

# **Balance Sheets after the EMU: an Assessment of the Redenomination Risk**

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# Motivation

- Eurozone (EZ) crisis threatens its very existence
- Austerity policies fueled protracted stagnation
- Institutional incompleteness
  - required fiscal transfers to mitigate socio-productive and financial imbalances not politically possible

*Stiglitz, 2016; Flassbeck and Lapavitsas, 2015; Sapir, 2012*

- Growing popular resentment against the €
  - rising nationalist parties and leftwing Euroscepticism
- Greece almost left in 2015, and risk still looming
  - central bank refinancing was *de facto* cut
  - threats of expulsions by Schäuble vs “oxi” referendum
- Practical consequences of euro exit need to be investigated

# The issue

- Devaluation impact has two channels
  - trade (generally positive)
  - balance sheet (potentially quite negative)
- Experience in emerging countries
  - balance sheet effects matter
  - if big currency mismatch, positive trade effect of devaluation can be overturned

*Towbin and Weber, 2013 ; Bebczuk et al., 2006; Cavallo & al., 2005*

- In the EZ: legal aspects of redenomination

*Amiel and Hyppolite, 2015 ; Nordvig and Firoozye, 2012*

# Objectives

- Assess balance sheet risk in EZ
- Two scenarios:
  - single country exit
  - complete euro area break-up
- Analysis by sector and by country (core + periphery)
- Give relevant policy recommendations
  - *ex ante* limitation of exposure
  - *ex post* mitigation

# Outline

- The conundrum of balance sheet redenomination
- A look at international investment positions
- Relevant debt
- Relevant net position
- Composite risk index by country and sector
- Policy recommendations

# The conundrum of balance sheet redenomination

# The contractionary devaluation hypothesis?

- Bebczuk et al. (2006):
  - contractionary devaluation if foreign debt composition  $>84\%$  foreign currency
  - domestic dollarization worsen things
- Towbin and Weber (2013):
  - compare which exchange rate regime (floating vs fixed) better insulates from shocks
  - fixed better if foreign currency debt too high
- However, Bleakley and Cowan (2008): firms tend to match currency composition of stocks with flows
- Most results on countries experiencing “hot money”-driven crises... maybe not relevant for EZ?

# Related literature: eurozone case

- Nordvig and Firoozye (2012)
  - legal analysis of redenomination issues
  - limited break-up (exit of periphery countries) manageable
  - more skeptical about full-blown break-up (an ECU-2 currency basket would help)
  - break-up must be accomplished all-at-once
- Amiel and Hippolyte (2015)
  - case study: market debt of large French firms
  - find significant negative impact for both financial and non-financial large corporations
  - strong devaluation overshooting hypothesis
  - do not take into account mitigation through financial assets



# Legal aspects of redenomination

- Principle of *lex monetae* (monetary sovereignty of states)
- Importance of governing law of each instrument (domestic vs foreign)
- Example of Greek 2012 restructuring:
  - old bonds under Greek law: CAC added *ex post* by law in parliament
  - new bonds under English law: less risky for investors
- Domestic law contracts to be redenominated in local currency by simple legislation
- Foreign law contracts to remain in euros (or, in case of complete EZ break-up, likely redenominated into a new ECU or into currency of counterparty)

# Impact of foreign currency mismatch

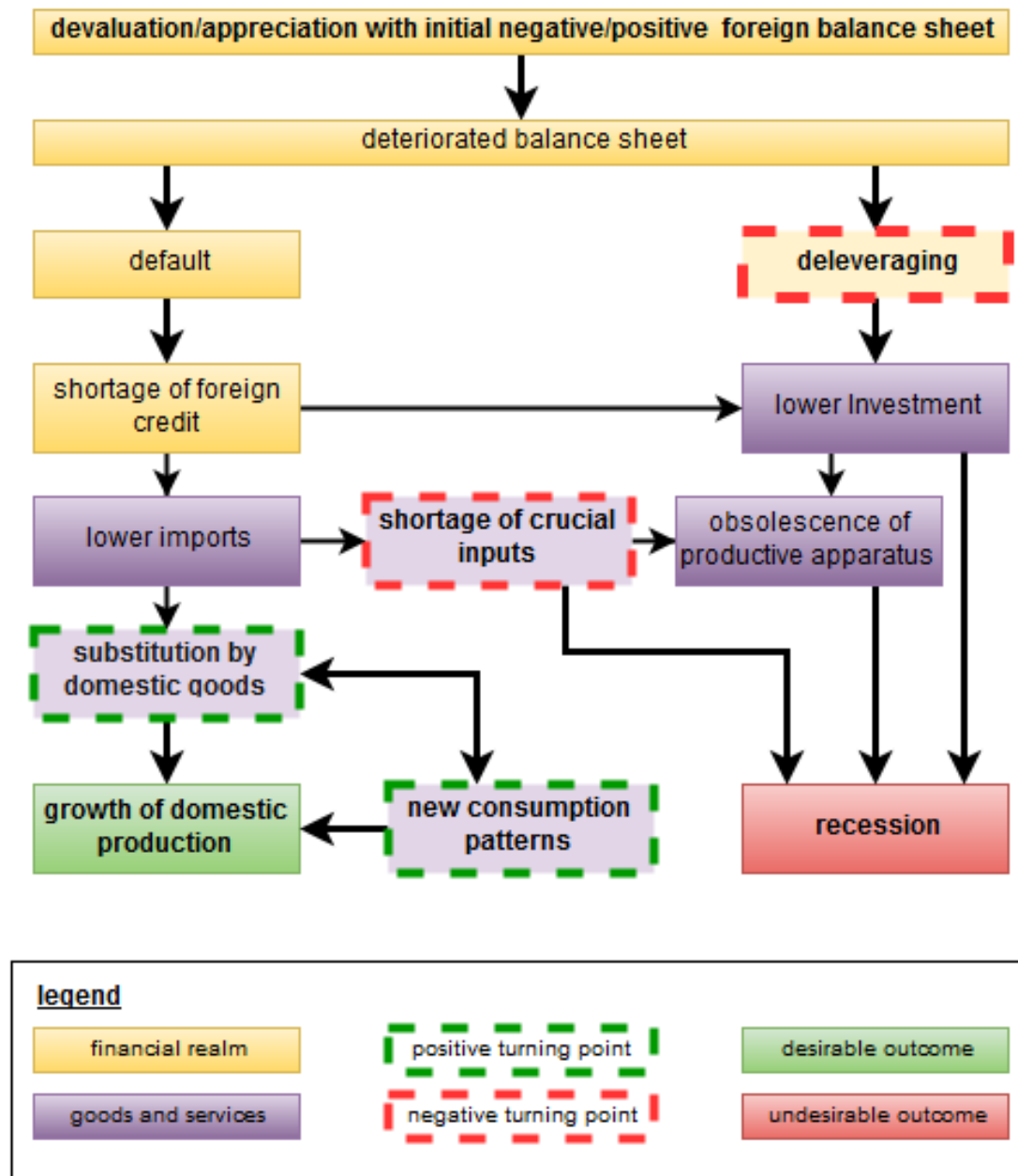
	Initial Net Foreign Currency Position	
	Assets > Liabilities	Assets < Liabilities
Depreciation	+	-
Appreciation	-	+

# Impact of instruments (devaluation case)

	EXTERNAL ASSETS	EXTERNAL LIABILITIES
FOREIGN DIRECT INVESTMENT	POSITIVE	NEUTRAL
PORTFOLIO INVESTMENT (EQUITY)	POSITIVE	NEUTRAL
BONDS (LONG TERM)	POSITIVE	NEGATIVE
LOANS (LONG TERM)	POSITIVE	NEGATIVE
BONDS (SHORT TERM)	POSITIVE	HIGHLY NEGATIVE
LOANS (SHORT TERM)	POSITIVE	HIGHLY NEGATIVE
CROSS-BORDER DEPOSITS	POSITIVE	NEUTRAL
DERIVATIVES	NOT CONSIDERED	NOT CONSIDERED
RESERVE ASSETS	POSITIVE	NEUTRAL

LEGEND	NEUTRAL	NOT CONSIDERED
POSITIVE	NEGATIVE	HIGHLY NEGATIVE

# The case of the productive sector



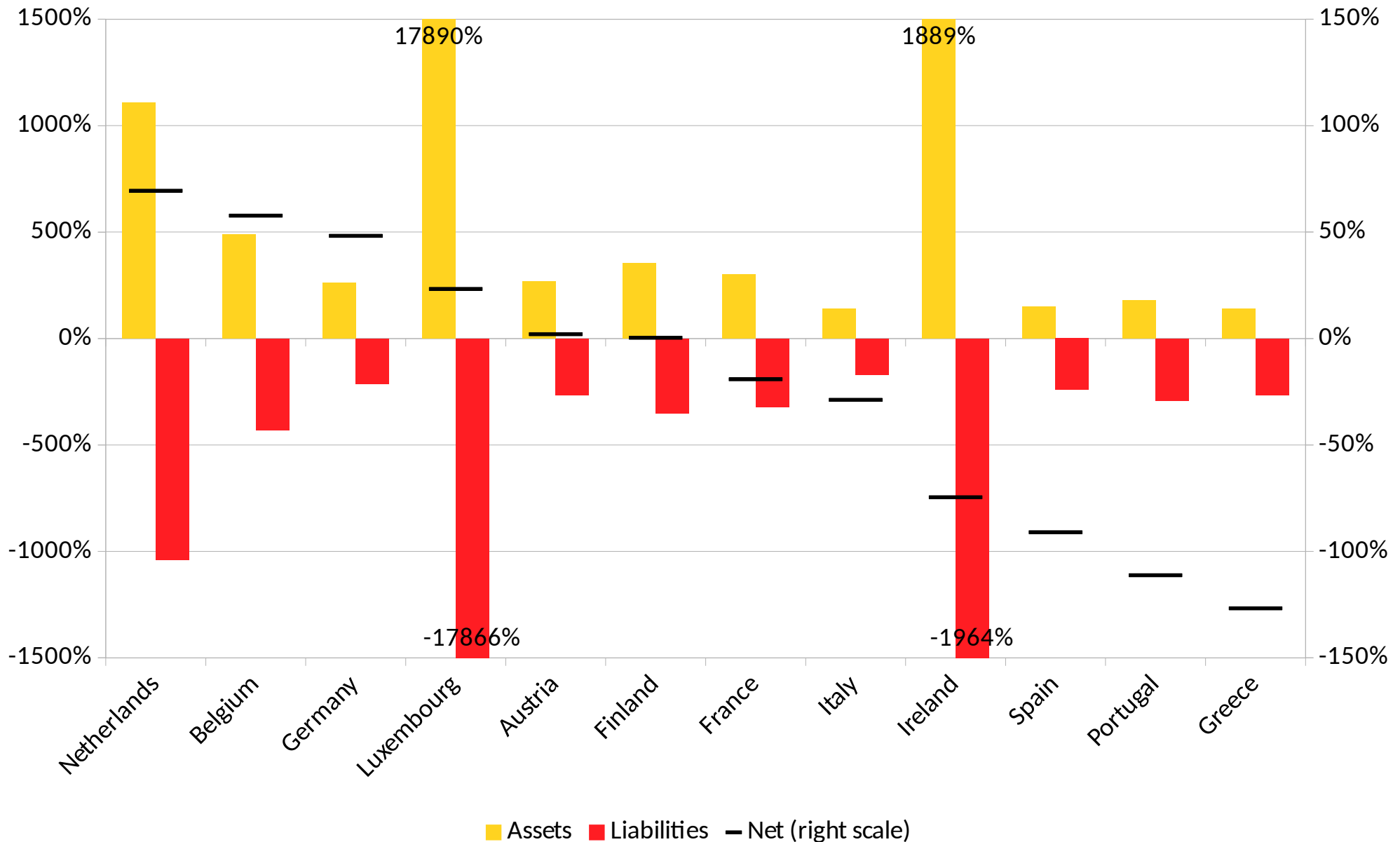
# **A look at international investment positions**

# International investment position

- Aggregates financial instruments with non-resident counterparty
  - liabilities of residents to non-residents
  - assets of residents over non-residents
- Distinct from relevant net position (*i.e.* foreign currency pos.)
  - some liabilities to non-residents won't be redenominated (*e.g.* equity, deposits in domestic banks)
  - some assets not in IIP (*i.e.* involving 2 resident parties) will be redenominated (*e.g.* some bonds under foreign law)
- However, good 1<sup>st</sup> order approximation and informative by itself

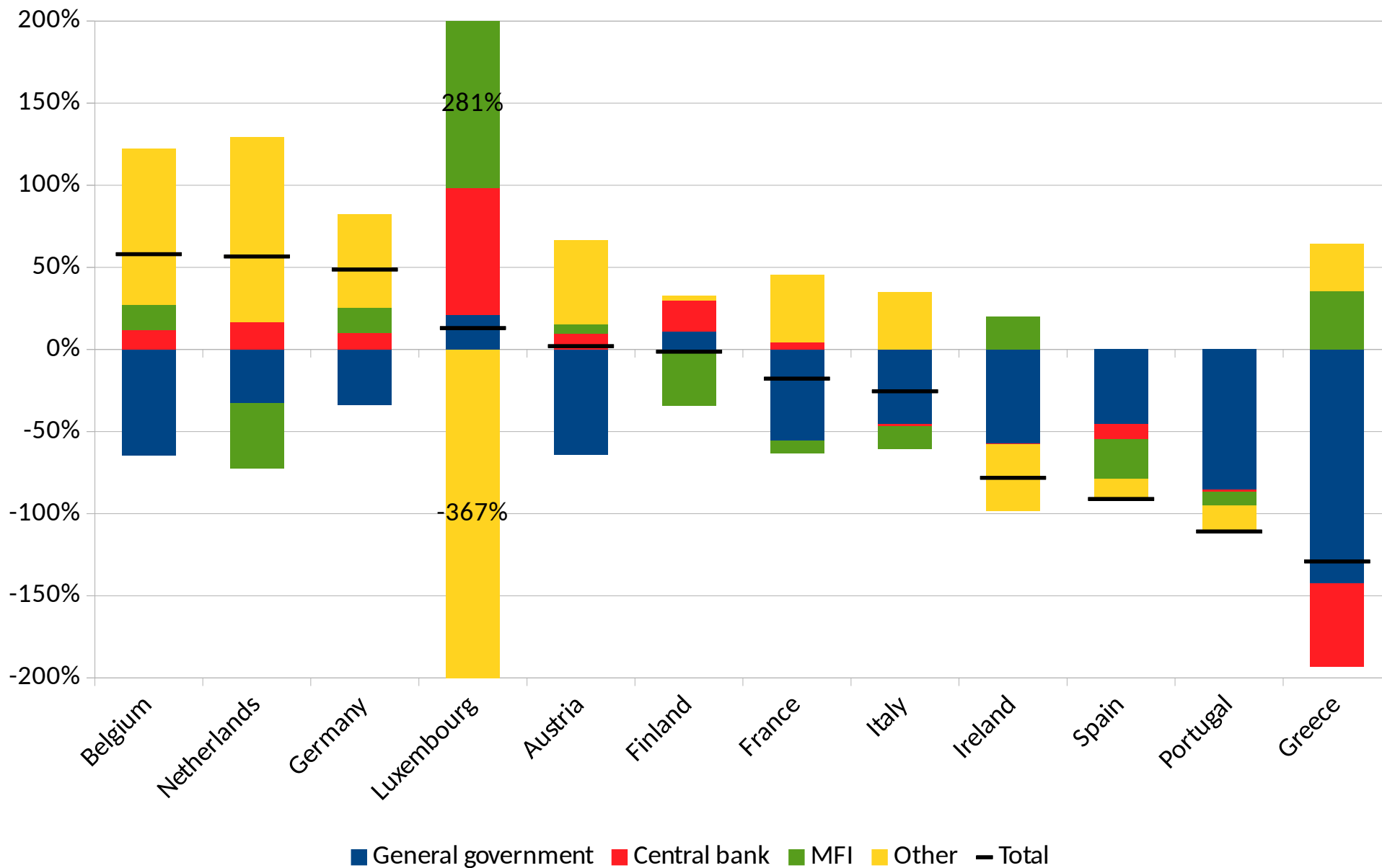
# Overall International investment position

% of domestic GDP, Q3 2015



# IIP sectoral decomposition

Excluding financial derivatives, % of domestic GDP, Q3 2015

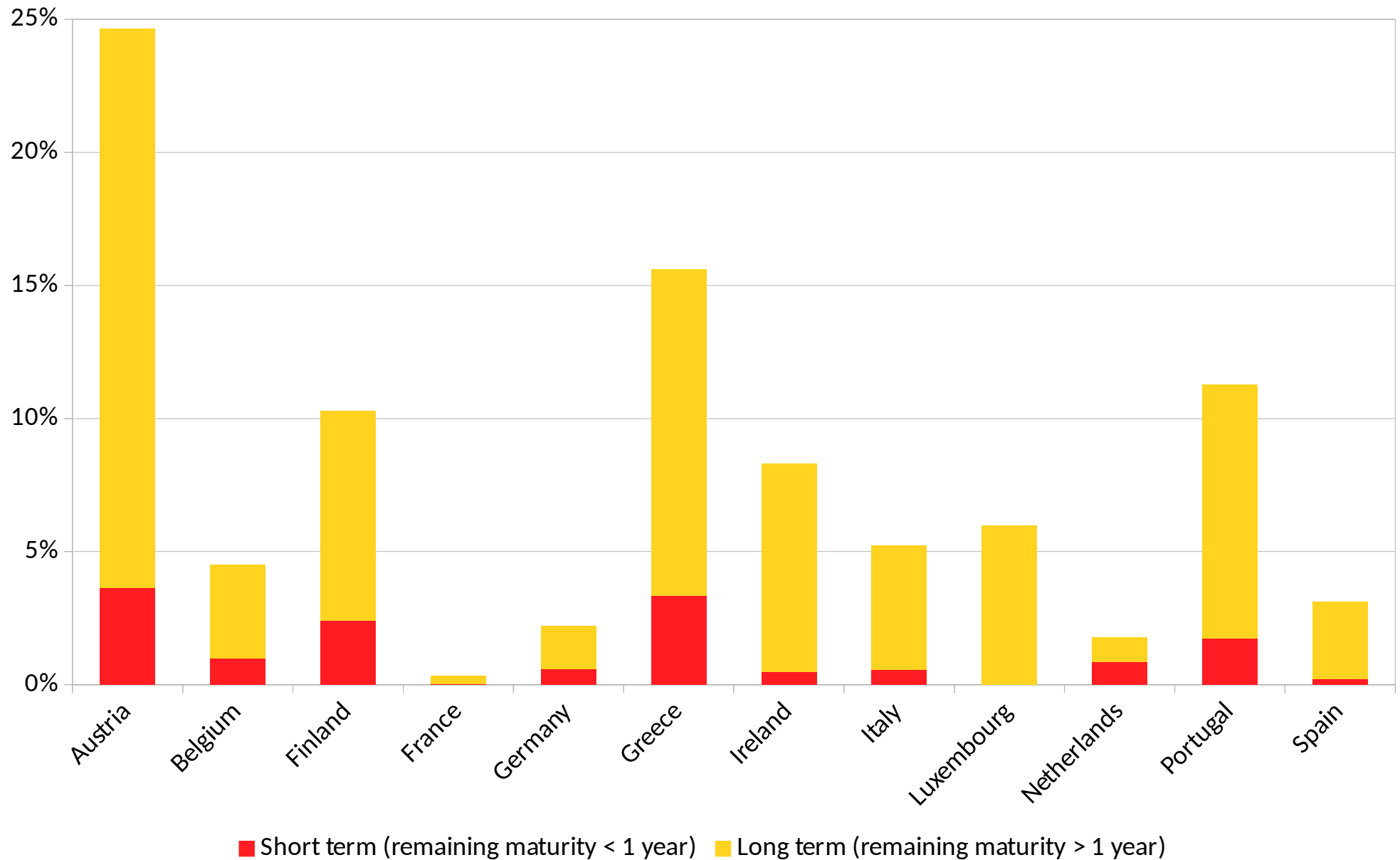




# Relevant debt

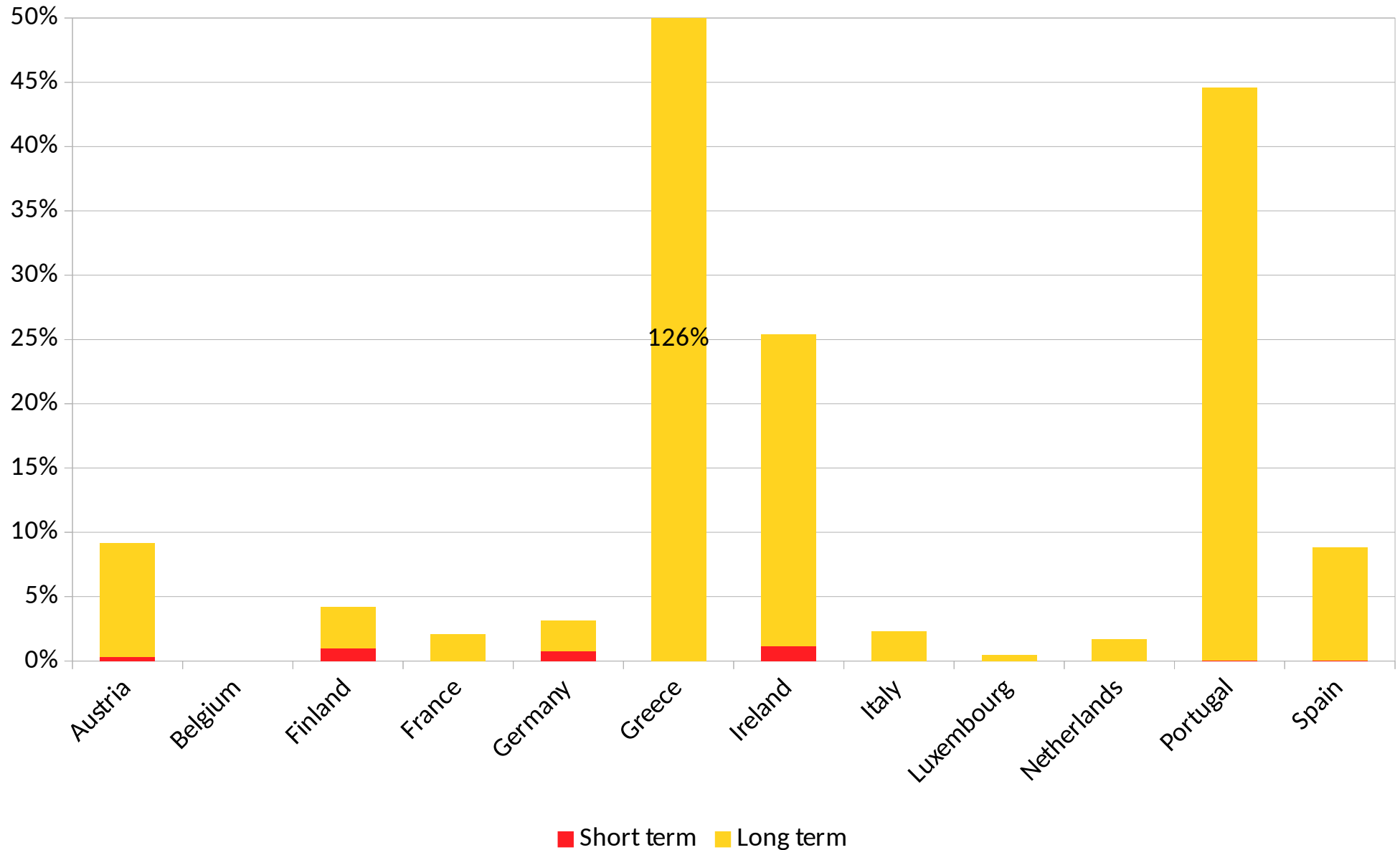
# Intl debt securities of general government

% of domestic GDP, Q4 2015



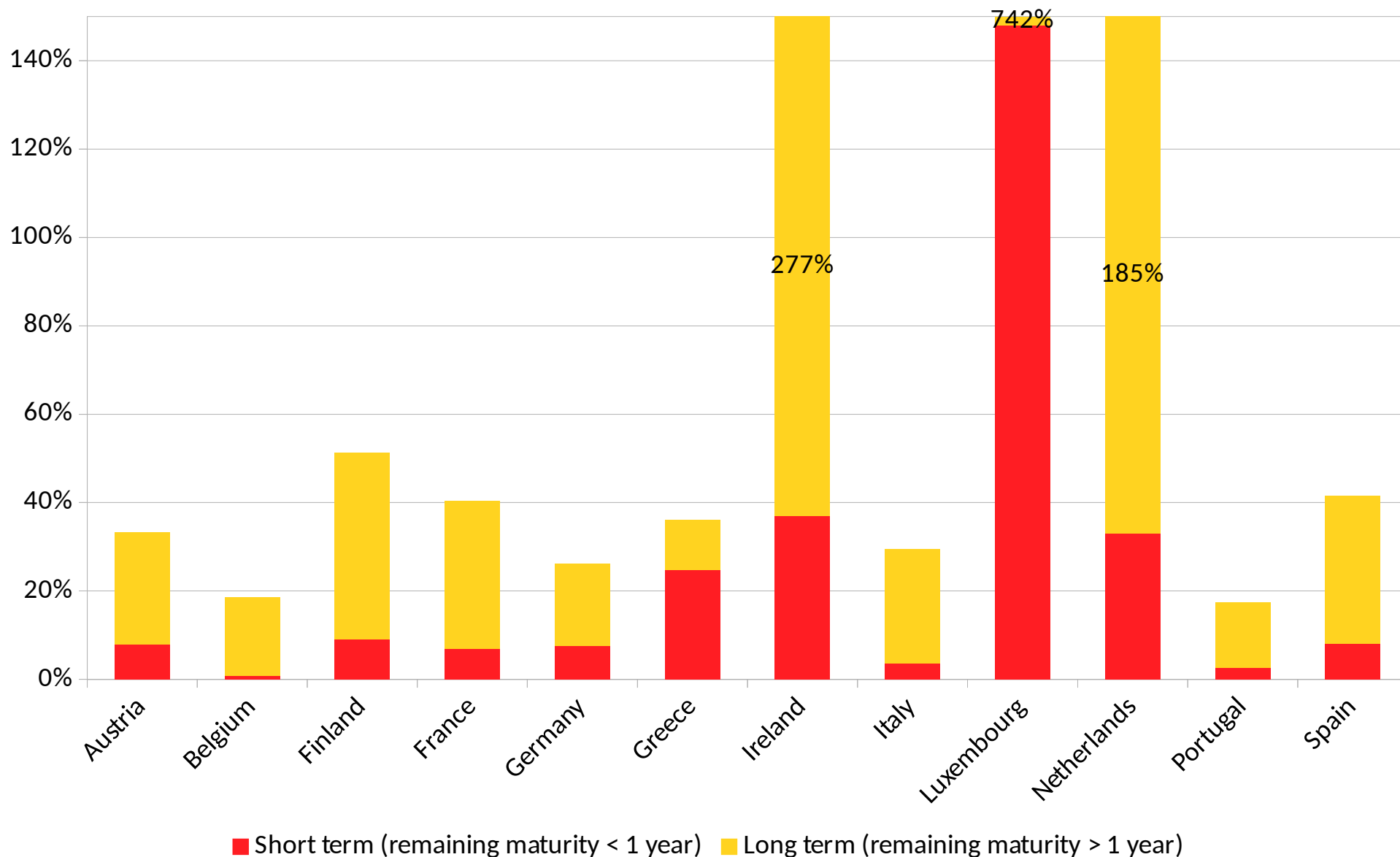
# Foreign loans of general government

% of domestic GDP, Q3 2015



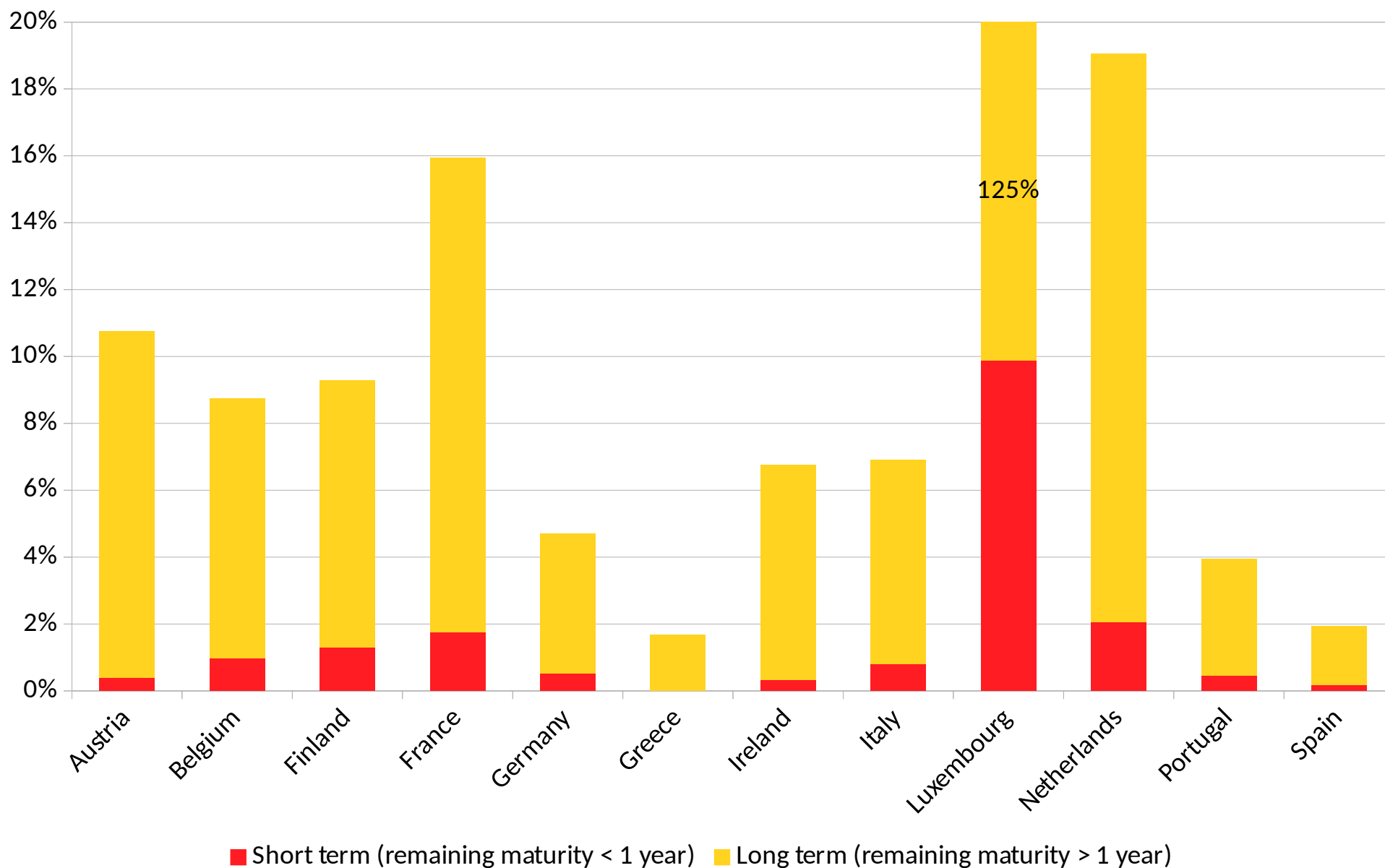
# Intl debt securities of financial corporations

% of domestic GDP, Q4 2015



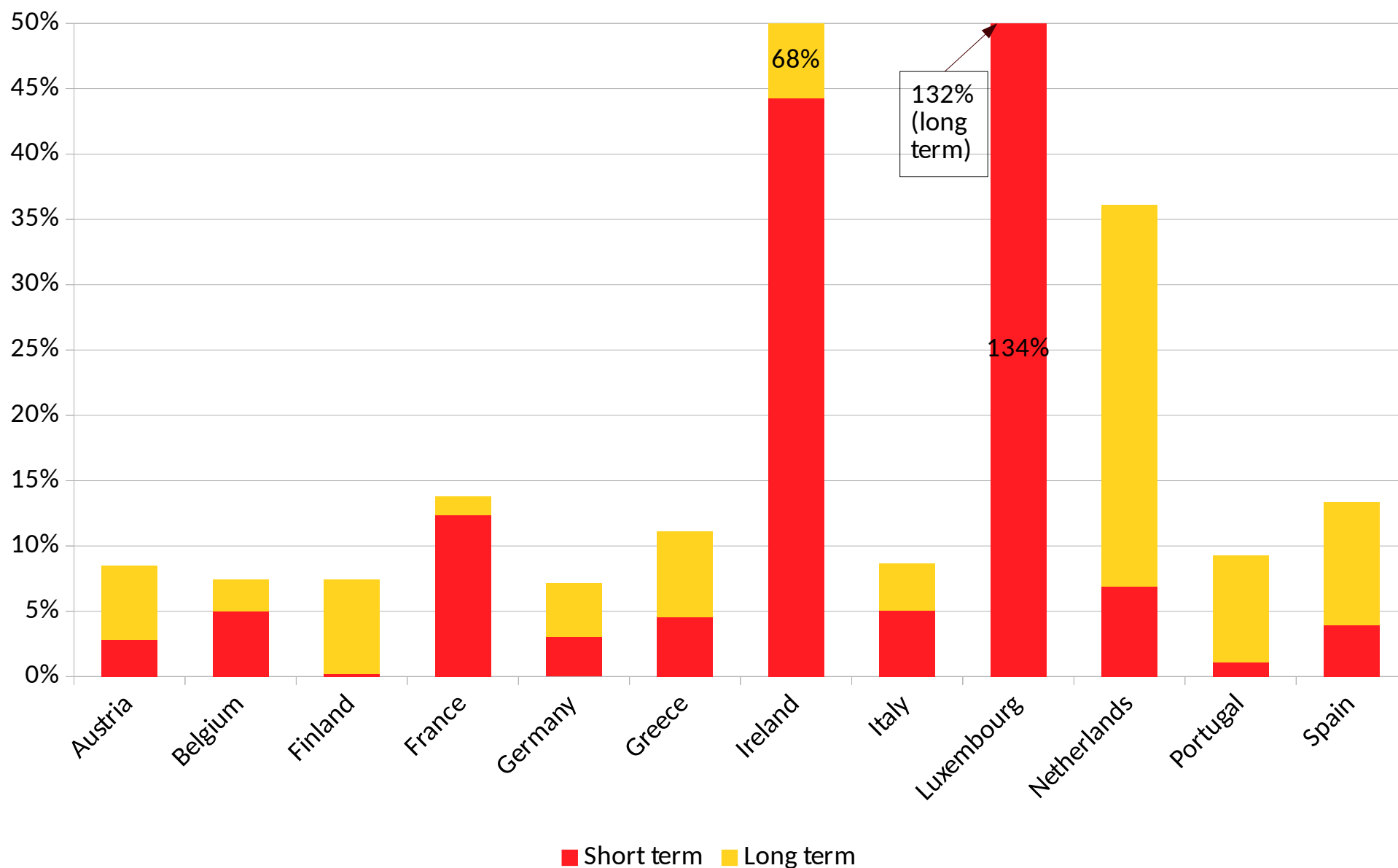
# Intl debt securities of non-financial corps

% of domestic GDP, Q4 2015



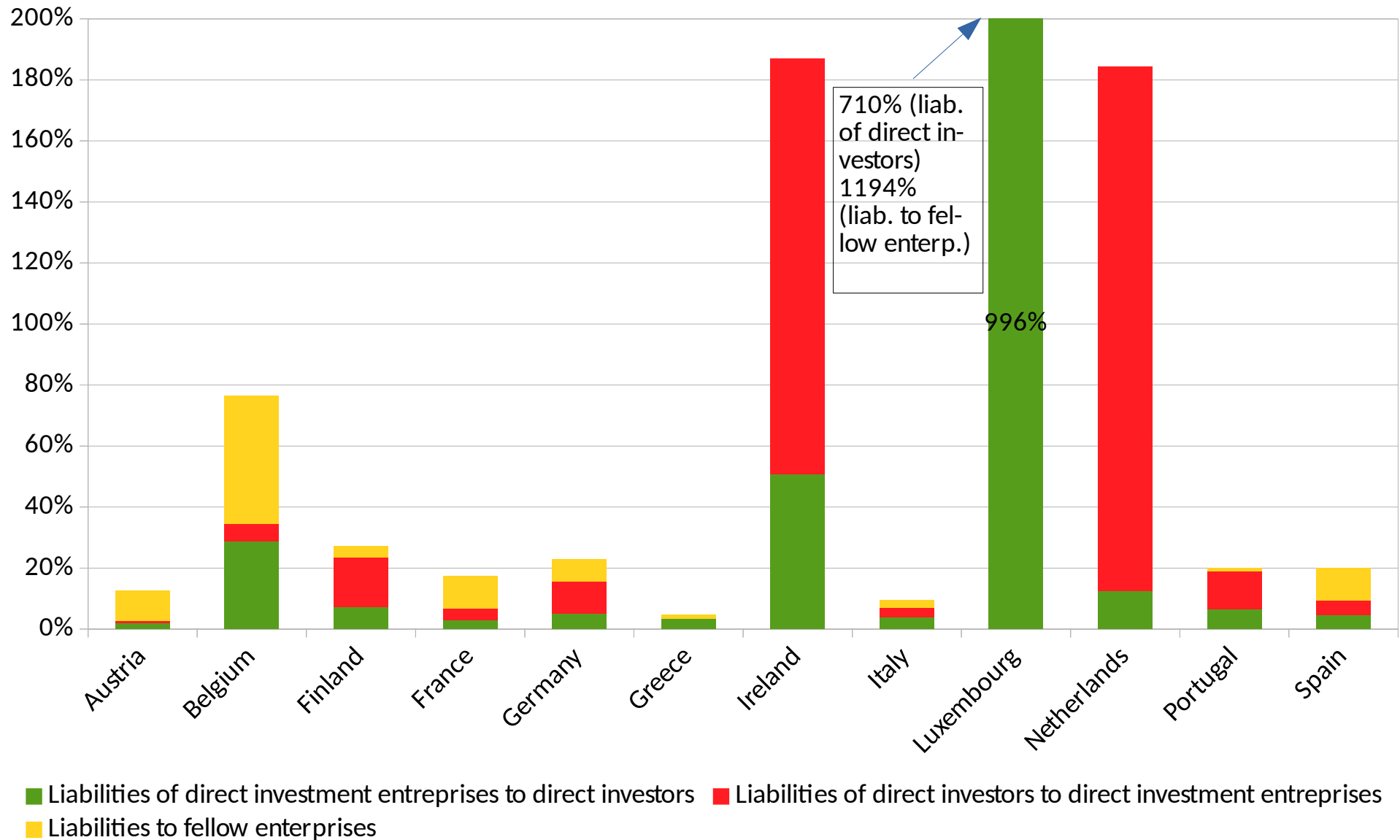
# Foreign loans of "other" sector

% of domestic GDP, Q3 2015



# Foreign direct investment: debt component

% of domestic GDP, Q3 2015



# Relevant debt estimates (1/2)

% of GDP	Greece	Italy	Portugal	Spain	Ireland	France
<b>General government</b>	<b>142%</b>	<b>8%</b>	<b>57%</b>	<b>12%</b>	<b>35%</b>	<b>2%</b>
<i>incl. short term</i>	<i>3%</i>	<i>1%</i>	<i>1%</i>	<i>0%</i>	<i>2%</i>	<i>0%</i>
<b>Financial corporations</b>	<b>42%</b>	<b>30%</b>	<b>18%</b>	<b>43%</b>	<b>395%</b>	<b>42%</b>
<i>incl. short term</i>	<i>29%</i>	<i>4%</i>	<i>2%</i>	<i>8%</i>	<i>98%</i>	<i>8%</i>
<b>Non-financial corps. + households</b>	<b>13%</b>	<b>18%</b>	<b>20%</b>	<b>15%</b>	<b>312%</b>	<b>33%</b>
<i>incl. short term</i>	<i>5%</i>	<i>8%</i>	<i>8%</i>	<i>4%</i>	<i>53%</i>	<i>17%</i>



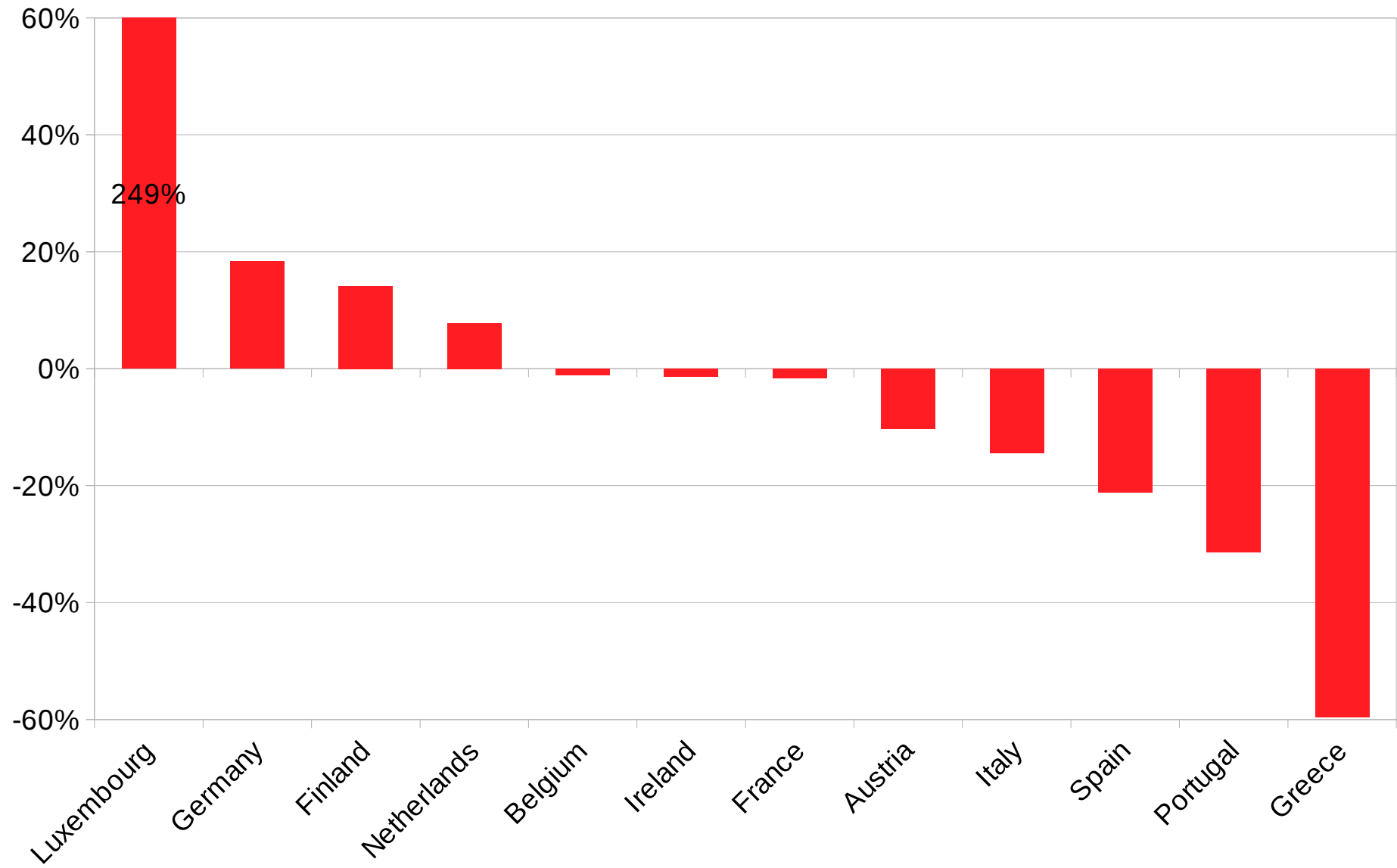
# Relevant debt estimates (2/2)

% of GDP	Germany	Netherlands	Austria	Luxembourg	Belgium	Finland
<b>General government</b>	<b>6%</b>	<b>5%</b>	<b>35%</b>	<b>7%</b>	<b>10%</b>	<b>17%</b>
<i>incl. short term</i>	<i>2%</i>	<i>2%</i>	<i>4%</i>	<i>0%</i>	<i>2%</i>	<i>6%</i>
<b>Financial corporations</b>	<b>28%</b>	<b>225%</b>	<b>35%</b>	<b>876%</b>	<b>22%</b>	<b>59%</b>
<i>incl. short term</i>	<i>9%</i>	<i>36%</i>	<i>8%</i>	<i>135%</i>	<i>1%</i>	<i>17%</i>
<b>Non-financial corps. + households</b>	<b>20%</b>	<b>66%</b>	<b>23%</b>	<b>910%</b>	<b>23%</b>	<b>20%</b>
<i>incl. short term</i>	<i>5%</i>	<i>18%</i>	<i>6%</i>	<i>385%</i>	<i>13%</i>	<i>4%</i>

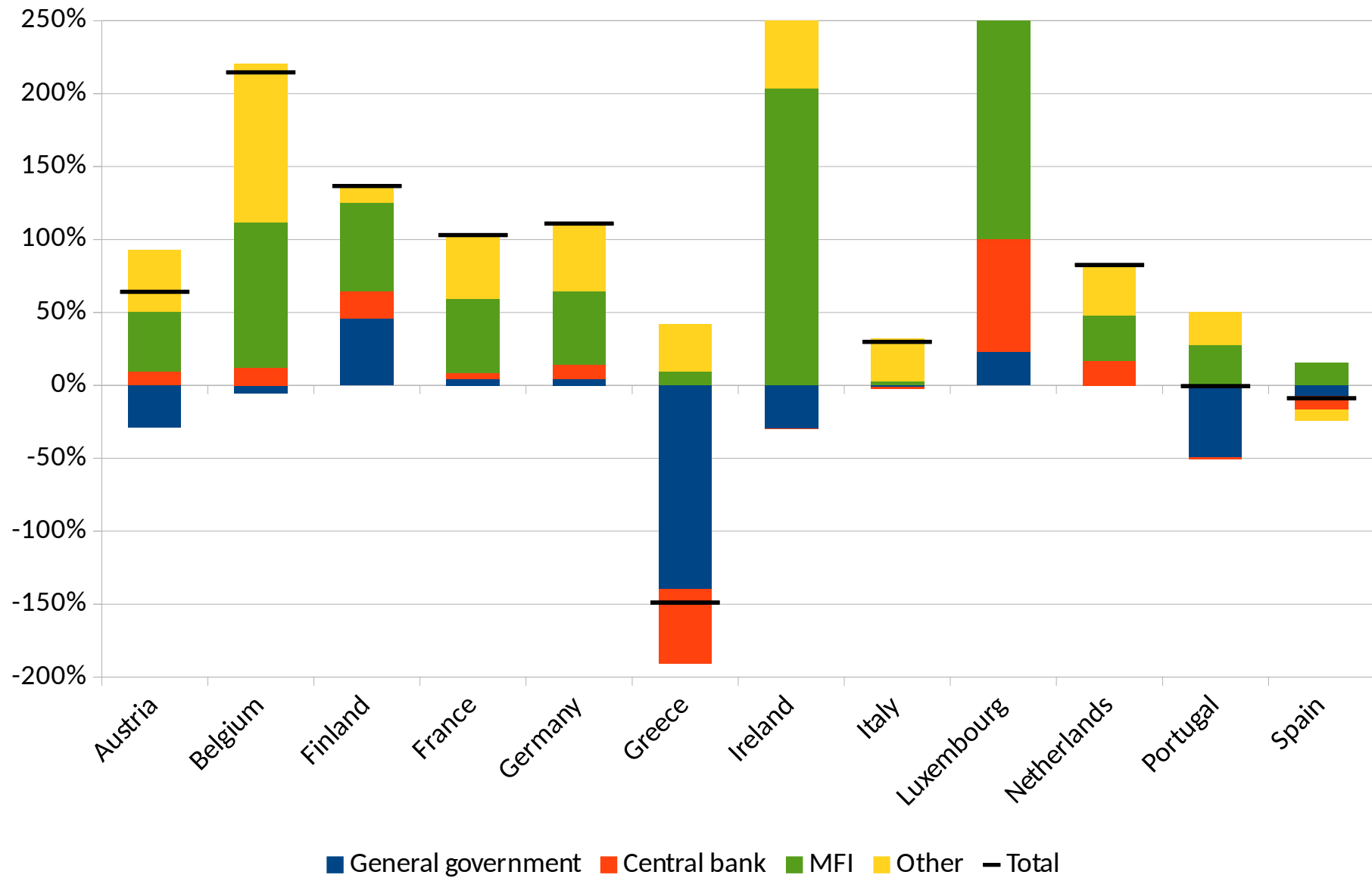
# Relevant net position

# TARGET2 balances

% of domestic GDP, Q3 2015



# Relevant net position estimates



# Relevant net position estimates (1/2)

% of GDP	Greece	Italy	Portugal	Spain	Ireland	France
<b>General government</b>	-140%	-1%	-50%	-8%	-30%	4%
<b>Central bank</b>	-51%	-1%	-1%	-9%	0%	5%
<b>MFI</b>	10%	3%	28%	15%	204%	51%
<b>Other</b>	32%	29%	23%	-7%	428%	44%
<b>Total</b>	-149%	30%	0%	-9%	601%	103%

# Relevant net position estimates (2/2)

% of GDP	Germany	Netherlands	Austria	Luxembourg	Belgium	Finland
<b>General government</b>	4%	0%	-29%	23%	-6%	46%
<b>Central bank</b>	10%	17%	10%	77%	12%	19%
<b>MFI</b>	50%	31%	41%	1338%	100%	60%
<b>Other</b>	47%	35%	42%	5363%	109%	12%
<b>Total</b>	111%	83%	64%	6801%	215%	137%

# Composite risk index

# Constructing the risk index

- Three index components
  - total debt change after €-exit
  - short term component of the latter
  - net worth effect
- Computed by multiplying:
  - foreign currency debt / net position
  - with anticipated exchange rate movements
- Thresholds to determine risk by country/sector
  - short term debt burden: <1% GDP low risk, >2% high risk
  - total debt / balance sheet burden: <5% low risk, >10% high risk
  - positive balance sheet movements can partially offset negative debt effects



# Exchange rate hypotheses after €-exit

Country	Exchange rate adjustment
Belgium	-17%
Germany	+14%
Ireland	-6%
Greece	-38%
Spain	-10%
France	-11%
Italy	+1%
Luxembourg*	+14%
Netherlands	+15%
Austria	+15%
Portugal	-14%
Finland	-18%

Source: OFCE calculations in iAGS (2016), based on 2014 data.

\* Exception for Luxembourg: peg of its new currency to Germany.

# Net worth variation

% of GDP	Central bank + government sector	Financial corporations	Non-financial corps. + households
<b>Austria</b>	+3,0%	-6,3%	-6,5%
<b>Belgium</b>	+1,1%	+16,5%	+18,0%
<b>Finland</b>	+12,0%	+11,2%	+2,1%
<b>France</b>	+1,0%	+5,7%	+4,9%
<b>Germany</b>	-1,9%	-6,7%	-6,3%
<b>Greece</b>	-72,8%	+3,7%	+12,3%
<b>Ireland</b>	-1,7%	+11,8%	+24,7%
<b>Italy</b>	+0,0%	+0,0%	-0,2%
<b>Luxembourg</b>	-13,6%	-181,0%	-725,4%
<b>Netherlands</b>	-2,4%	-4,6%	-5,1%
<b>Portugal</b>	-7,2%	+3,9%	+3,2%
<b>Spain</b>	-1,8%	+1,6%	-0,8%

# Total debt variation

% of GDP	Central bank + government sector	Financial corporations	Non-financial corps. + households
<b>Austria</b>	-5,4%	-5,3%	-3,6%
<b>Belgium</b>	+1,6%	+3,7%	+3,7%
<b>Finland</b>	+3,1%	+10,9%	+3,7%
<b>France</b>	+0,3%	+4,7%	+3,7%
<b>Germany</b>	-0,8%	-3,8%	-2,7%
<b>Greece</b>	+54,1%	+16,2%	+5,1%
<b>Ireland</b>	+2,0%	+22,8%	+18,0%
<b>Italy</b>	-0,1%	-0,2%	-0,1%
<b>Luxembourg</b>	-0,9%	-118,5%	-123,0%
<b>Netherlands</b>	-0,7%	-33,0%	-9,7%
<b>Portugal</b>	+8,0%	+2,6%	+2,9%
<b>Spain</b>	+1,3%	+4,5%	+1,6%

# Short term debt variation

% of GDP	Central bank + government sector	Financial corporations	Non-financial corps. + households
<b>Austria</b>	-0,7%	-1,2%	-1,0%
<b>Belgium</b>	+0,3%	+0,2%	+2,1%
<b>Finland</b>	+1,1%	+3,2%	+0,8%
<b>France</b>	-0,0%	+0,9%	+2,0%
<b>Germany</b>	-0,2%	-1,2%	-0,7%
<b>Greece</b>	+1,3%	+11,0%	+1,9%
<b>Ireland</b>	+0,1%	+5,6%	+3,0%
<b>Italy</b>	-0,0%	-0,0%	-0,0%
<b>Luxembourg</b>	-0,0%	-18,2%	-52,1%
<b>Netherlands</b>	-0,3%	-5,3%	-2,6%
<b>Portugal</b>	+0,1%	+0,2%	+1,2%
<b>Spain</b>	-0,0%	+0,9%	+0,4%

# Net worth variation

% of GDP	Central bank + government sector	Financial corporations	Non-financial corps. + households
<b>Austria</b>	+3,0%	-6,3%	-6,5%
<b>Belgium</b>	+1,1%	+16,5%	+18,0%
<b>Finland</b>	+12,0%	+11,2%	+2,1%
<b>France</b>	+1,0%	+5,7%	+4,9%
<b>Germany</b>	-1,9%	-6,7%	-6,3%
<b>Greece</b>	-72,8%	+3,7%	+12,3%
<b>Ireland</b>	-1,7%	+11,8%	+24,7%
<b>Italy</b>	+0,0%	+0,0%	-0,2%
<b>Luxembourg</b>	-13,6%	-181,0%	-725,4%
<b>Netherlands</b>	-2,4%	-4,6%	-5,1%
<b>Portugal</b>	-7,2%	+3,9%	+3,2%
<b>Spain</b>	-1,8%	+1,6%	-0,8%

# Composite risk index

	General government + central bank	Financial corporations	Non-financial corps. + households
Austria	Green	Yellow	Yellow
Belgium	Yellow	Green	Yellow
Finland	Green	Orange	Yellow
France	Green	Green	Yellow
Germany	Green	Yellow	Yellow
Greece	Red	Red	Yellow
Ireland	Yellow	Red	Orange
Italy	Green	Green	Green
Luxembourg	Yellow	Red	Red
Netherlands	Green	Green	Yellow
Portugal	Orange	Yellow	Yellow
Spain	Yellow	Yellow	Yellow

# Policy recommendations

# Ex ante limitation of exposure (1/2)

- Cross-country exposure already reduced by EZ crisis
  - *ECB, 2016*
- Further reduction is good planning given uncertain EZ future
- First best: diminishing stocks by rebalancing flows, *i.e.* current accounts (through reflation in core)
- Or, “voluntary refragmentation”:
  - discourage exposure of firms to international debt markets and foreign banks
  - encourage domestic savers to buy domestic securities
  - diminishes gross positions (but not net ones)
  - somewhat contradictory with single currency and at odds with Capital Markets Union action plan of the Commission



# *Ex ante* limitation of exposure (2/2)

- Or, uncooperatively alter governing laws
  - emit under domestic law instead of foreign law
  - for banks, attract deposits from households of core
  - in both cases, incentives needed (higher interest rates)
  - in Greece, the opposite actually happened

# Ex post mitigation (1/2)

- Cooperation is key
  - incentives also for core countries exposed to loss on their foreign assets
- Provide clear legal framework for redenomination (ECU-2 in case of full blown break up)
- Avoid exchange rate overshooting
  - clearly defined new parity objective and defend it
  - temporary capital controls may be needed
- Liquidity provisioning
  - expansive monetary policy (but possibly conflicting with the objective of stabilizing the new exchange rate in devaluing country)
  - network of public investment banks may help
  - hard foreign currency delivered in priority to firms importing crucial inputs
  - if banking crisis: quick restructuring (nationalization, good/bad banks split)

# Ex post mitigation (2/2)

- Solvency issues
  - default seems unavoidable for Greece's public debt (and maybe Portugal)
  - but default to be avoided for non-financial corps.
  - many non-fin. corps. should absorb shock without help
  - ideally, implement redistribution between winners and losers (but technically difficult)
  - for strategic sectors: injection of public capital; opportunity for industrial policy and definancialization

# Conclusion

- Internal devaluation strategy  $\Rightarrow$  debt deflation = balance sheet effect (within €-area)!
- Limited overall risk of €-exit or break-up
- But some specific vulnerabilities:
  - Default on Greece's public debt and TARGET2 unavoidable; Portugal at risk
  - High risk for financial sector in Greece, Ireland, Luxembourg; medium in Finland
  - Non-financial sector more exposed in Ireland (though may be artifact of non-bank financial firms)
- Potential for negotiation because core countries also impacted

# Future work

- Spill-overs from defaults
- Intra-country redistributive impacts
- Country case studies
- Technical aspects:
  - Disentangle financial non-bank from rest of private non-financial
  - Disentangle € and extra-european currencies
  - Deal with financial derivatives

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