

# Intellectual Capital and the Future of Luxembourg

## Presentation Overview

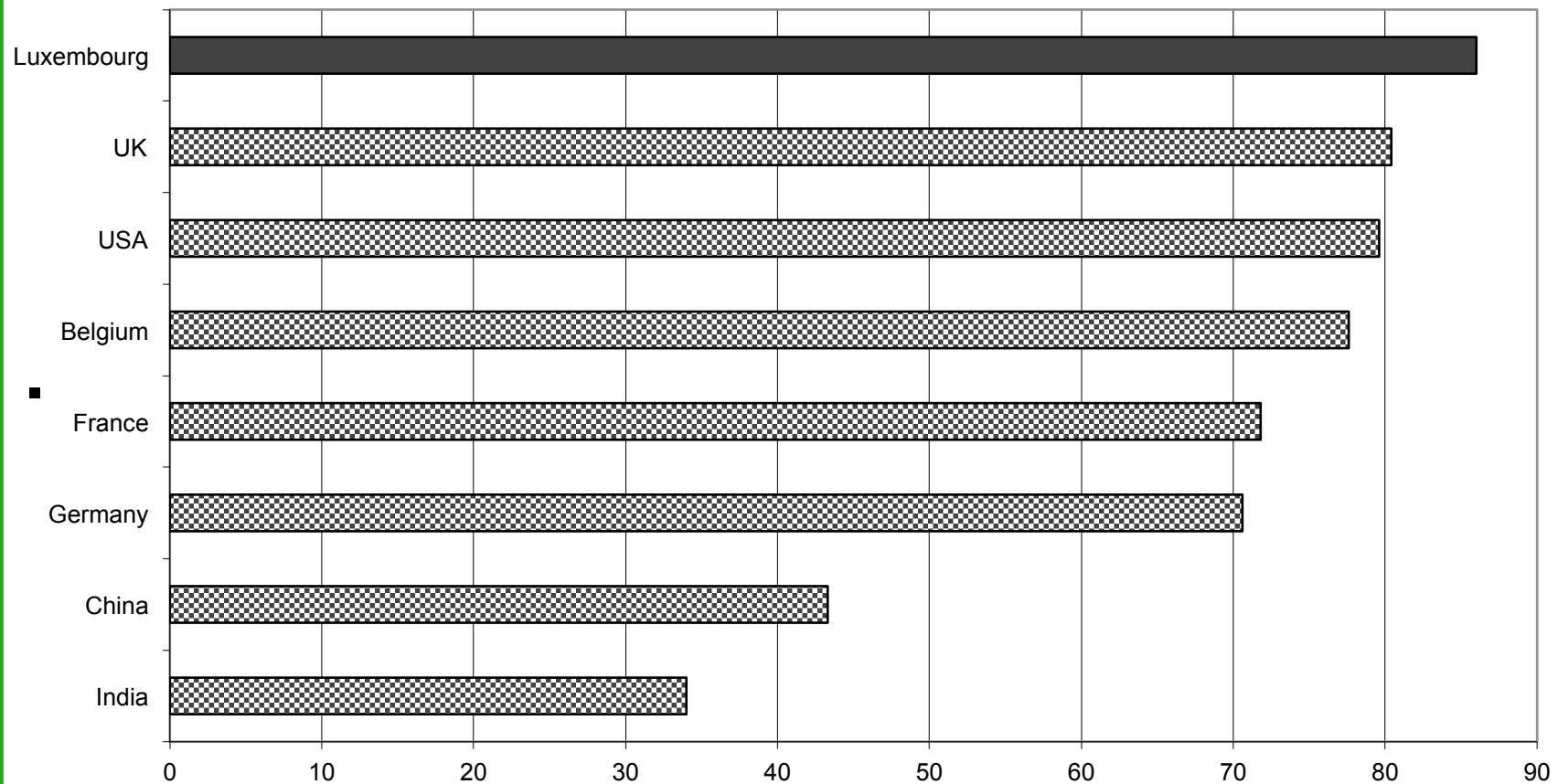
- What is Intellectual Capital (IC)?
- How is it applied to nations?
- What is Luxembourg's Intellectual Capital?
- How can IC be used to analyse current issues and describe solutions for Luxembourg?

# What is Intellectual Capital?

Intellectual Capital is a conceptual framework used to identify and analyse an organisation's intangible assets.

Properly deployed, Intellectual Capital results in innovation, which generates profits in a corporate context and prosperity in a national one.

## Luxembourg's Service Economy



Intellectual Capital is comprised of:

- Human Capital
- Structural Capital
- Relational Capital

## Human Capital

Human Capital is organisational IC that “goes home at night.”



## Human Capital

- Education
- Age and gender representation
- Training
- Well being--physical, emotional, fiscal

## Human Capital

- Experience
- Skills
- Tacit knowledge

## Structural Capital

If Human Capital is capital that “goes home at night,” Structural Capital remains within the organisation.

## Structural Capital

- General infrastructure such as hardware, software and offices
- Knowledge-based infrastructure such as intranets and databases

## Structural Capital

- Internal procedures, systems and organisational culture
- Intellectual property rights such as patents and trademarks.

## Relational Capital

- Affiliations with partners and other external and internal stakeholders
- Public image and perception

## Relational Capital

- Stakeholder and customer loyalty and satisfaction
- Regulatory and fiscal environment

How is IC applied  
to nations?



## National IC

Nations possess their own Intellectual Capital that can be identified and assessed.

## National IC

A nation's **Human Capital** is its citizens and residents and their profile in terms of education, health, age, etc.

## National IC

A nation's **Structural Capital** consists of its:

- Infrastructure (e.g., broadband, the University)
- Government and laws (e.g., the law giving preferential tax treatment to IP)

## National IC

A nation's **Relational Capital** consists of its:

- Relations with neighbours
- Relations with business, esp. fiscal and regulatory factors
- Relations with citizens, i.e., social solidarity

## Indicators

Using indicators to measure IC is popular because they allow for horizontal comparisons between nations.

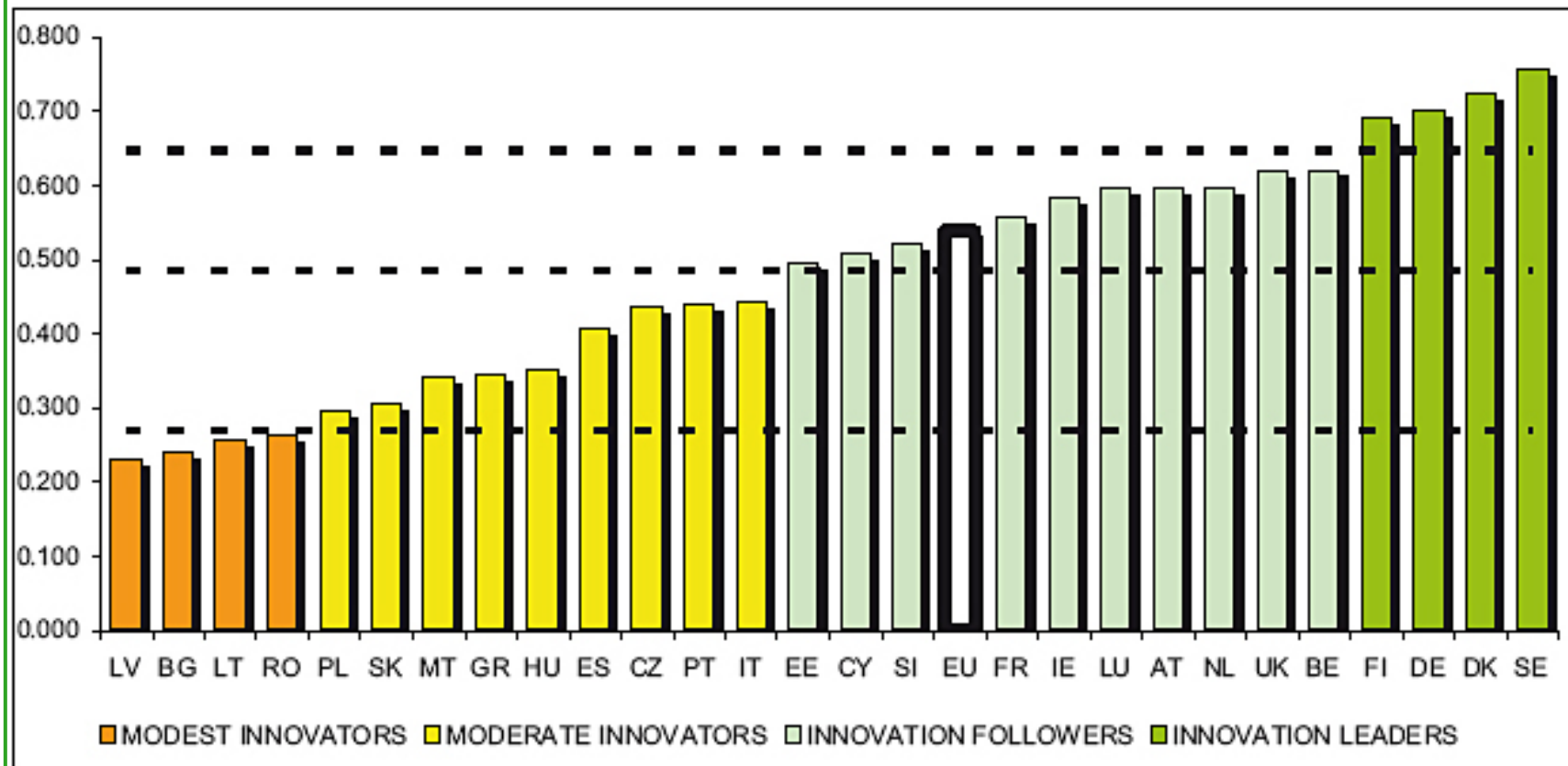
They support the popular conception  
“What can be measured can be managed.”

## Indicators

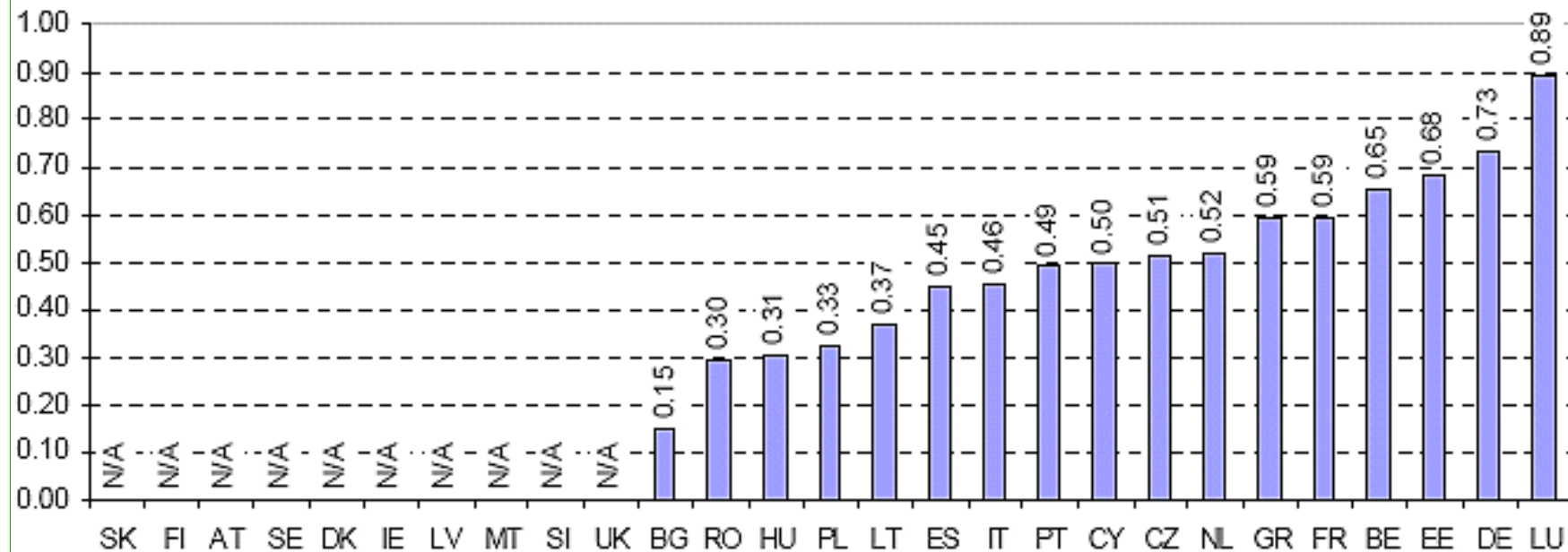
The limitations of indicators are:

- they do not allow for nuance
- they exclude unique national characteristics
- they do not always clearly signify what the number or ranking means

## Luxembourg's CIS Ranking 2011

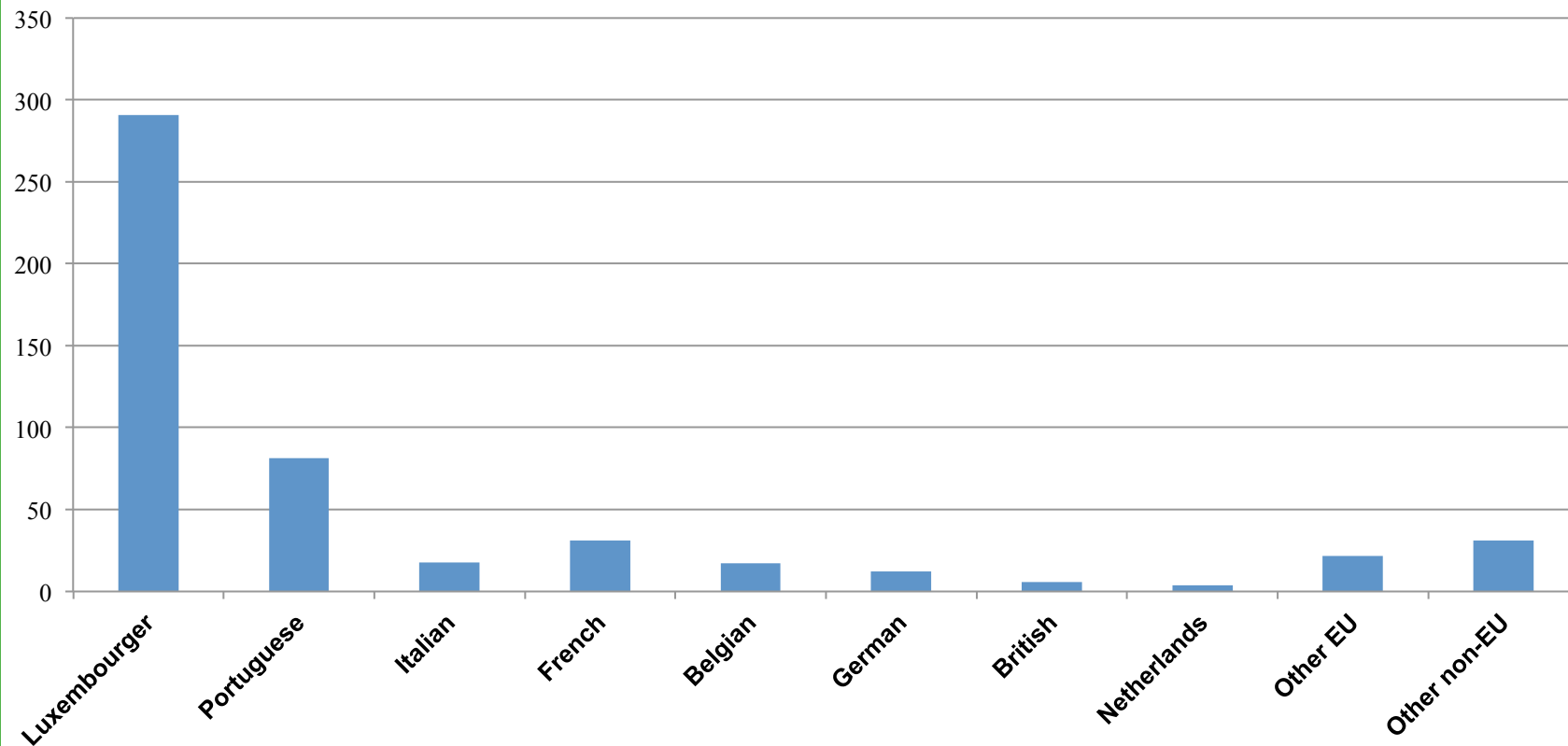


## Luxembourg's SSI Ranking





## Luxembourg's Multinational Mix



# What is Luxembourg's Intellectual Capital?

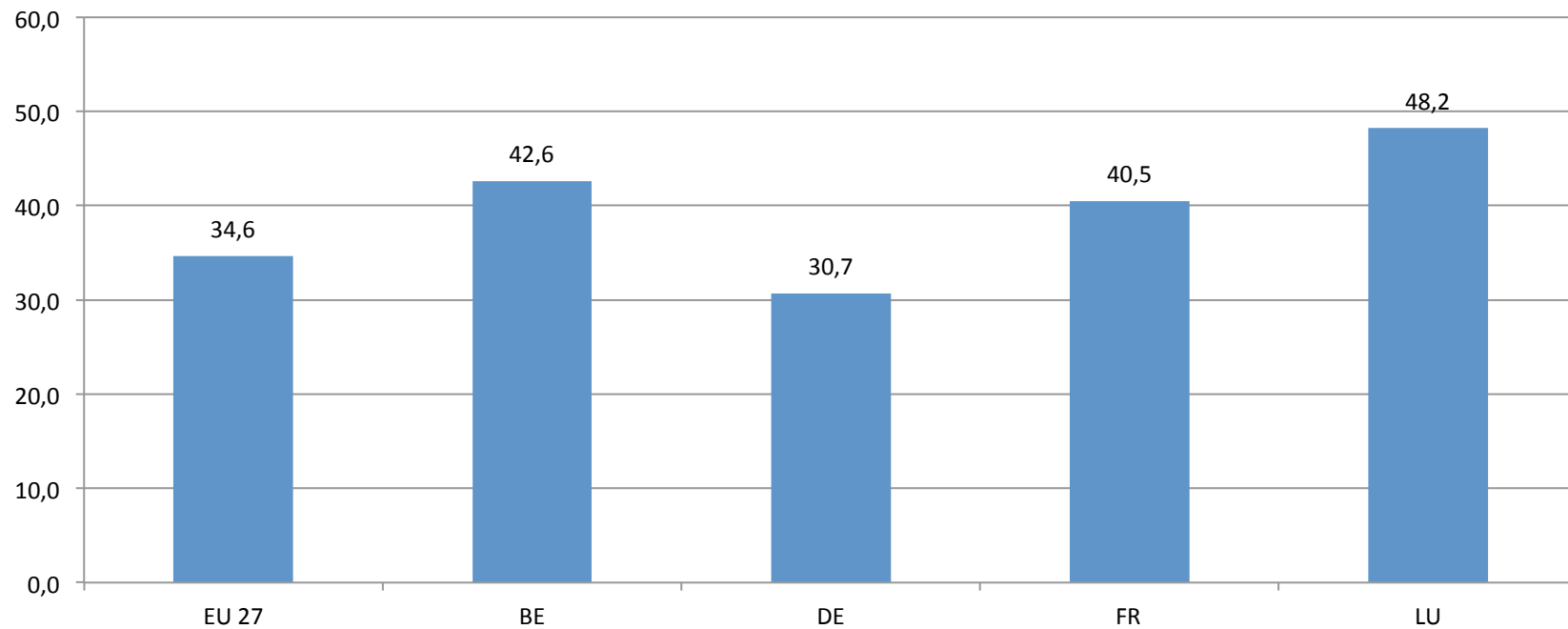
If intangible assets properly used result in innovation that produces prosperity, Luxembourg is rich in IC. The following indicators suggest this is the case.

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# Human Capital

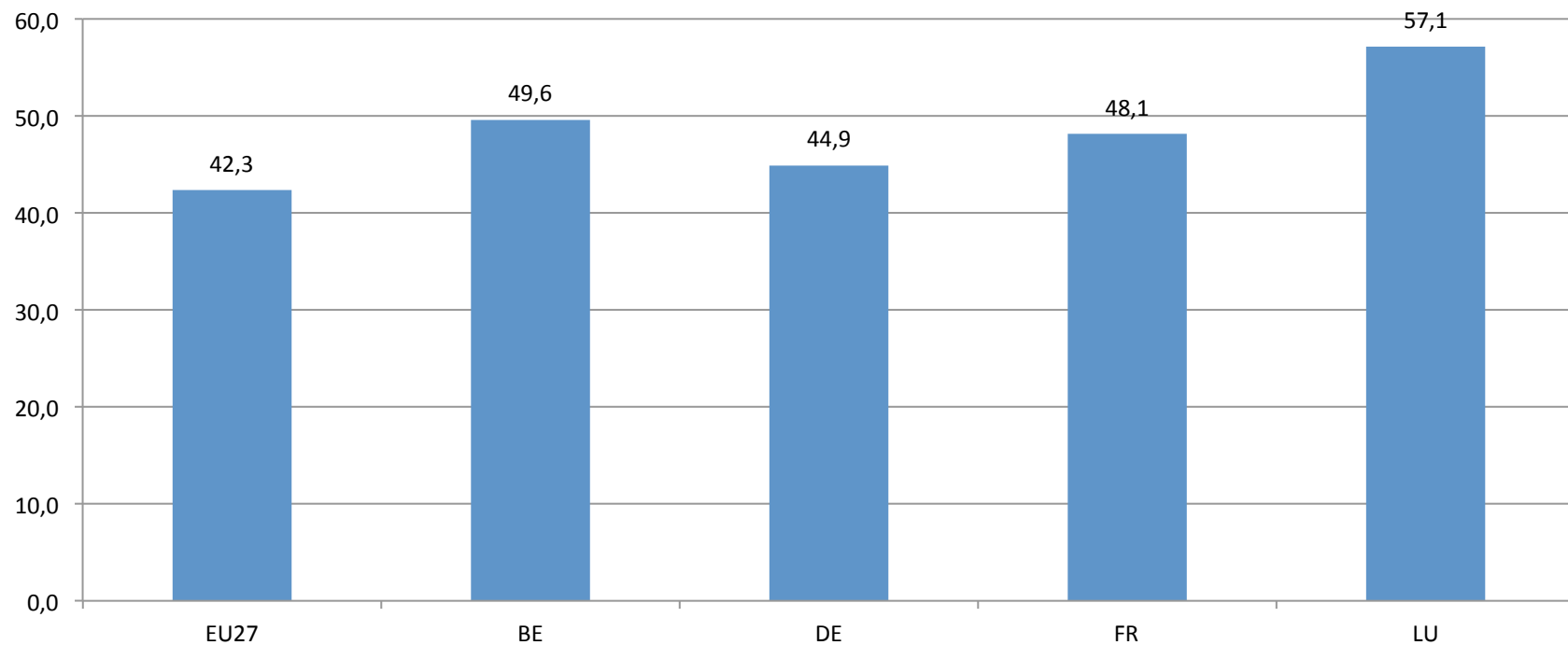
## Human Capital

### Tertiary Education Attainments % 30-34 2011



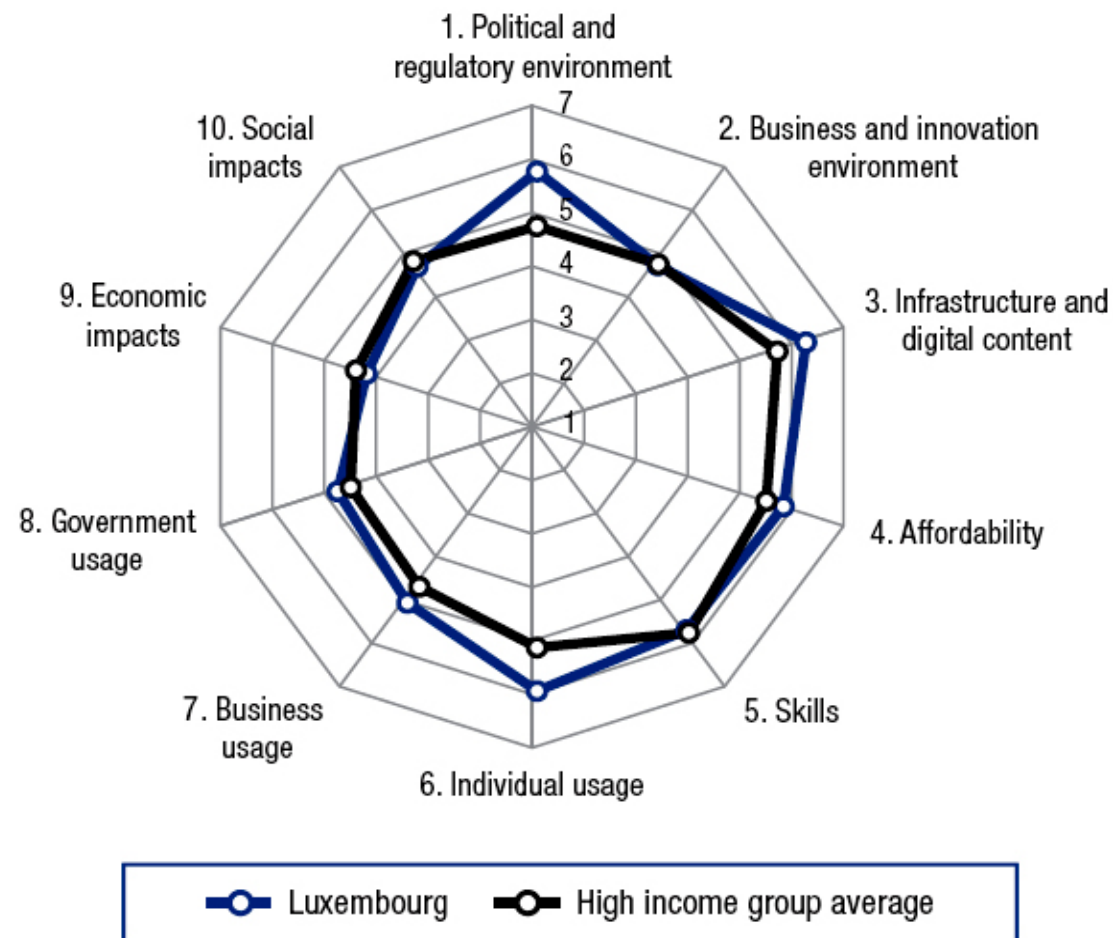
## Human Capital

HRST (Human Resources in Science and Technology as a % of total labour force) 2011



# Structural Capital





## Patents filed per million inhabitants

<b>EPO</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
EU-27	115.76	114.81	115.52*	115.8*
Luxembourg	229.96	148.51	169.31*	154.79*
<b>US Patent Office</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
EU-27	40.37	32.27	40.04	24.74*
Luxembourg	61.63	83.46	114.37*	52.00*

## Structural Capital



# Relational Capital

The Amazon logo, featuring the word "amazon" in a bold, black, sans-serif font. Below the text is a curved orange arrow that starts under the letter 'a' and ends under the letter 'z', pointing upwards.The Netflix logo, consisting of the word "NETFLIX" in a bold, white, sans-serif font. The letters have a slight 3D effect with a dark shadow. The logo is centered on a solid red rectangular background.

## Hiding spots

As much as \$25 trillion has been hidden around the world in countries that offer tight security, low taxes and extensive privacy. Some estimates point to 70 or more “secrecy havens,” while the Government Accountability Office has identified the 50 “financial privacy jurisdictions” shown on the world map below:



Source: U.S. Government Accountability Office, "International Taxation," December 2008.

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How can IC be used to  
analyse current issues and  
describe solutions?

Most of the issues that are of current concern can be analysed in terms of the three components of IC and solutions also defined in those terms.



For example, education is an issue that relates to Human Capital. Improving the educational system requires changes in:

- Structural Capital (curricula and teaching methodologies)
- Relational Capital (gaining acceptance of reforms)

# The issues

Issues include:

- The widening wealth gap
- Jobs and entrepreneurship
- Egalité

Issues also include:

- Sustainability
- Managing the risk of critical dependencies such as:
  - the dominance of the financial sector
  - cross-border workers
  - reliance on foreign capital

## The widening wealth gap

The GINI Index, or coefficient, measures how a country's wealth is distributed.

1 means wealth is perfectly distributed  
100 means wealth is concentrated among a very few.

## The widening wealth gap

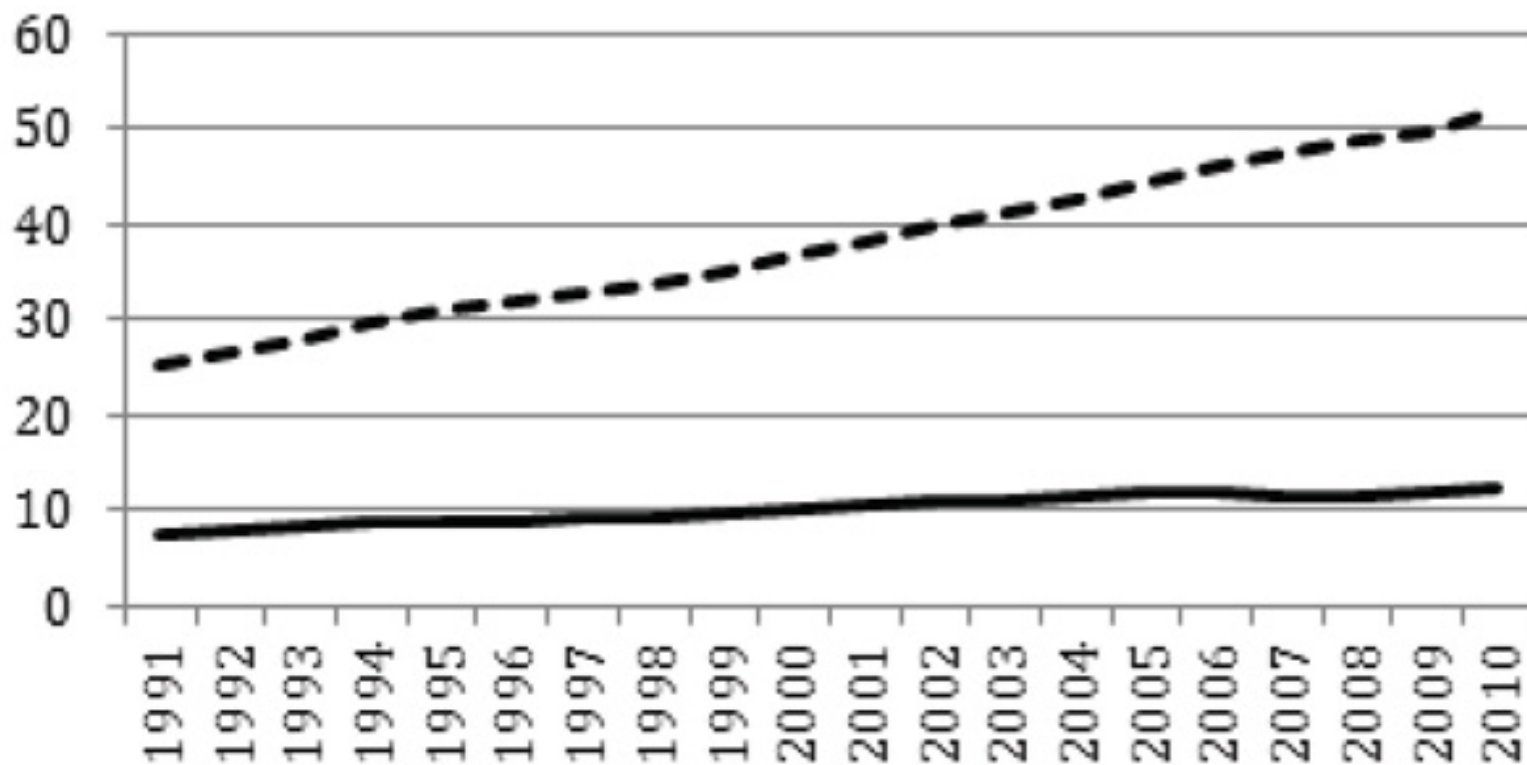
### Luxembourg's GINI Coefficient

In 2005: 26.5

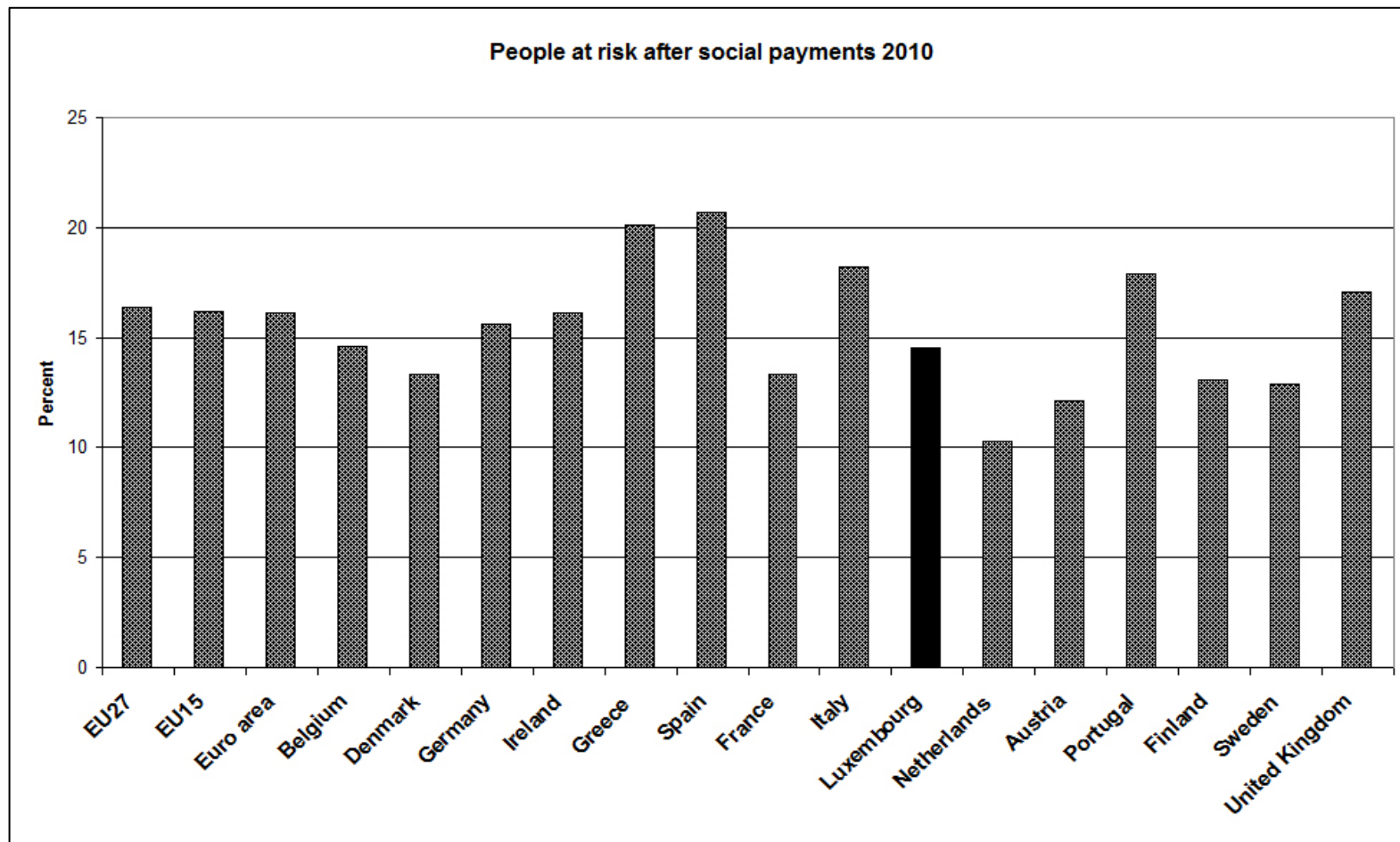
In 2010: 29.2

## The widening wealth gap

Salary evolution, lowest and highest paid employees, in €000's



## The widening wealth gap





Poverty is a Human Capital issue.

Solutions are mainly structural and include:

- Education and re-training
- Affordable housing

As well as relational:

- Social inclusion

## Jobs

<b>Employment Trends</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Total Men</b>	79.0	79.2	77.8
<b>Total Women</b>	61.5	62.1	61.7
<b>Youth 15-19</b>	10.4	7.3	n.a.
<b>Youth 20-24</b>	43.3	35.1	n.a.
<b>Older persons 55-59</b>	53.5	55.9	54.6
<b>Older persons 60-64</b>	19.4	19.9	20.7

## **Jobs**

Relational Capital:

What career advice would you give a 10-year old to prepare for a career with long-term viability?

## **Jobs**

### Structural Capital

What education would you give a 10-year old to ensure he/she has a job in forty years?

## Entrepreneurship

It is not easy to be an entrepreneur in Luxembourg. Issues include:

- Difficulties obtaining business license
- Limited venture capital
- Status as “independent” means high social charges and limited protection.

## Entrepreneurship

### Structural Capital assets:

- Business incubators
- Espaces d'Entreprises
- Masters in Entrepreneurship

## Entrepreneurship

### Structural Capital needs:

- Business license reform
- Social charges holiday or reductions

### Relational Capital needs:

- Programme “Firwaat net en Entrepreneur?”

## Egalité

Luxembourg ranks the lowest in the EU in:

- Proportion of women in Grade A academic positions
- Proportion of female heads of HES
- Proportion of women on boards
- Proportion of female researchers

Source: SheFigures 2012 (EU)



<b>Actor</b>	<b>Group</b>	<b>Male</b>	<b>Female</b>
PRC Henri Tudor	Executive Board	<b>11</b>	<b>1*</b>
NRF	Board	<b>10</b>	<b>2</b>
Uni	Board	<b>6</b>	<b>1</b>
Uni	Rectorate	<b>5</b>	<b>0</b>
PRC Lippmann	Board	<b>9</b>	<b>1*</b>
CEPS/INSTEAD	Board	<b>7</b>	<b>3</b>
CEPS/INSTEAD	Scientific Council	<b>10</b>	<b>0</b>
CEPS/INSTEAD	Management	<b>3</b>	<b>0</b>
CRP Santé	Management	<b>2</b>	<b>1</b>
CRP Santé	Board	<b>12</b>	<b>0</b>
CRP Santé	Advisory Board	<b>12</b>	<b>0</b>

## Egalité

Inequality is a Human Capital issue

Solutions include:

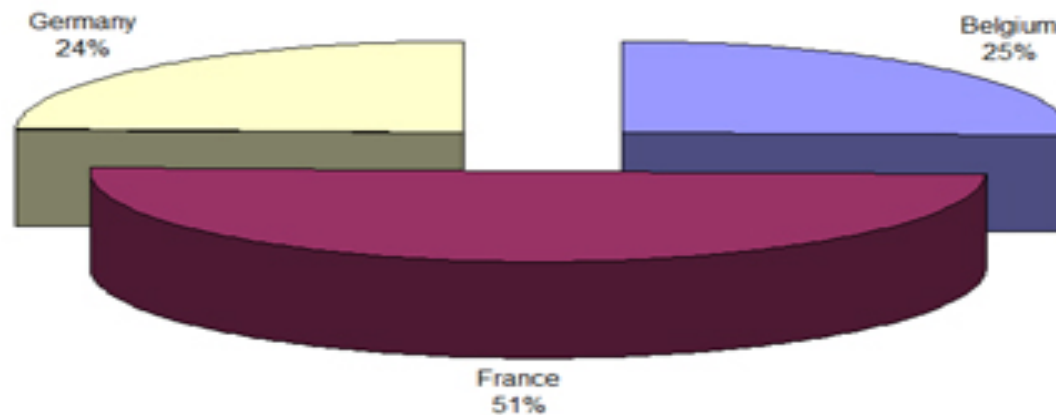
- Simply appoint women (Structural Capital)
- Raise public awareness (Relational Capital)

## Critical Dependency: Frontaliers

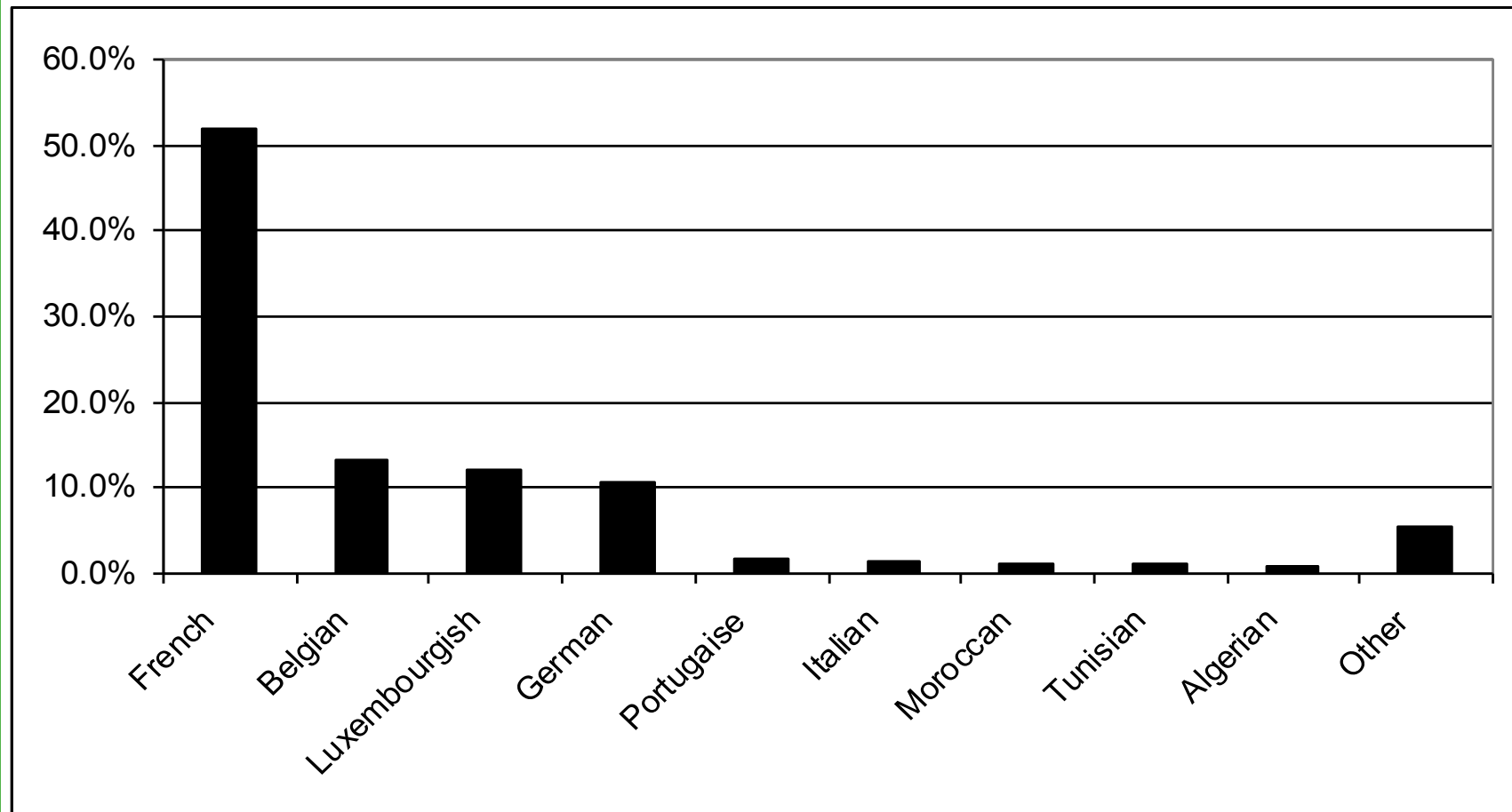
44% of Luxembourg's workforce not only goes home a night, it goes home across a foreign border.

# Critical Dependency: Frontaliers

**Frontaliers:  
Countries of Residence**



## Critical dependency: Les Frontaliers



## Critical Dependency: Frontaliers

In *Luxembourg 2020* (2011) the government expresses concern that new jobs being created are being filled by Frontaliers, as Luxembourg's unemployment rate increases.

**Critical Dependency: Frontaliers**

**Structural Capital: Develop programme to support greater integration.**

**Relational Capital: Build greater social solidarity. Avoid syndrome: Come for the job, stay for the paycheck.**

## Critical dependency: Foreign capital

- RTL → Bertelsmann
- Villeroy and Boch
- Arcelor → Arcelor Mittal
- Cargolux → ?
- BIL → Dexia → BIL / RBS
- KBL → Precision Capital
- BGL → BGL BNP Paribas



## Critical dependency: Foreign capital

- Human Capital solutions needed for lost jobs. Especially critical for skilled industrial workers.
- Structural Capital solution needed to develop strategy to minimize “Letting the fox into the hen house.”

## Critical dependency: Foreign capital

- Relational Capital. Move back from shareholder model to stakeholder model.
- Avoid syndrome: Selling our birthright for a mess of potage.

# Conclusions

After the collapse of the steel industry in the 1970's, Luxembourg used IC to put in place the framework to develop a financial sector.

The Grand Duchy also leveraged its sovereignty to launch a satellite/space sector.

The resulting flourishing of the economy gave rise to wealth, which has been used to develop more IC (e.g., the University).

The aftermath of financial crises that began in 2008 has highlighted a range of issues that need to be addressed to ensure a prosperous future.

IC again needs to be deployed to stimulate innovation that will result in:

- Economic diversification and job creation
- Increased societal solidarity and inclusiveness
- Management of dependencies to reduce risk.



# Recommendations

Luxembourg does not come with  
a User's Manual.  
It should.

The tacit knowledge that lies in  
Luxembourg's Human Capital  
requires codification to become  
Structural Capital  
that will improve Relational Capital.

Solving current issues requires  
mobilising Luxembourg's  
extraordinarily diverse  
Human Capital  
to produce greater  
Relational Capital  
in the form of social solidarity.

[www.luxic.lu](http://www.luxic.lu)