

1	Sweden	87.1
2	Denmark	79.1
3	Netherlands	77.0
4	UK	76.1
5	Luxembourg	70.1
6	Germany	65.8
7	Norway	64.5
8	Finland	59.8
9	Austria	56.7
10	Estonia	55.1
11	Slovenia	54.4
12	Belgium	52.7
13	France	52.5

Source: ECEPR

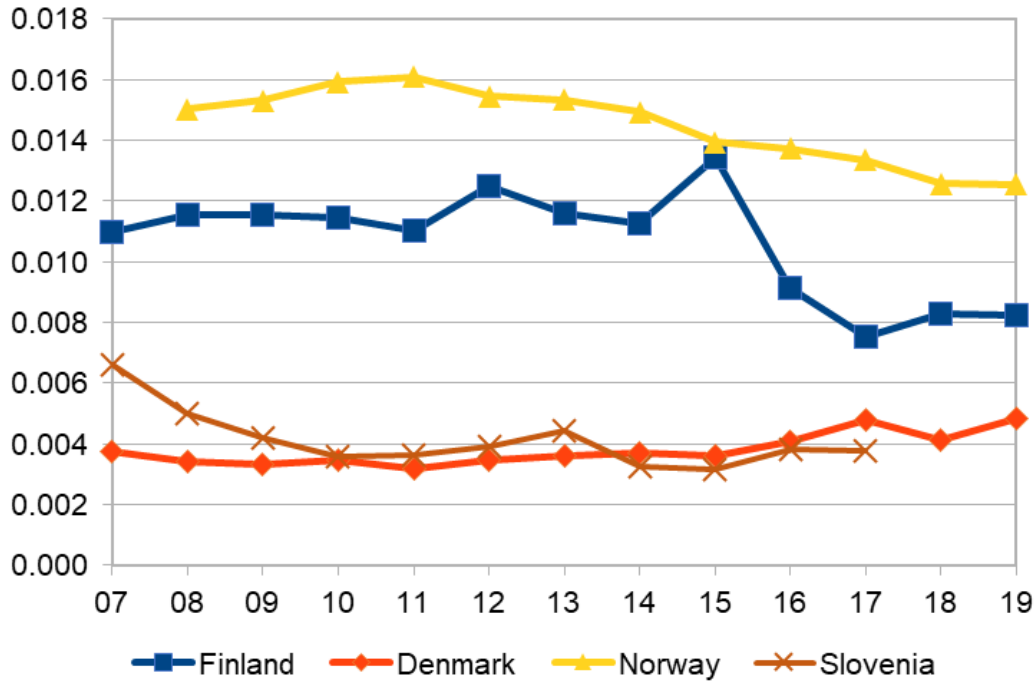
Figure 1. R&D-IBTC KIS



R&D-IBTC
 DEN leads from 2.0% to
 4.0% per year
 FIN, NOR similar evolution
 SLO around 1.5%

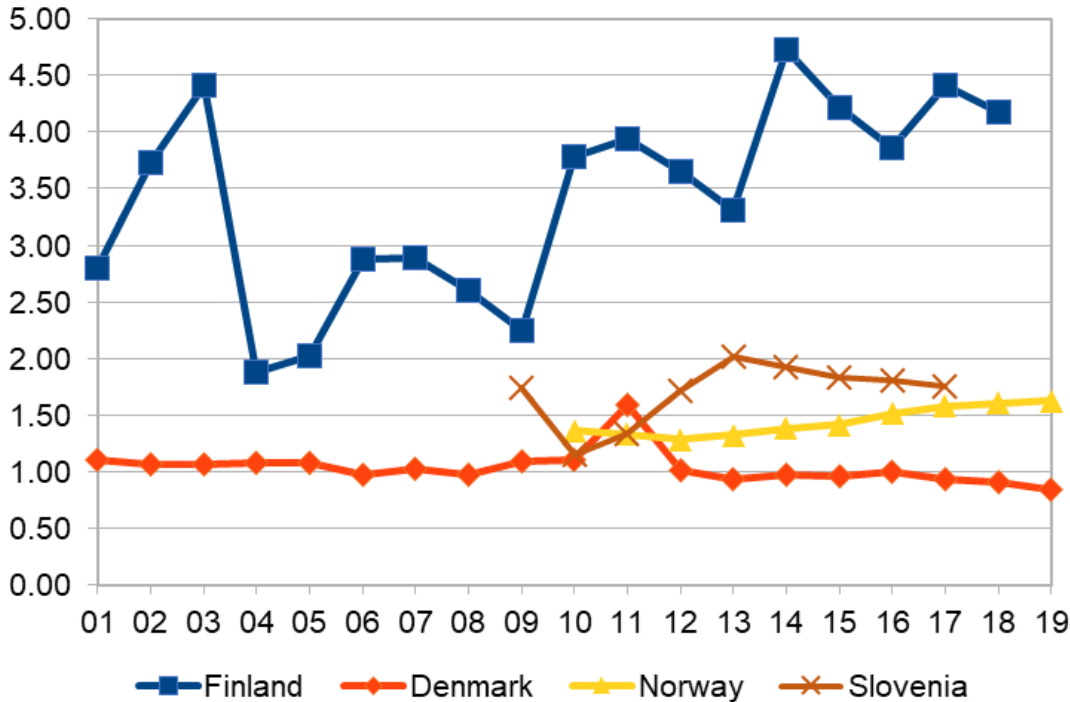
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Figure 2. OC-IBTC KIS



IC labor shares	KIS	OC worker	R&D worker	ICT worker	All
	Finland	1.6 %	4.1 %	1.7 %	7.5 %
Denmark	2.6 %	4.8 %	2.2 %	9.6 %	
Norway	3.9 %	6.7 %	5.8 %	16.4 %	
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Figure 1. Markup KIS



FIN around 250%
increasing without dip
KIS GDP growth 6% per
year since 2001
SLO around 90% flat
NOR around 40% increasing
DEN around 13% flat

KIS policy

DEN leading in R&D-IBTC, **FIN** in markups

- Technological change 3-4.5% per year
- KIS is linked to intangibles of manufacturing and other industries.



VA explained by ICs and IBTC

	All	KIS (no R&D)	R&D	All	KIS (no R&D)	R&D
Finland				Norway		
OC	0.104*** ▲(0.006)	0.177*** ▲(0.016)	0.058** ▲(0.020)	0.034* ▲(0.014)	0.060* ▲(0.029)	-0.053 ▲(0.053)
R&D	0.132*** ▲(0.005)	0.137*** ▲(0.013)	0.213*** ▲(0.017)	0.084*** ▲(0.010)	0.102*** ▲(0.019)	0.063 ▲(0.058)
ICT	0.010*** ▲(0.001)	0.023*** ▲(0.004)	0.013** ▲(0.004)	0.010*** ▲(0.003)	0.046*** ▲(0.008)	0.011 ▲(0.011)
Tangibles	0.035*** ▲(0.002)	0.033*** ▲(0.005)	0.041*** ▲(0.009)	0.042*** ▲(0.006)	0.044*** ▲(0.011)	0.010 ▲(0.023)
R&D-IBTC	-0.403 ▲(0.209)	-0.816 ▲(0.714)	-3.939*** ▲(0.495)	1.741*** ▲(0.195)	0.690 ▲(0.513)	1.949*** ▲(0.500)
OC-IBTC	5.431*** ▲(0.584)	5.256*** ▲(1.227)	21.557** ▲(6.699)	2.279** ▲(0.696)	1.727 ▲(1.295)	-3.999 ▲(3.948)
Markup	0.007* ▲(0.003)	0.022*** ▲(0.006)	0.028 ▲(0.026)	-0.036 ▲(0.028)	0.001 ▲(0.065)	-0.044 ▲(0.152)
Obs	44991	7024	2940	8325	1282	577
R ² within	0.427	0.443	0.517	0.279	0.352	0.448
Scalability	1.05	1.10	1.04	1.05	1.02	1.13
IA total	0.25	0.34	0.28	0.13	0.21	0.02

	All	KIS (no R&D)	R&D	All	KIS (no R&D)	R&D
Denmark				Slovenia		
OC	0.021*** ▲(0.006)	0.013 ▲(0.038)	0.027 ▲(0.021)	0.084*** ▲(0.006)	0.136*** ▲(0.018)	0.056** ▲(0.018)
R&D	0.021*** ▲(0.005)	0.003 ▲(0.025)	0.088* ▲(0.044)	0.077*** ▲(0.005)	0.085*** ▲(0.014)	0.185*** ▲(0.022)
ICT	0.021*** ▲(0.005)	0.041 ▲(0.027)	-0.004 ▲(0.028)	0.012*** ▲(0.001)	0.027*** ▲(0.004)	0.010* ▲(0.004)
Tangibles	0.011*** ▲(0.003)	0.051*** ▲(0.014)	0.007 ▲(0.009)	0.076*** ▲(0.003)	0.071*** ▲(0.008)	0.051*** ▲(0.009)
R&D-IBTC	1.615*** ▲(0.184)	1.984* ▲(1.005)	1.472*** ▲(0.395)	0.014 ▲(0.009)	0.039 ▲(0.022)	0.1 ▲(0.06)
OC-IBTC	4.254*** ▲(1.26)	29.530** ▲(10.194)	-5.218 ▲(5.723)	1.419*** ▲(0.149)	0.912* ▲(0.456)	1.225*** ▲(0.352)
Markup	0.002 ▲(0.007)	0.134 ▲(0.108)	0.122* ▲(0.056)	4.528*** ▲(0.462)	3.993*** ▲(0.958)	1.392 ▲(2.814)
Obs	4897	205	291	20480	2954	2205
R ² within	0.354	0.323	0.657	0.275	0.36	0.263
Scalability	0.95	0.87	0.96	0.98	1.03	1.07
IC total	0.06	0.06	0.12	0.17	0.25	0.25

ICs and IBTCs improving VA

- OC FIN, SLO
- R&D least in DEN
- R&D IBTC NOR, **DEN**

Markup Slovenia