Economic outlook

Presentation to IFAC Council

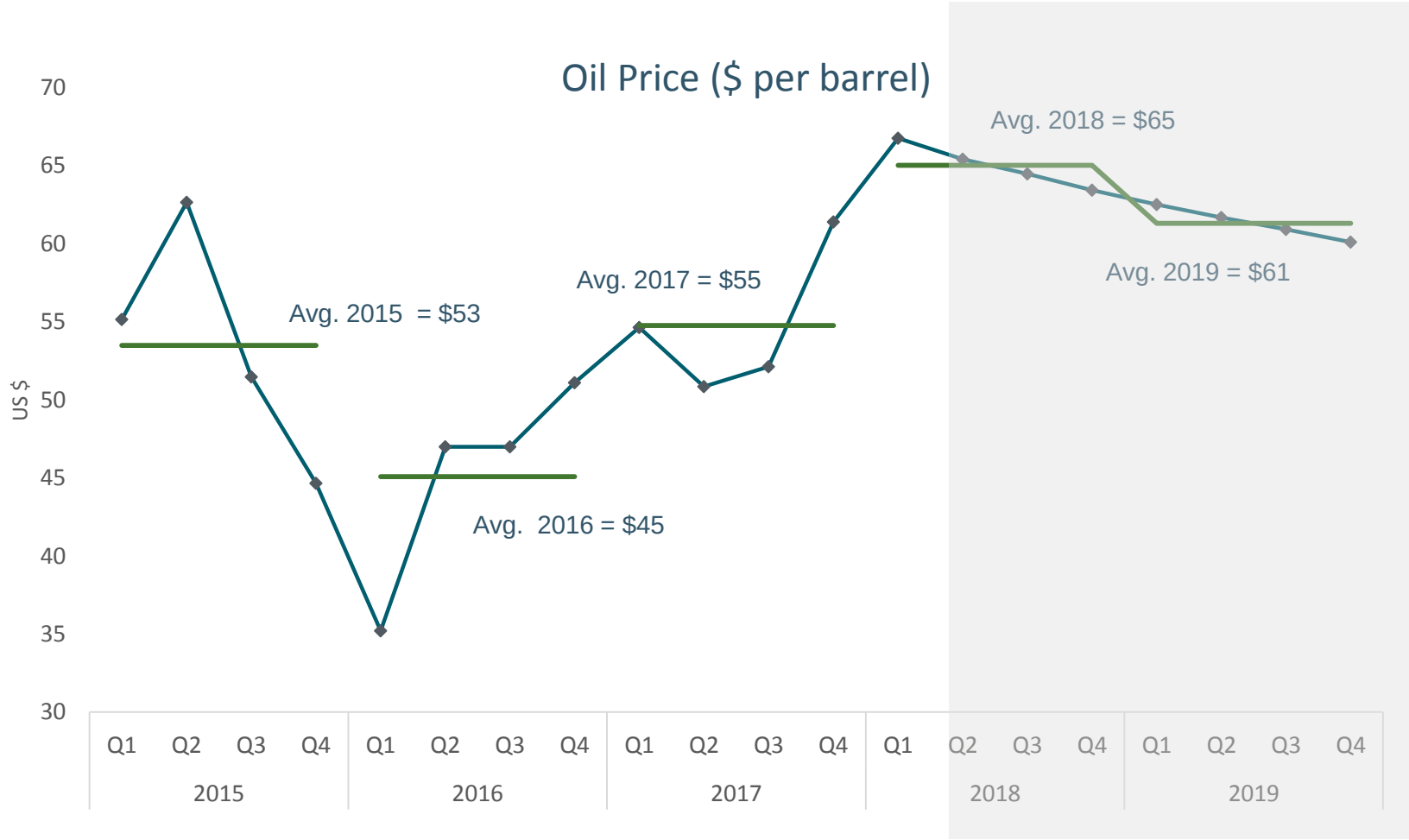
Economic Division, Department of Finance

6 April 2018

An Roinn Airgeadais
Department of Finance

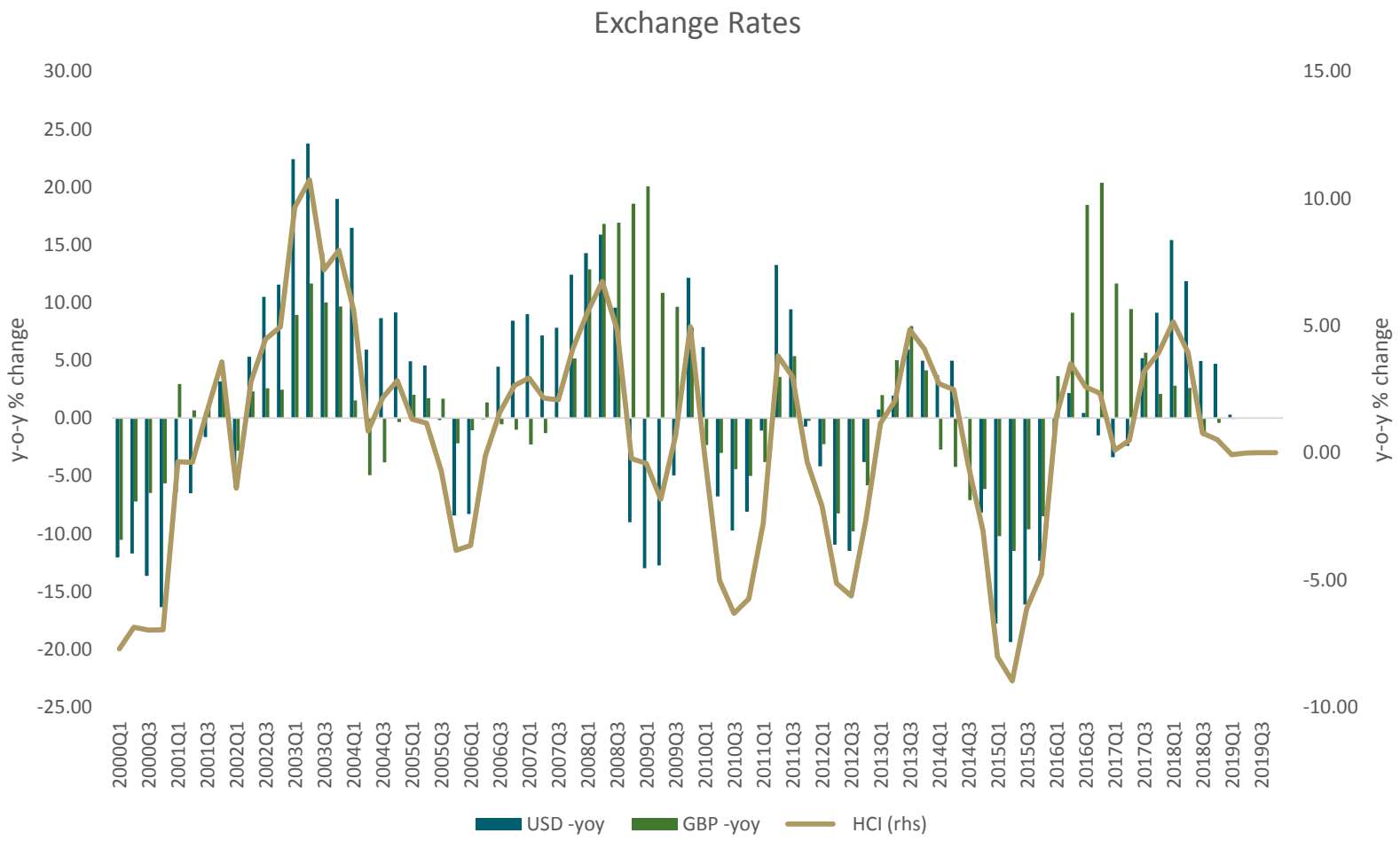
External assumptions

Oil prices are up on 2017 levels…

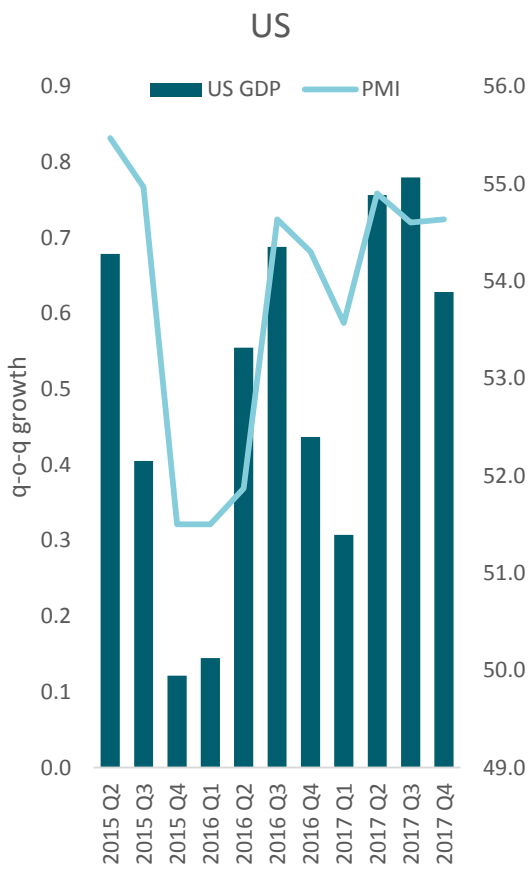


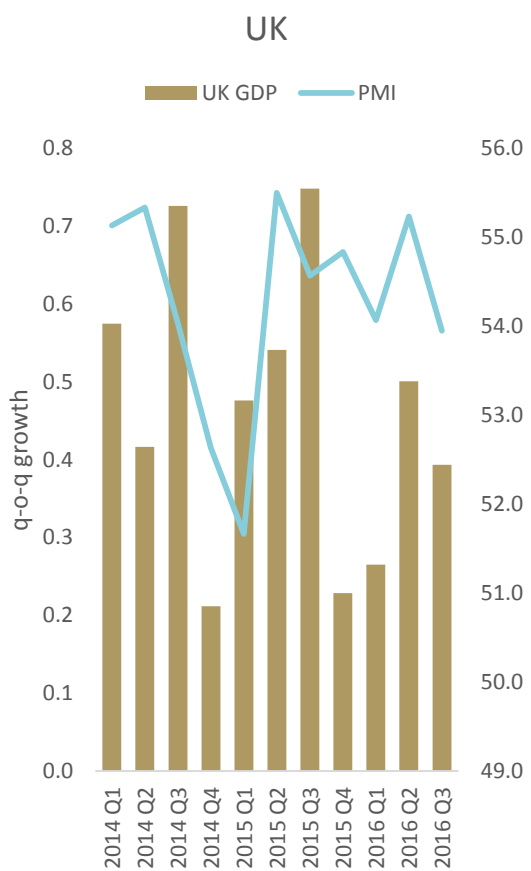
Source: Brent crude oil spot and futures markets

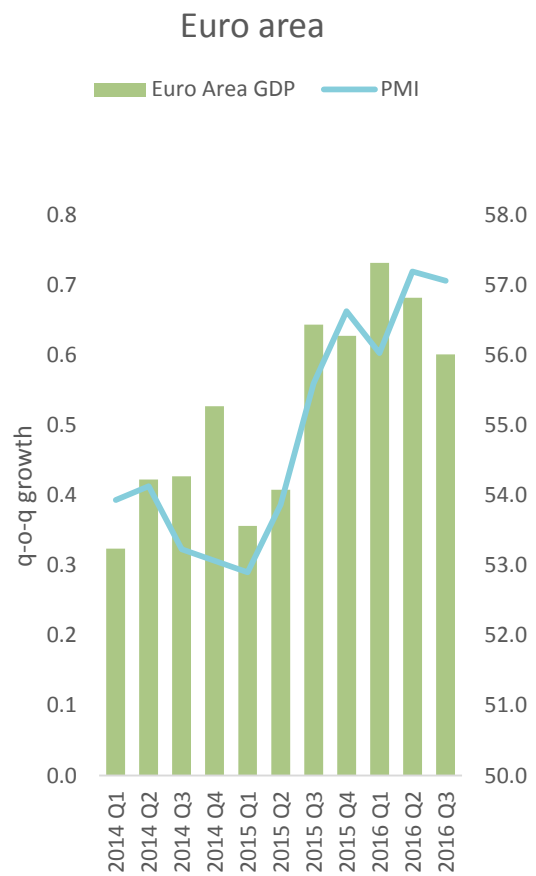
Appreciation in trade-weighted value of the euro this year…



Economic growth in Ireland's key trading partners is generally picking-up...



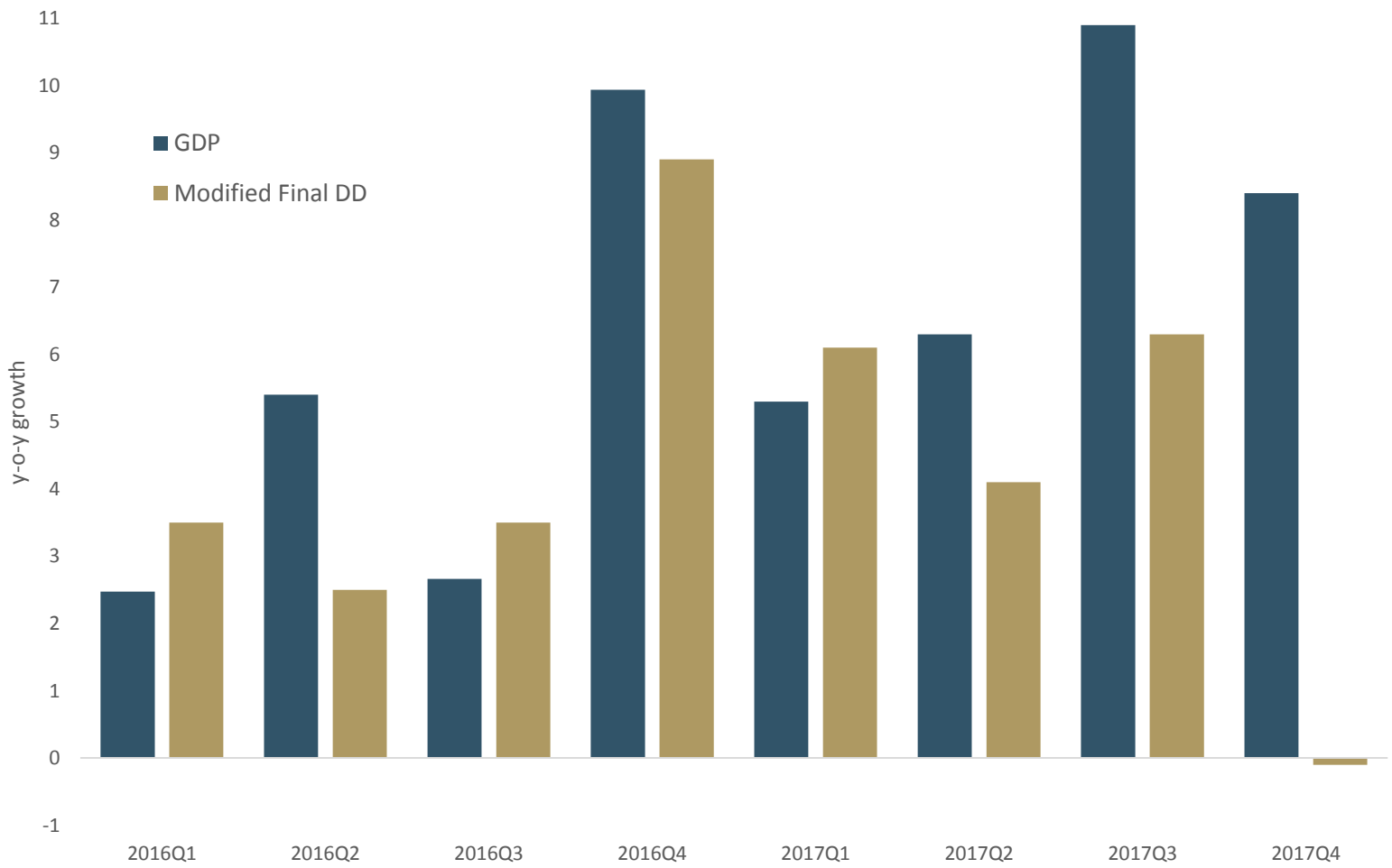




Sources:
1. GDP: US: Bureau of Economic Analysis; UK: Office for National Statistics; Euro Area: Eurostat
2. PMI: Markit

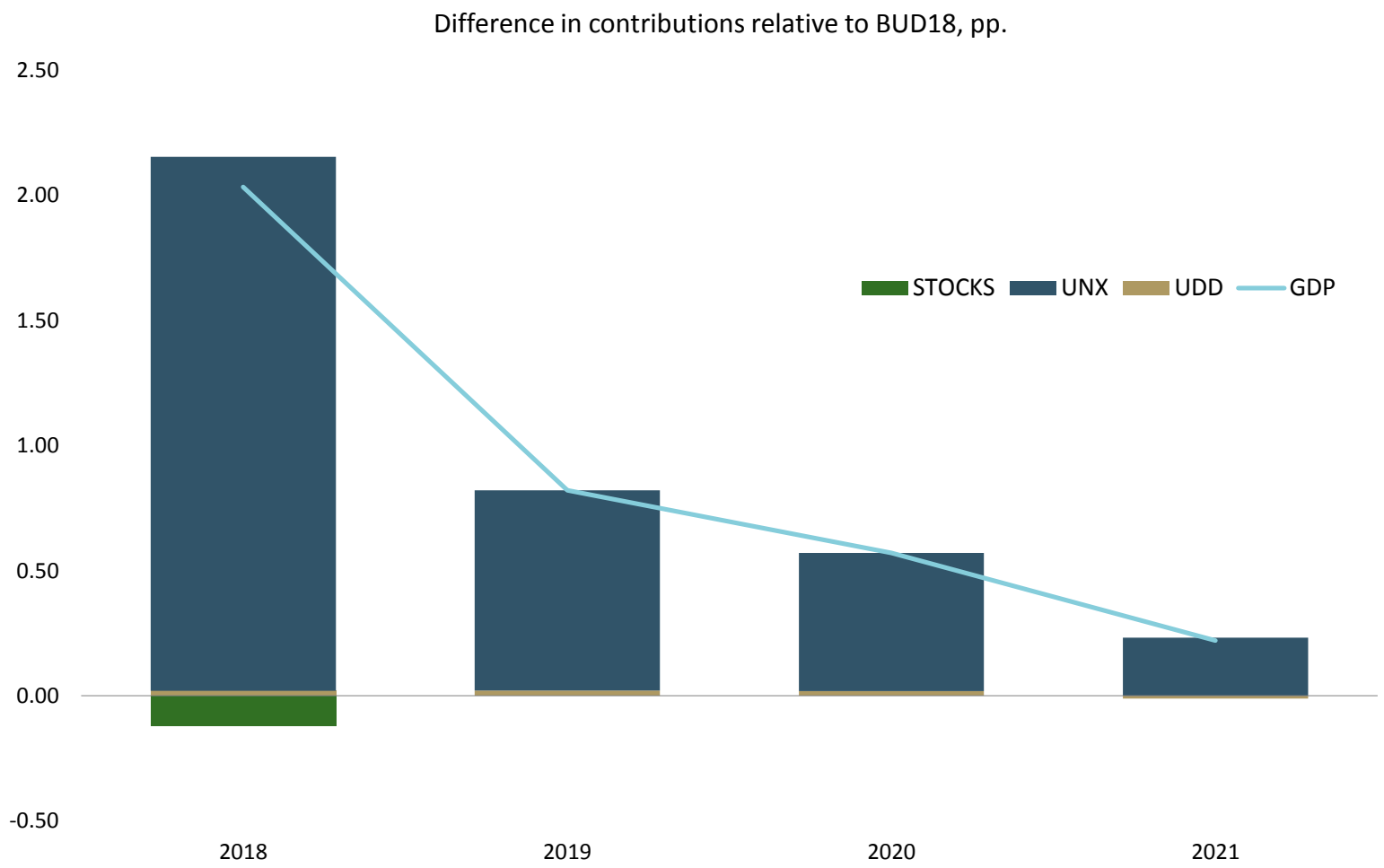
Short-run economic outlook

GDP surprised on the upside in H2 with the acceleration driven mainly by statistical factors…



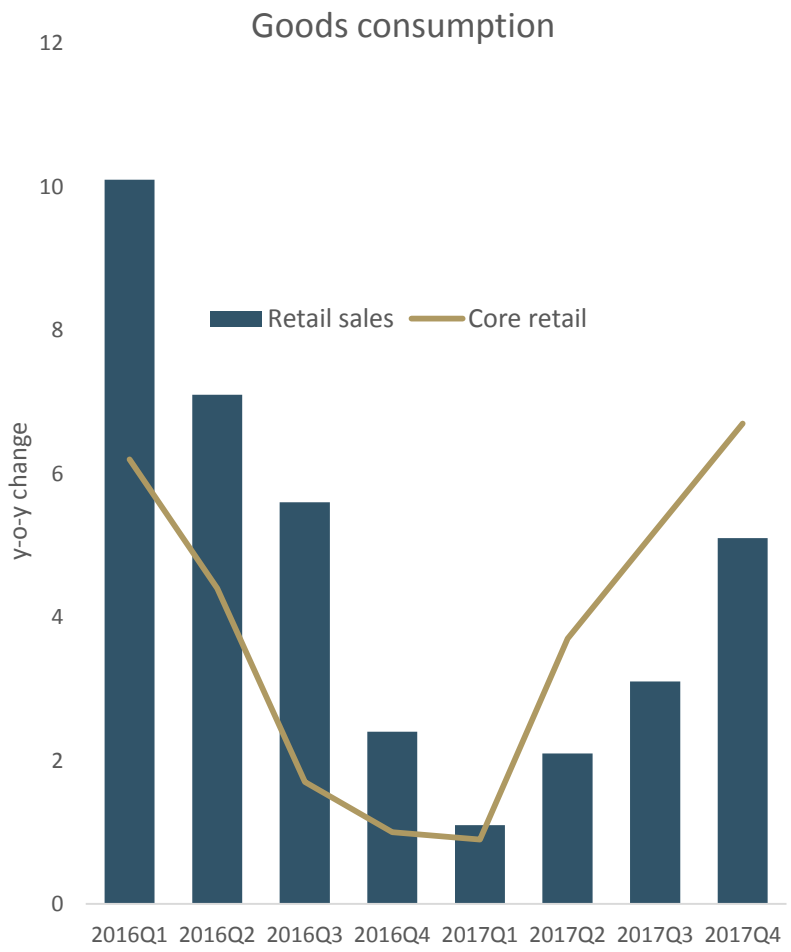
Source: CSO

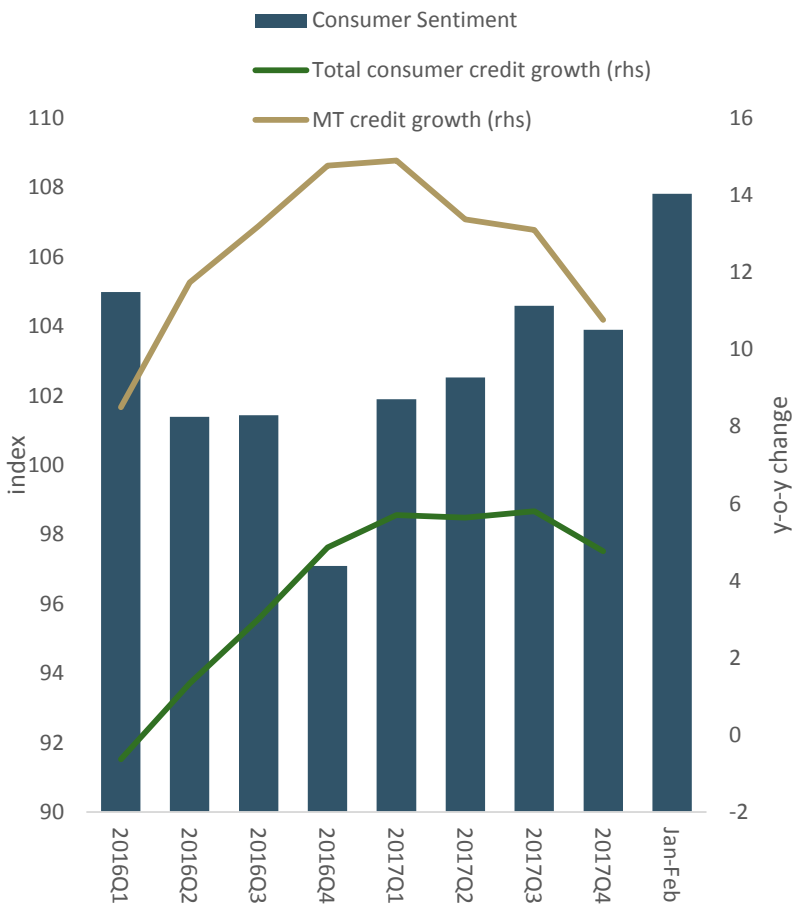
Significant upward revision to short-term GDP forecasts…



Source: DoF calculations

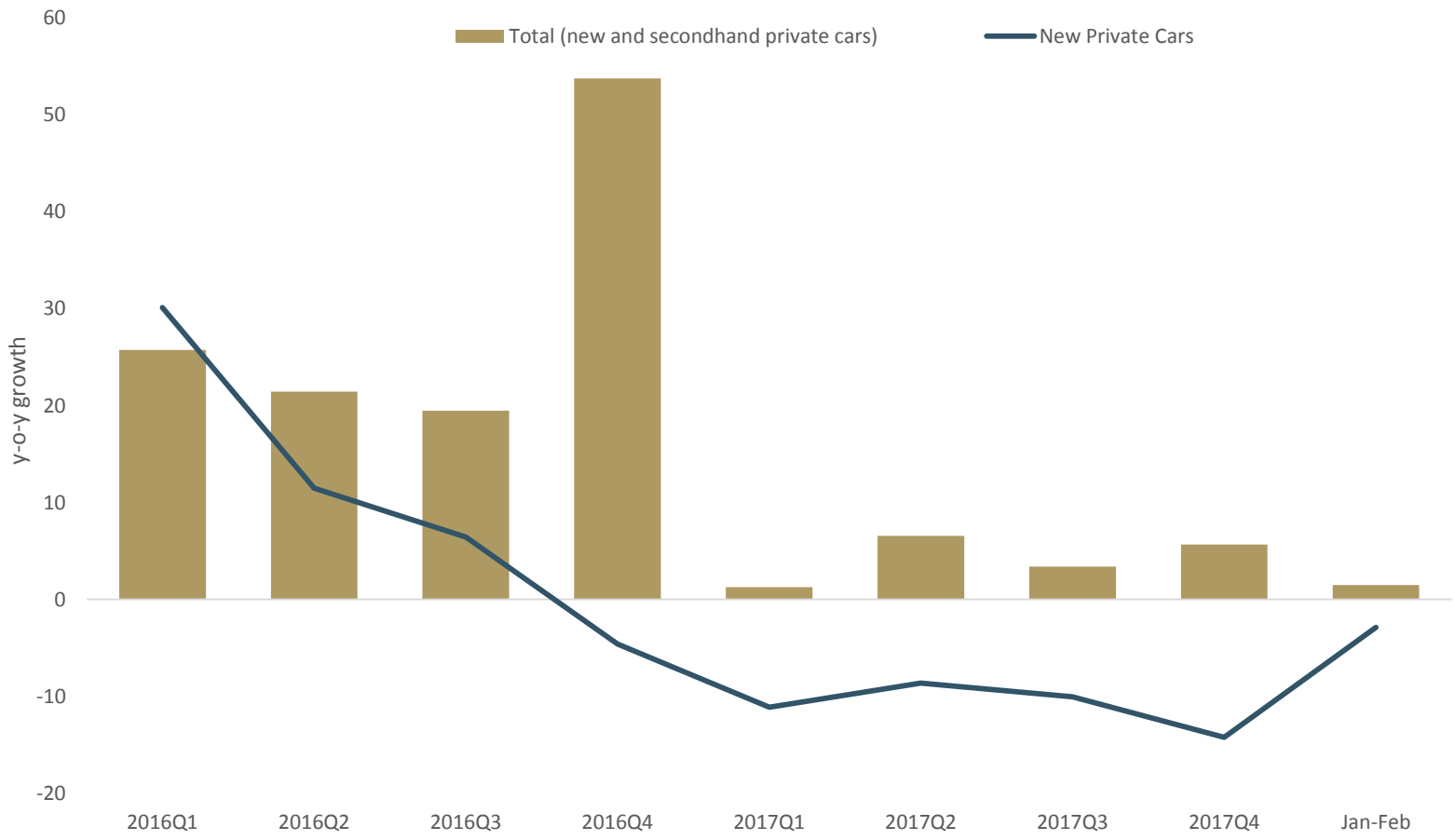
Core goods continues to drive growth in consumption…





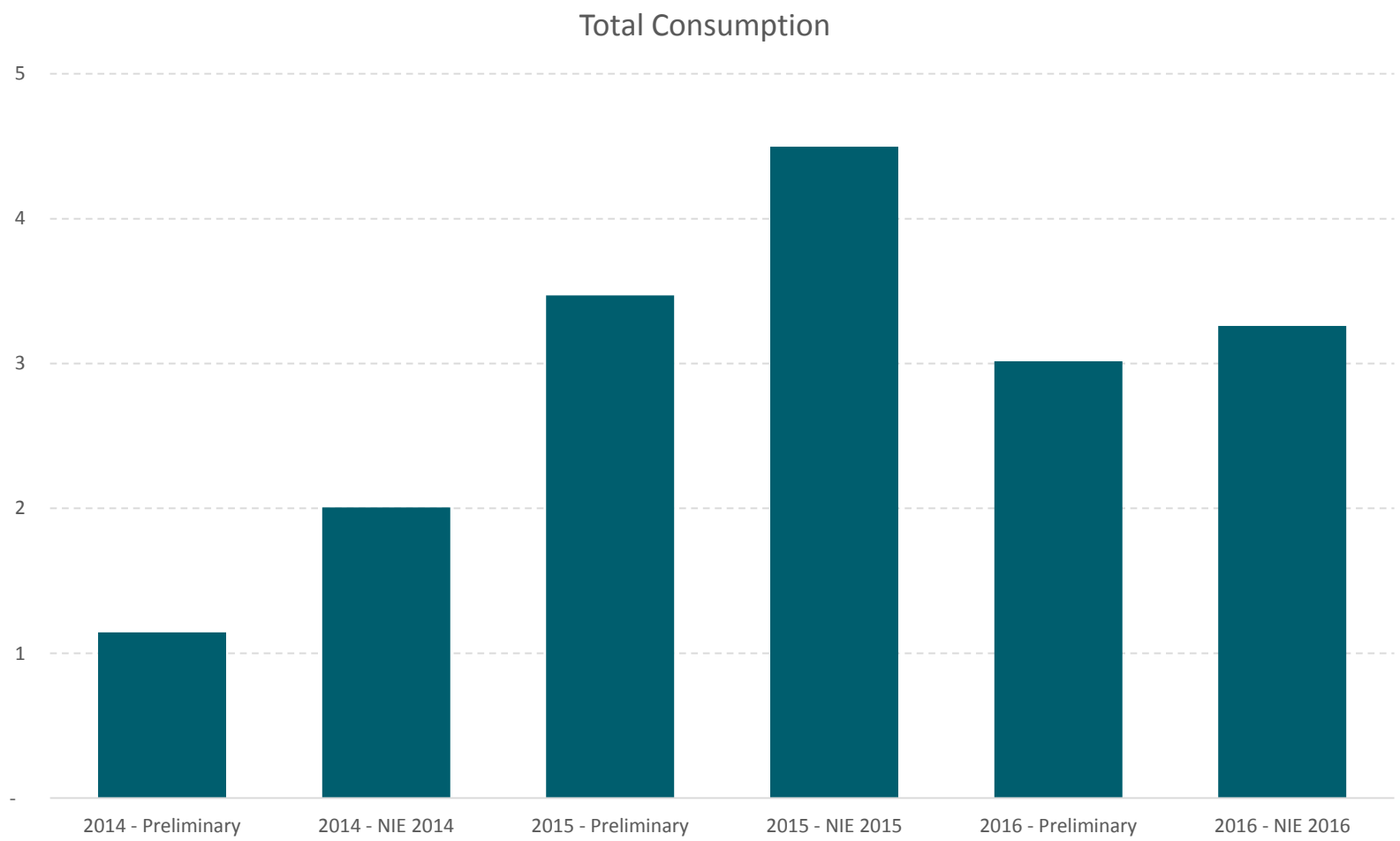
Source: CSO, ESRI-KBC, CBI

Euro-sterling appreciation continues to weigh on car sales…



Source: CSO

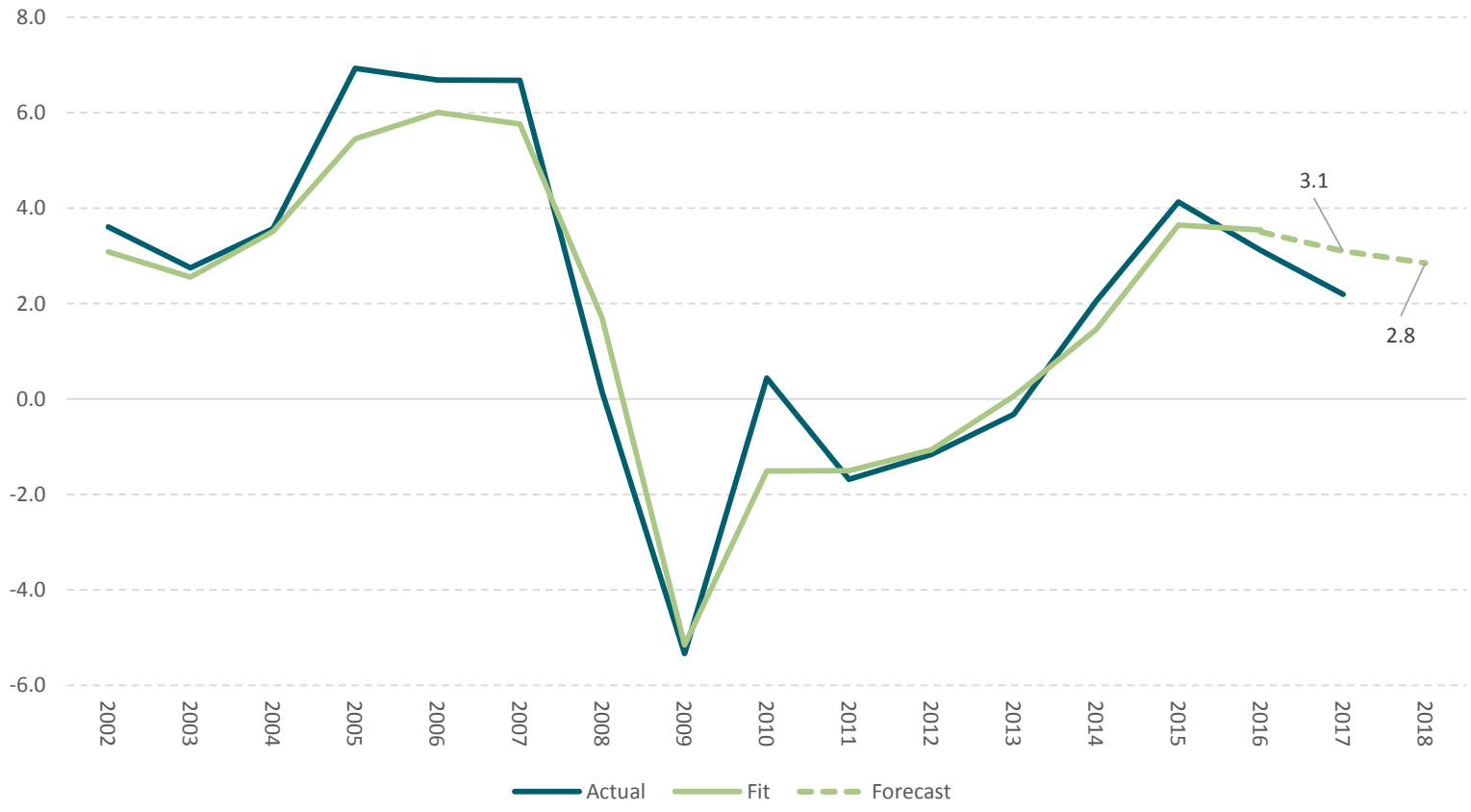
Consistent upward revisions to consumption data…



Source: CSO

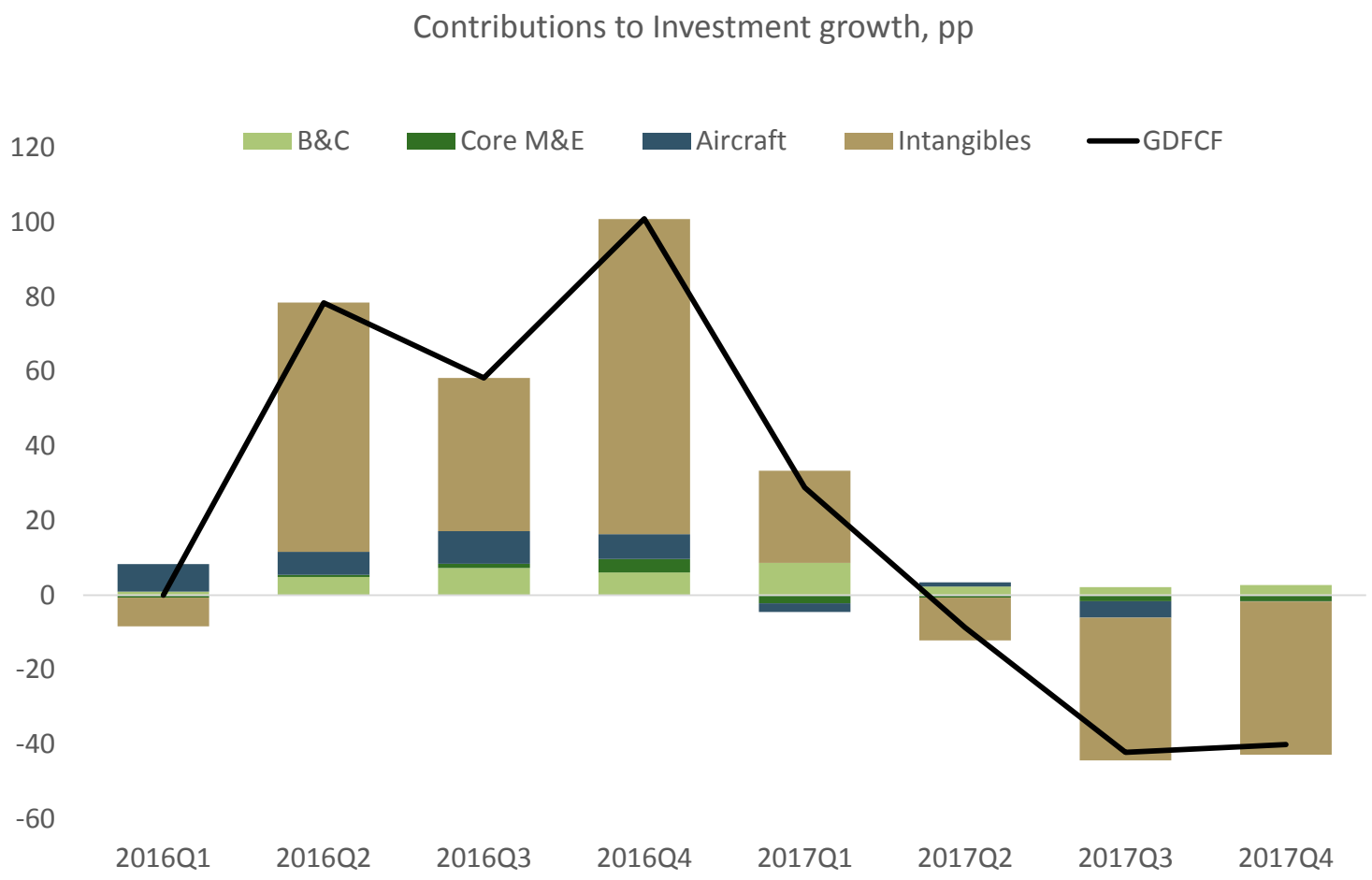
Total consumption model…

C = 0.17*disp_inc - 0.26*unemp + 0.72*C(-1)
R^2 = 0.84



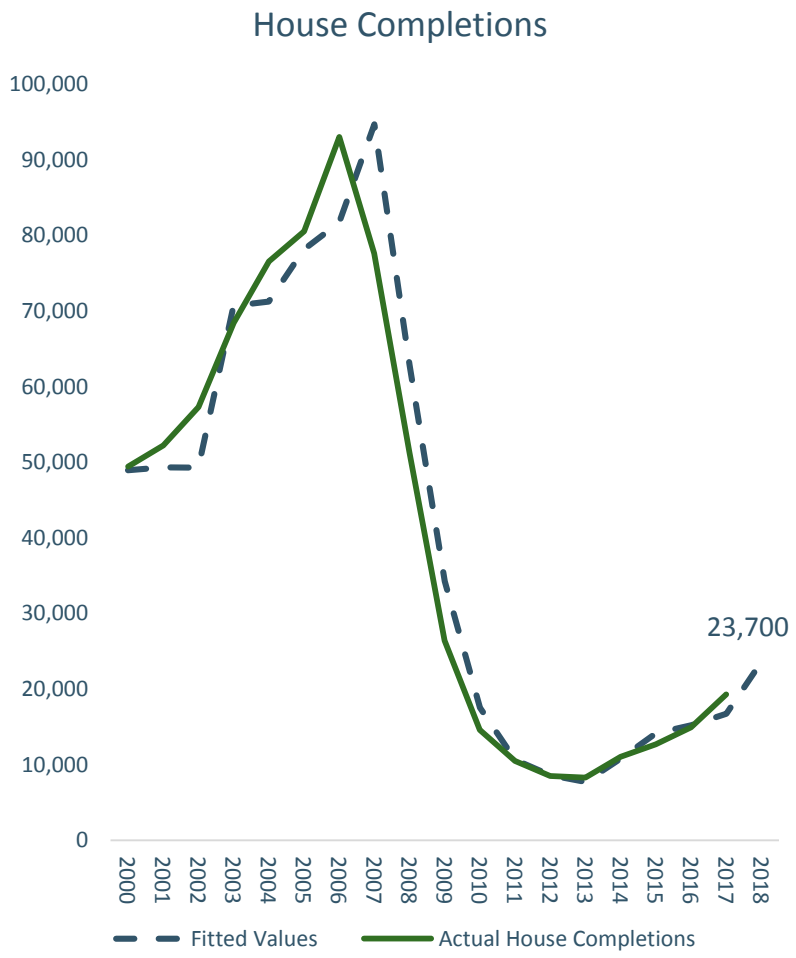
Source: CSO, DoF calculations

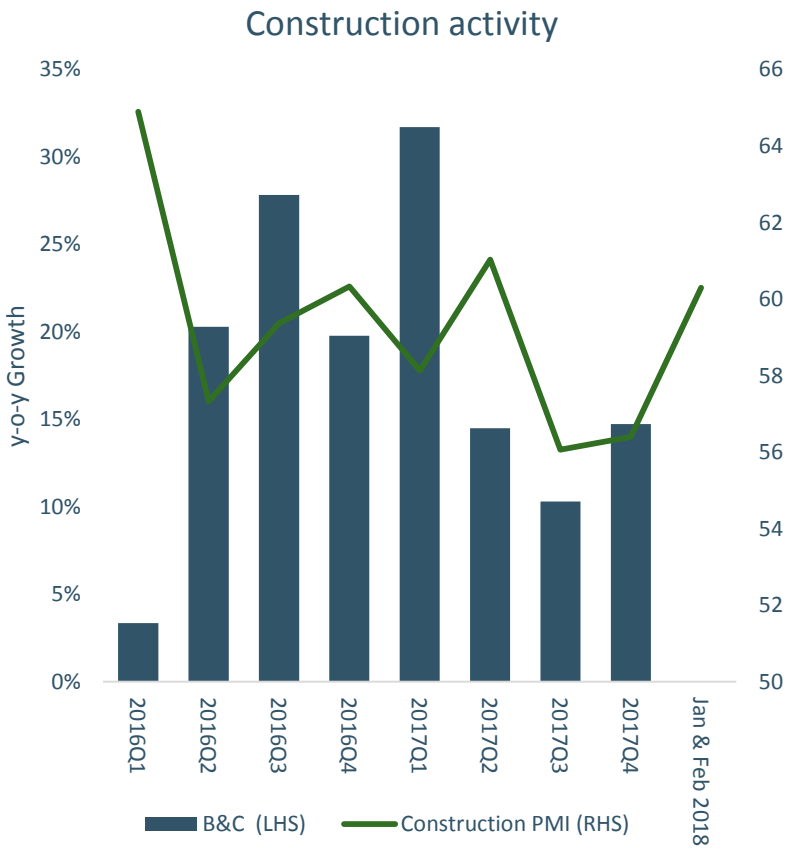
B&C the only component of investment recording growth last year…



Source: CSO, DoF calculations

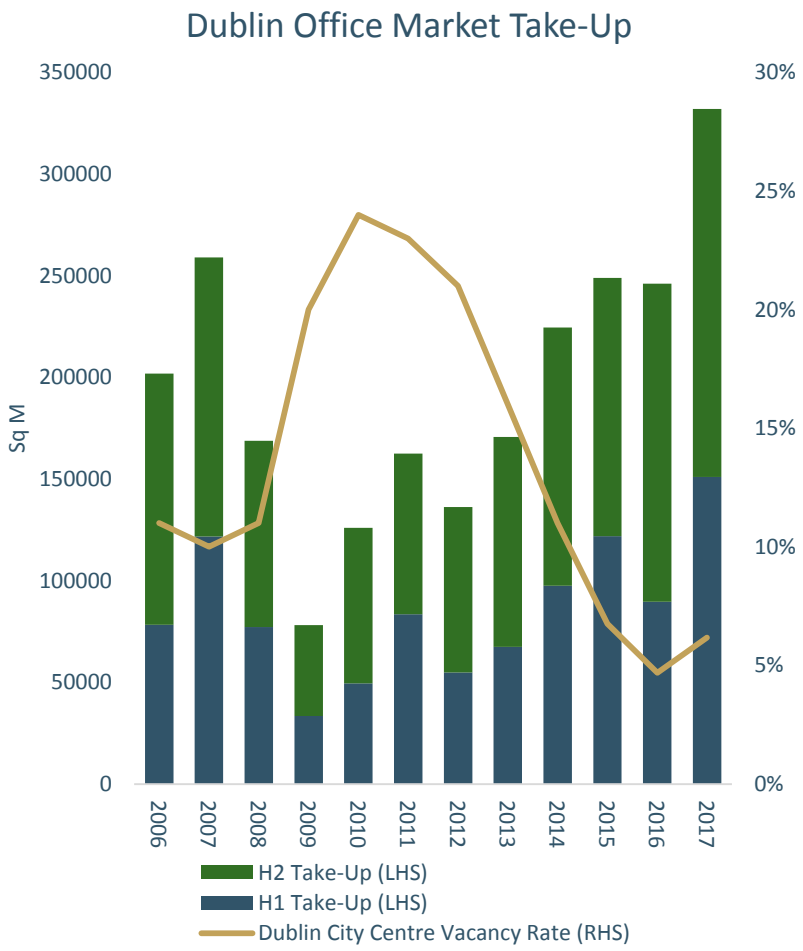
Residential investment accelerating…

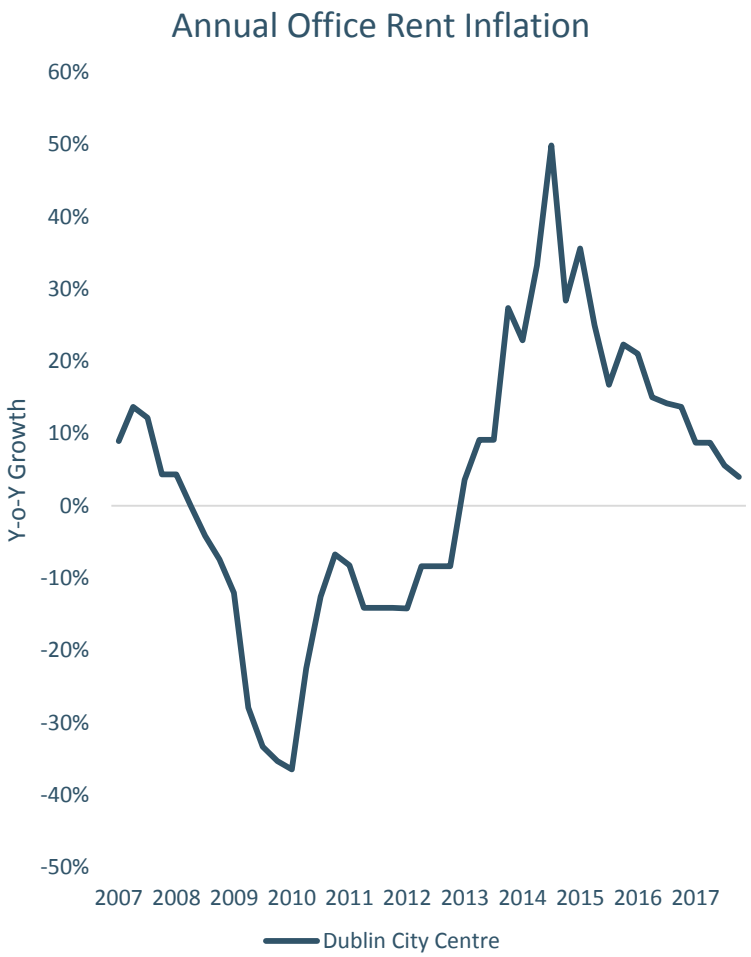




Source: CSO, Ulster Bank

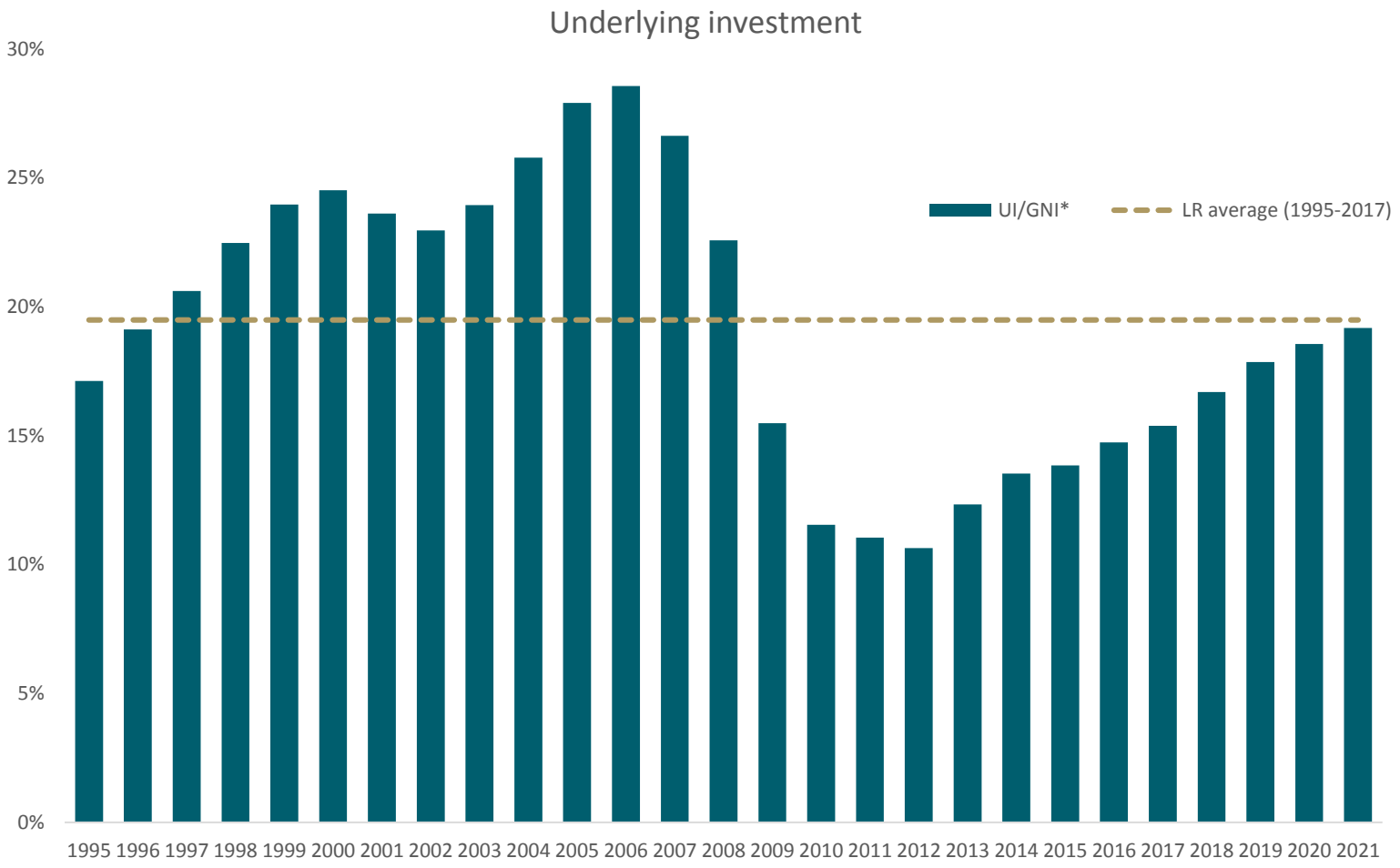
Strong demand in CRE market …



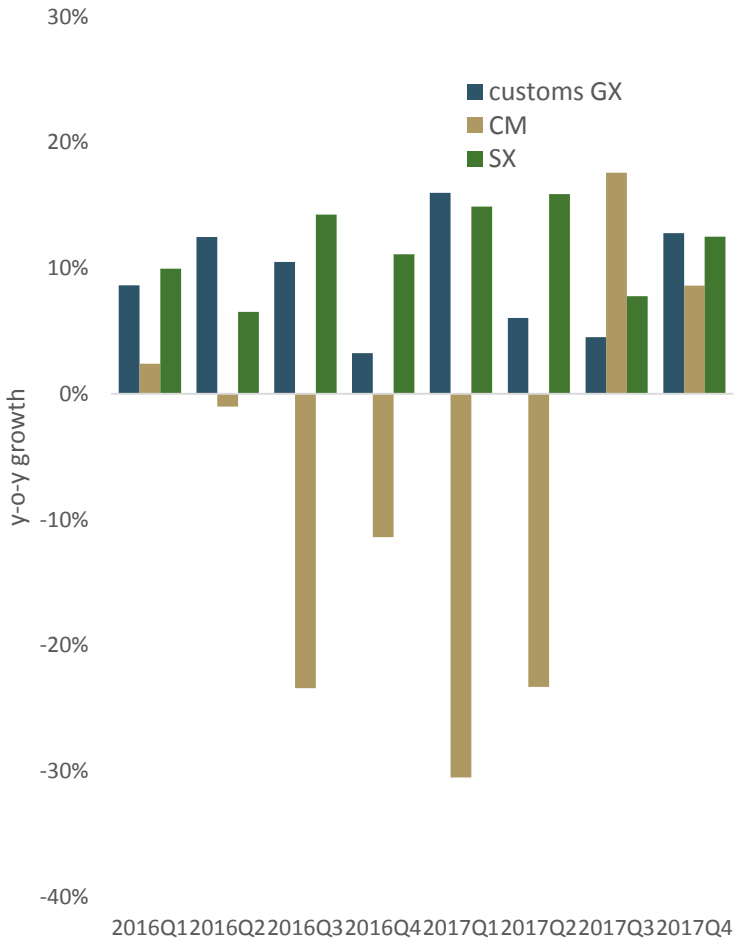


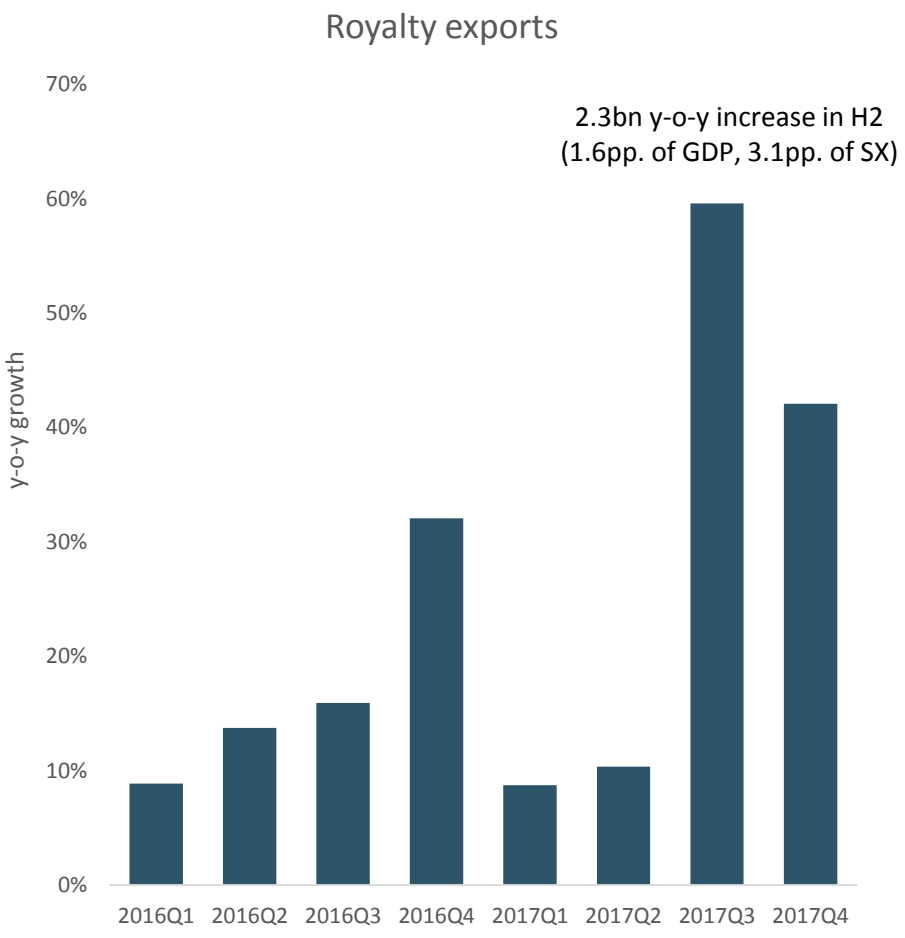
Source: CBRE

Underlying investment ratio converging towards LR average over the medium-term…



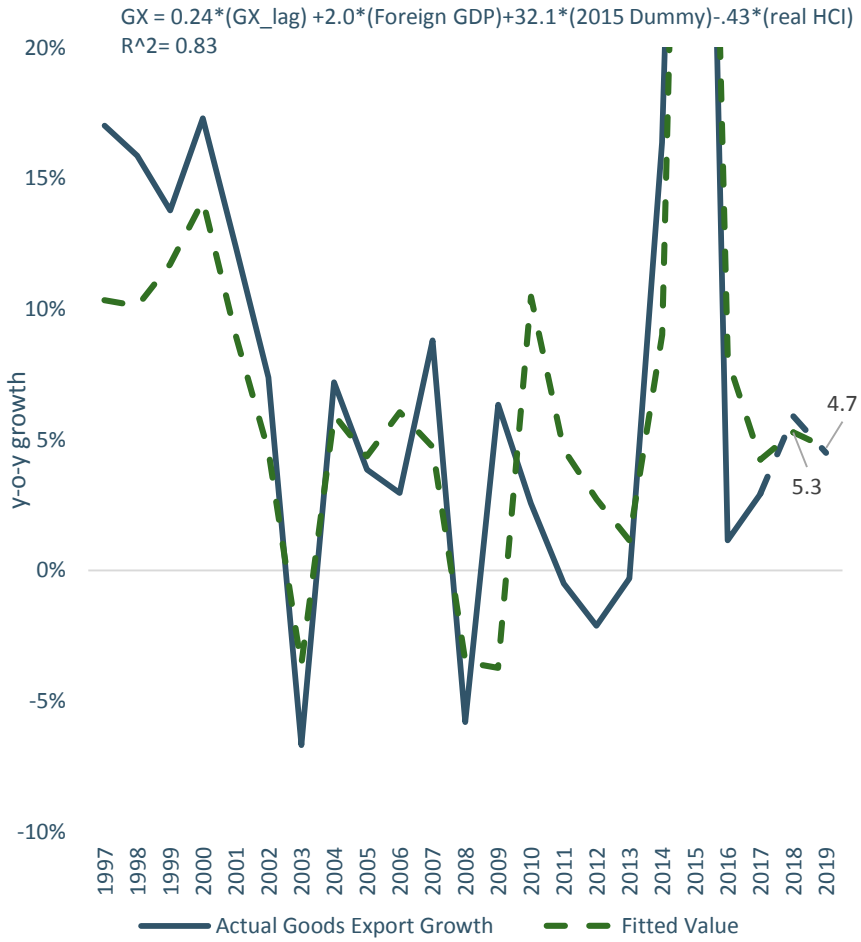
Headline exports inflated by statistical factors in H2 …

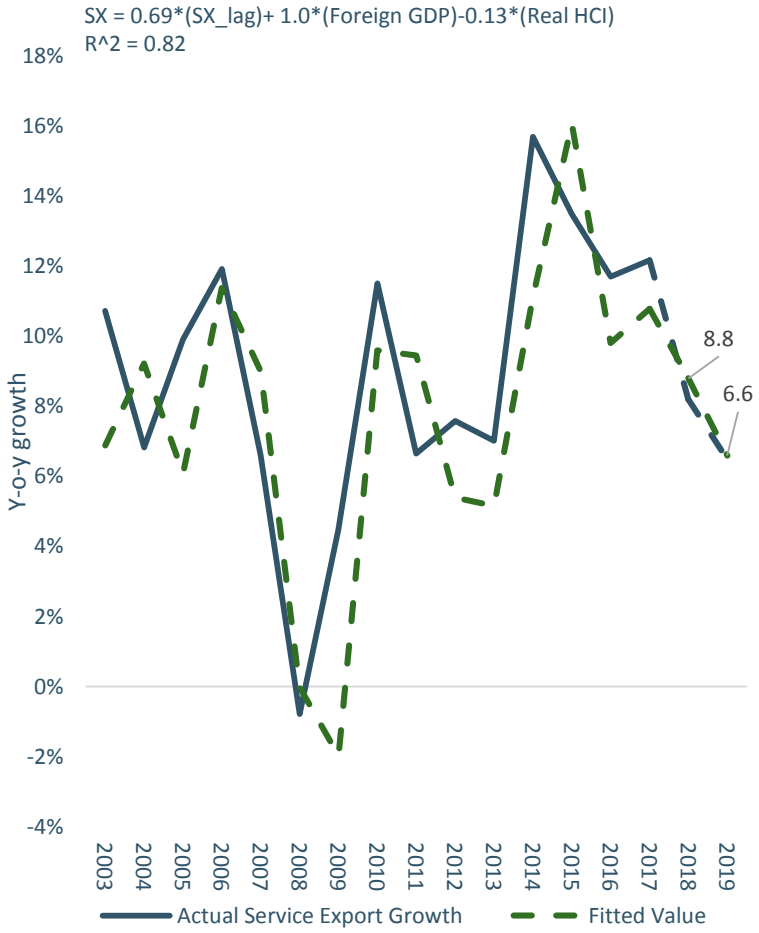




Source: CSO, DoF calculations

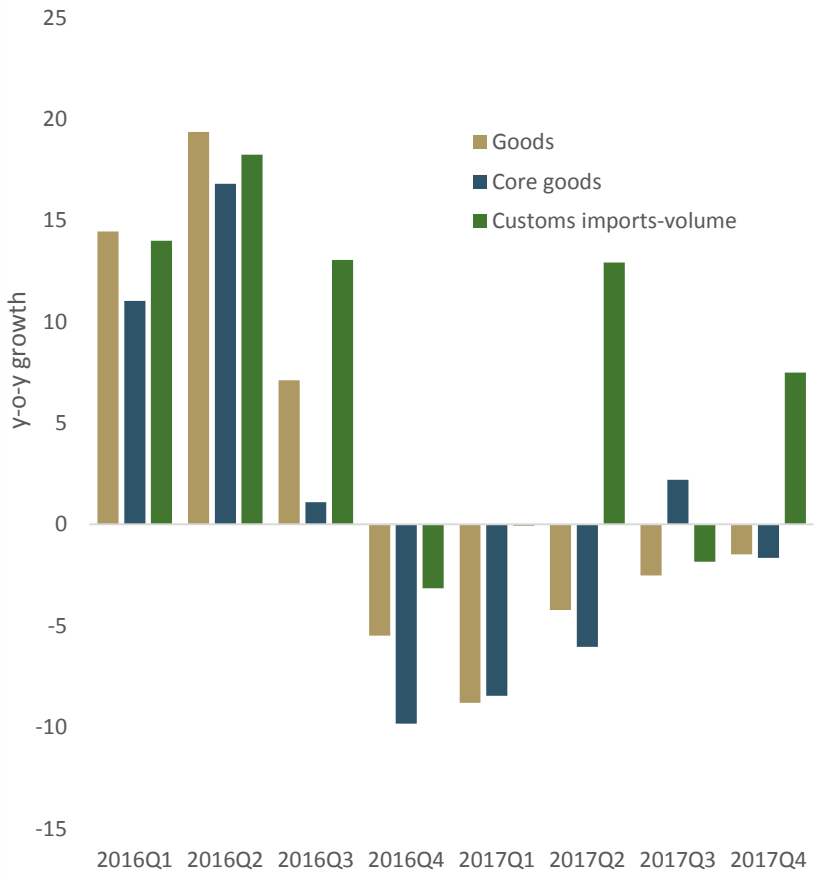
Export models…

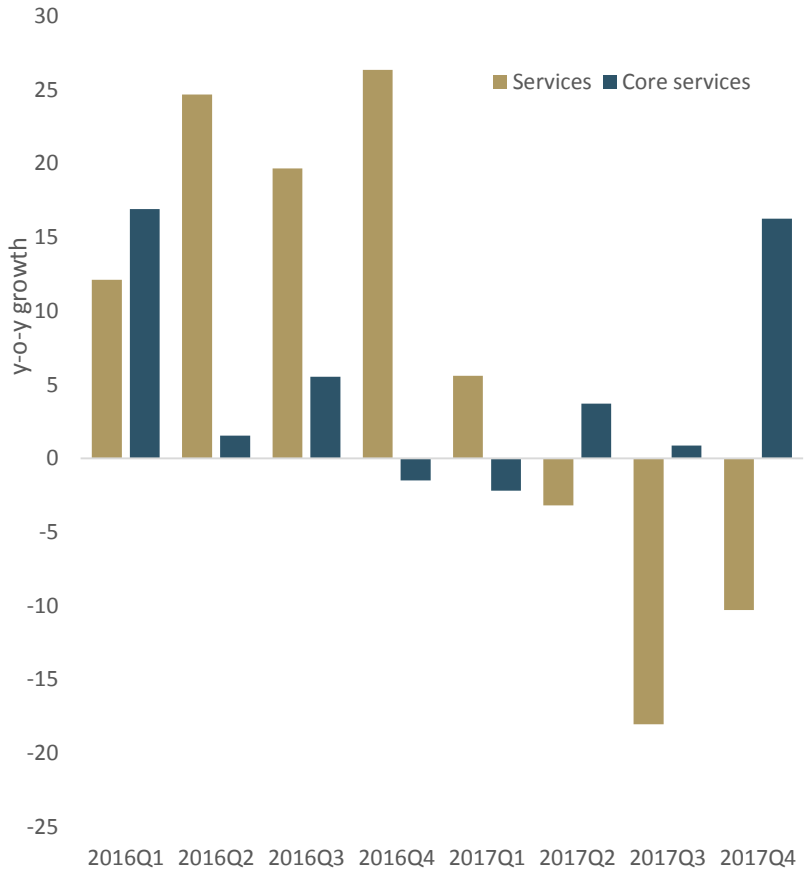




Source: CSO, DoF calculations

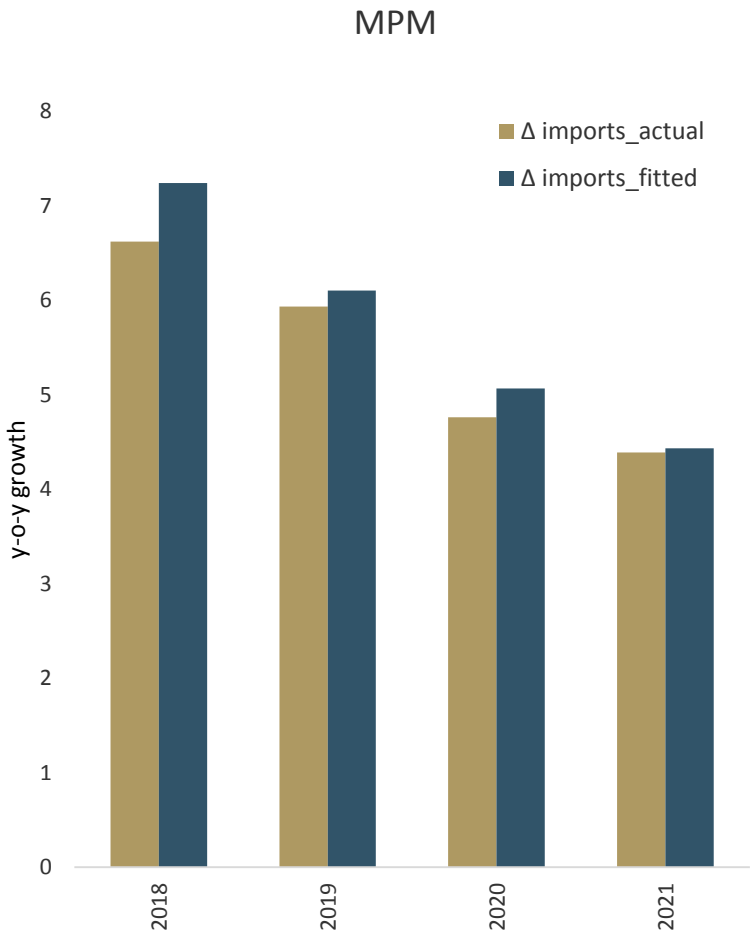
Core imports accelerating in H2…

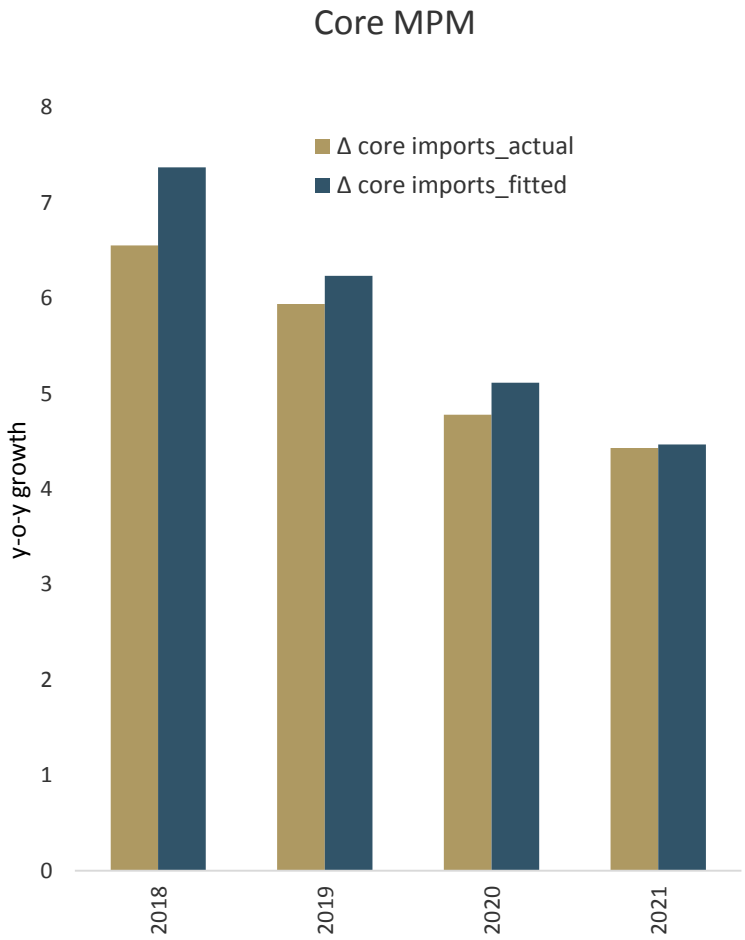




Source: CSO, DoF calculations

Import models…

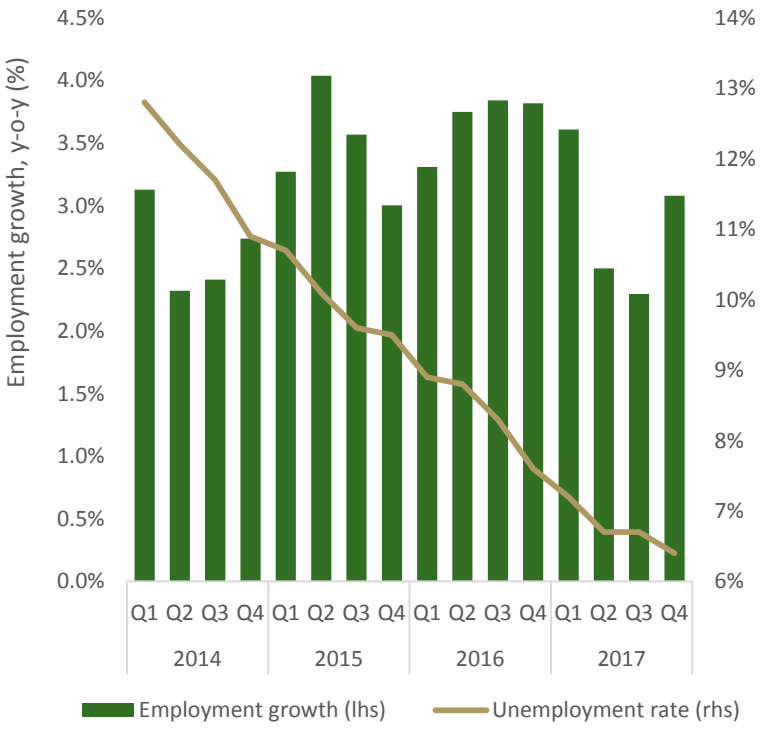




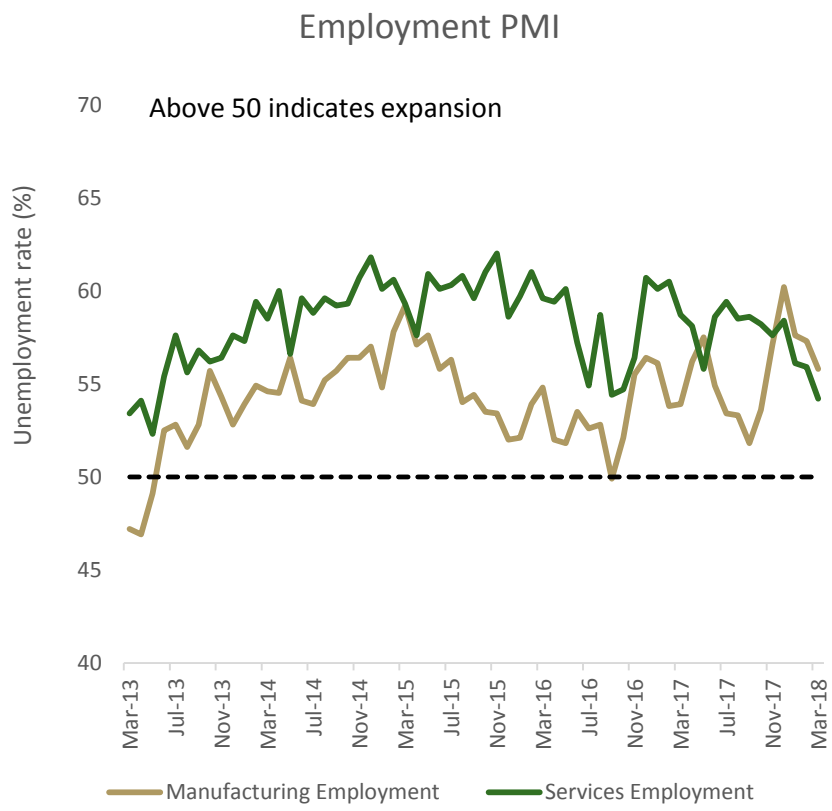
Source: CSO, DoF calculations

Labour Market

Continued momentum in labour market…

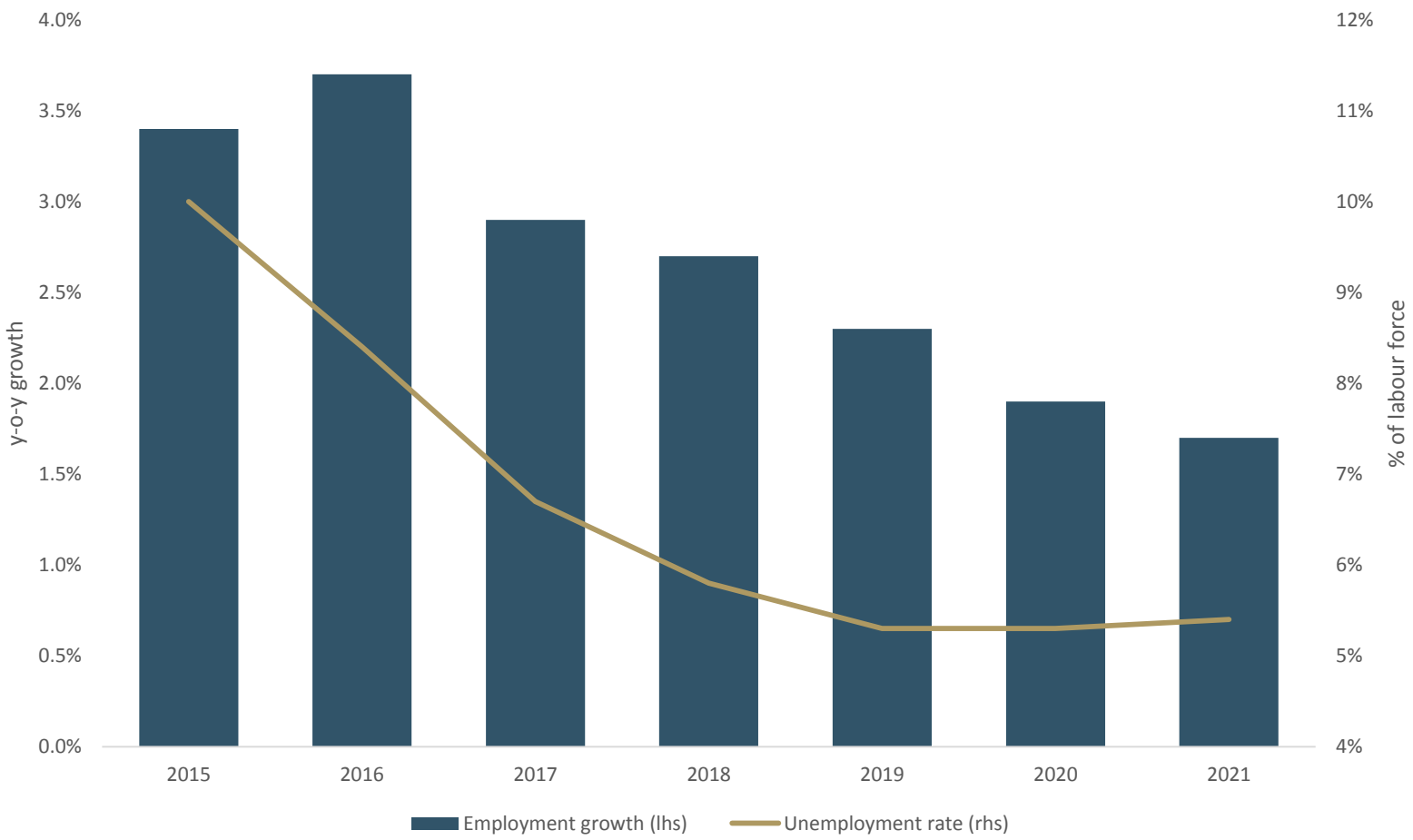


Source: CSO LFS



Source: Investec

Labour market forecasts…

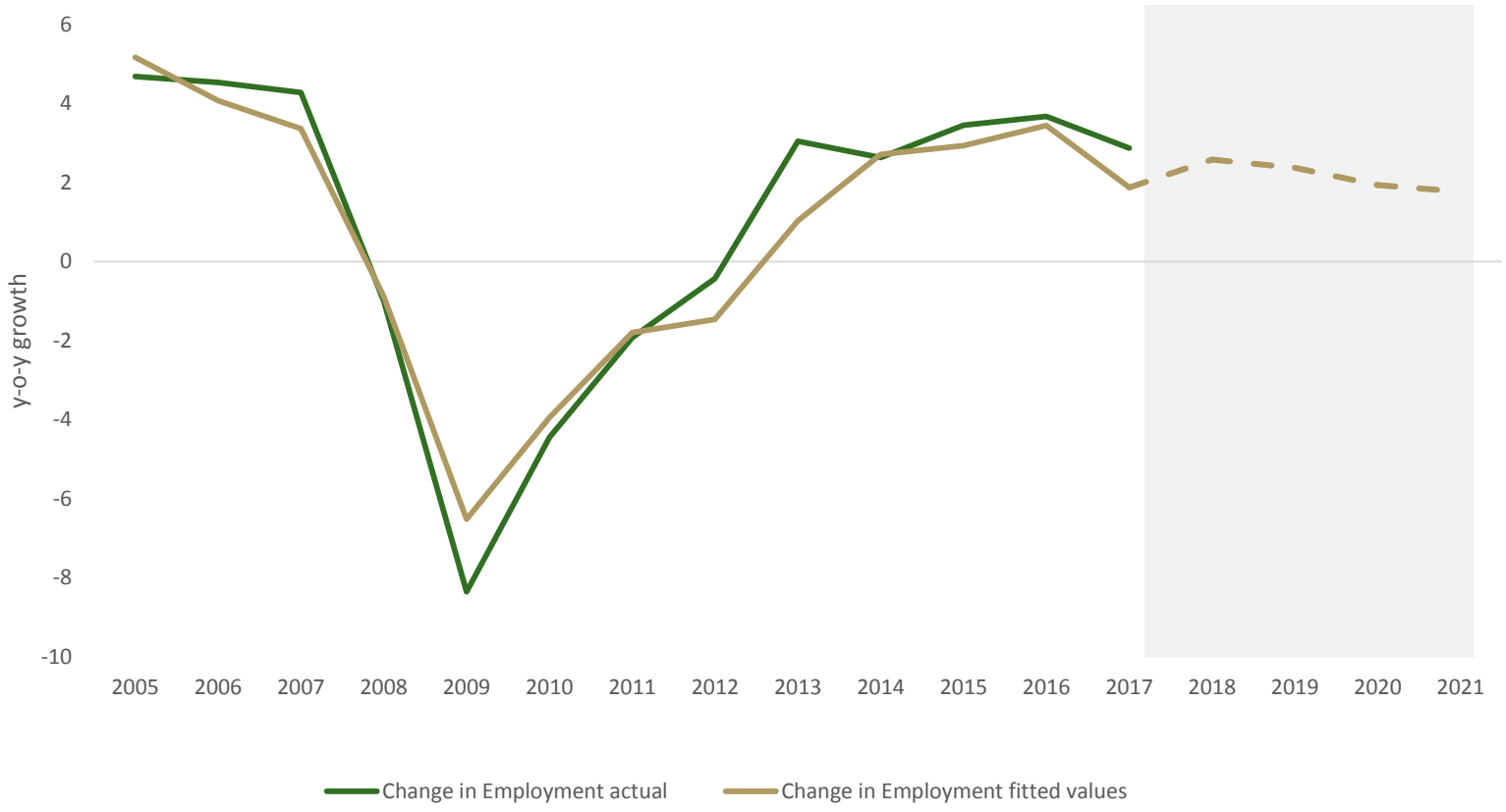


Source: CSO LFS, Department Forecasts

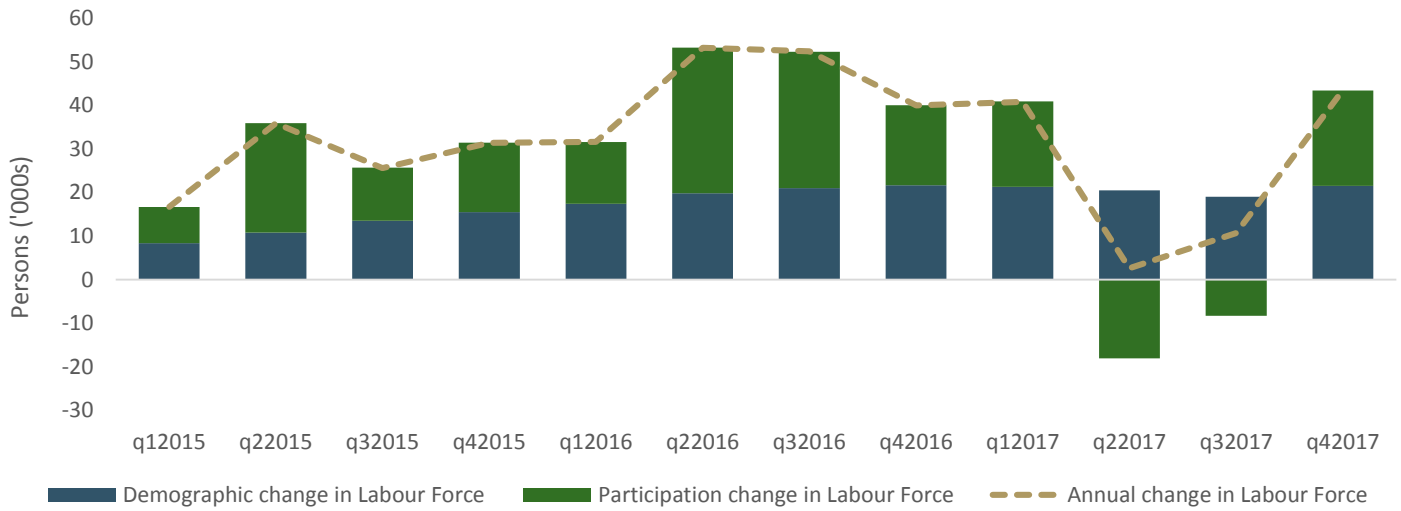
Labour market outlook consistent fundamentals…

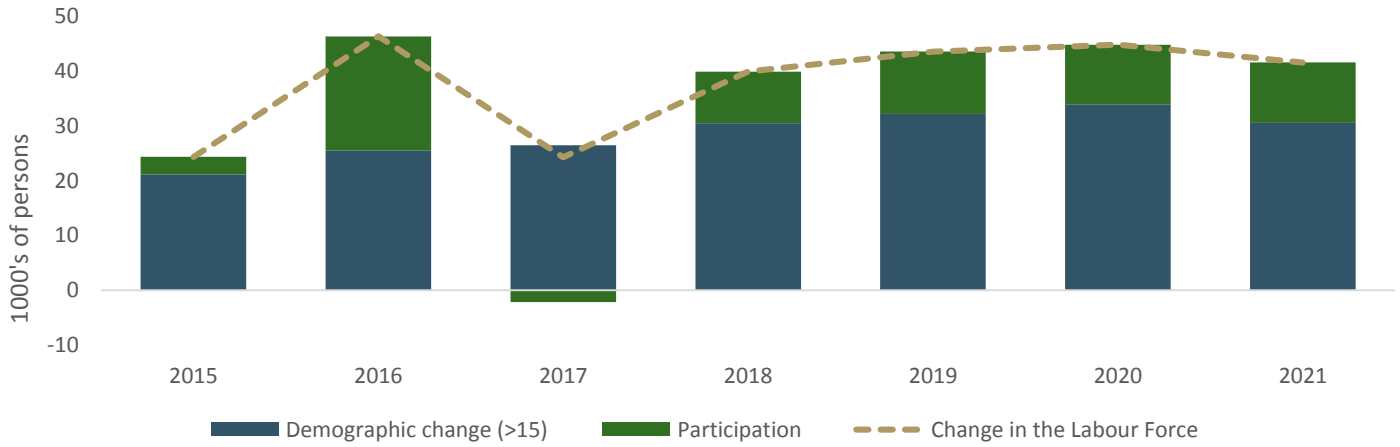
Employment aligned with underlying domestic demand (UDD)

$$\Delta Employment_t = -0.111 + 0.576(\Delta\, UDD) + 0.136(\Delta Employment_{t-4})$$



Labour force growth…

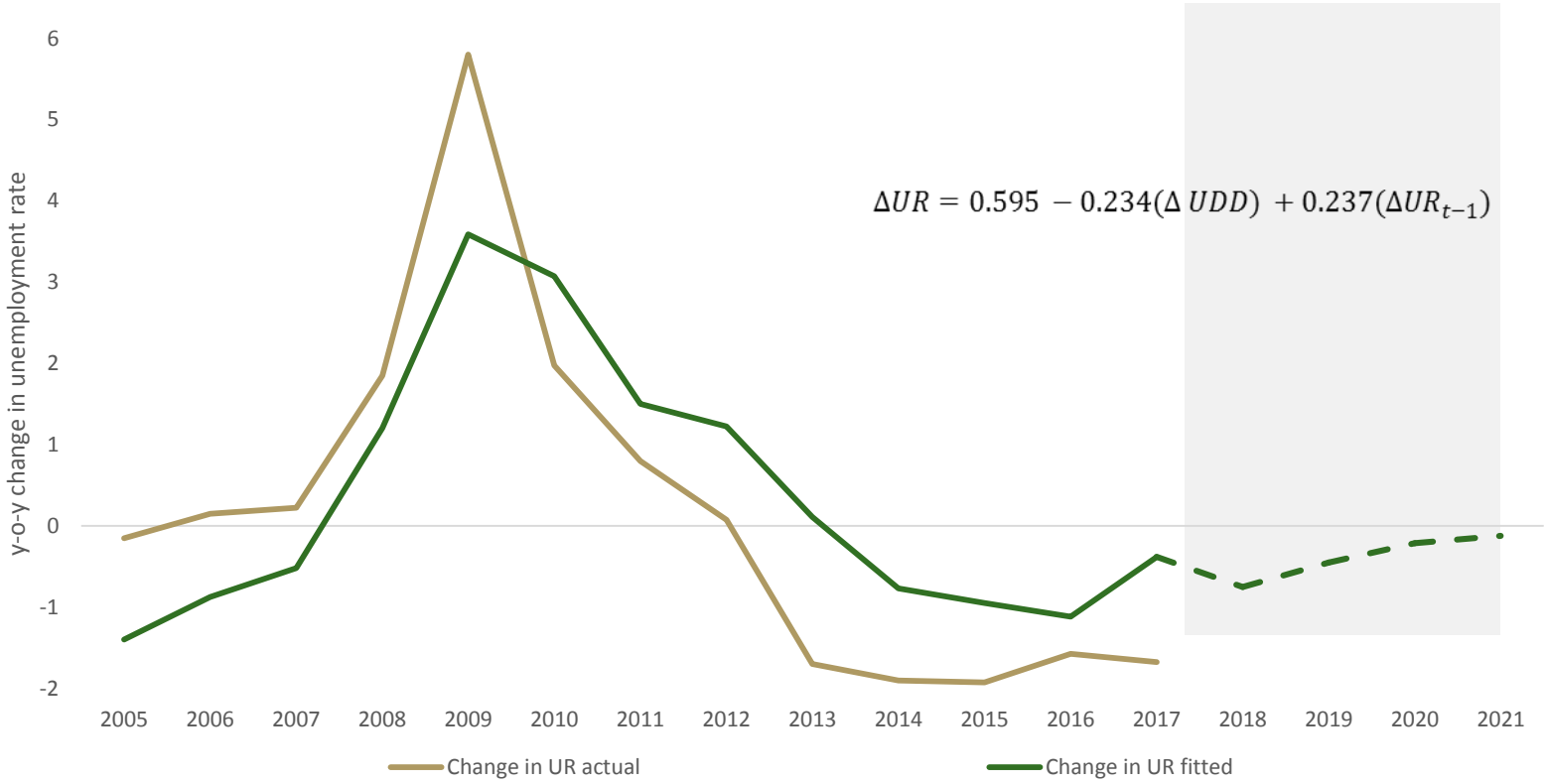




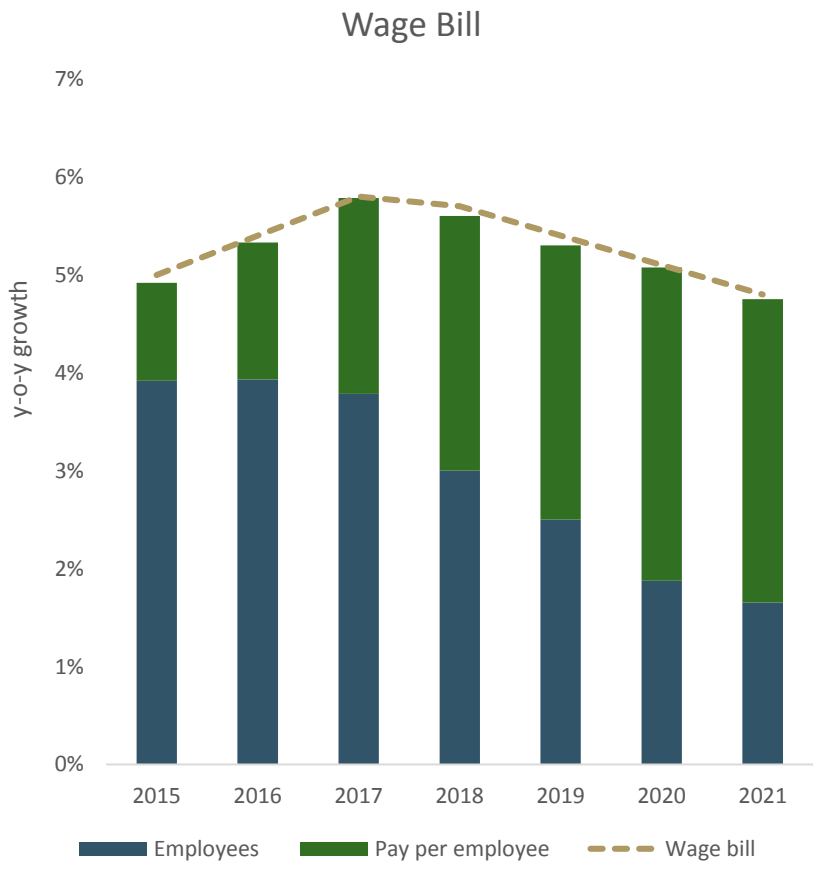
Source: CSO LFS, Department Forecasts

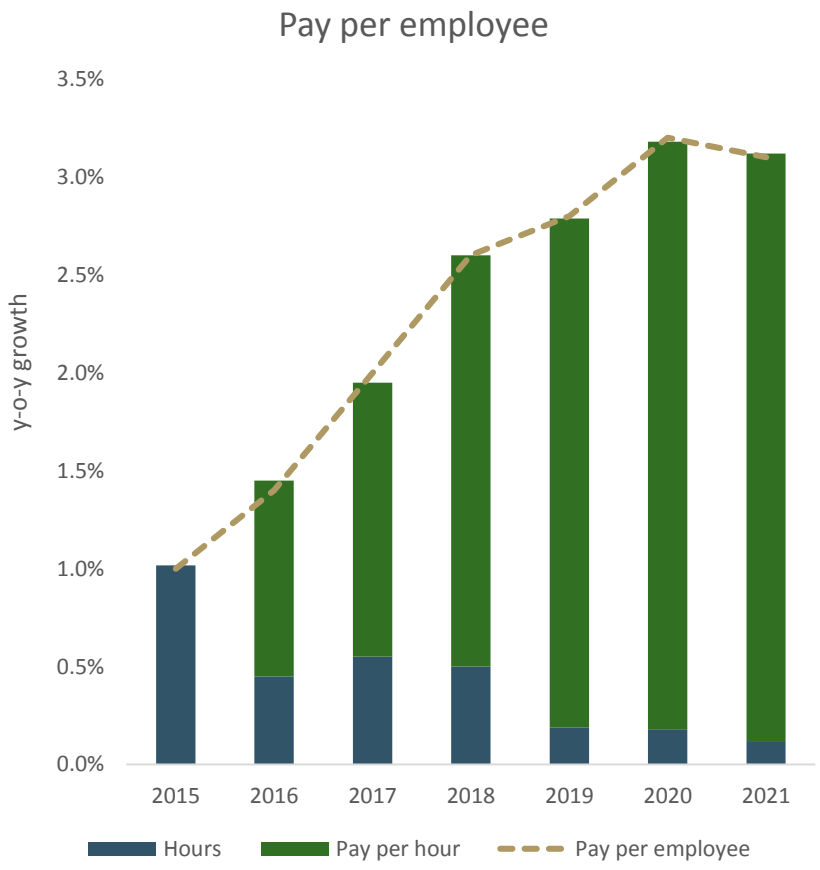
Labour market outlook consistent fundamentals…

Unemployment aligned with underlying domestic demand (UDD)



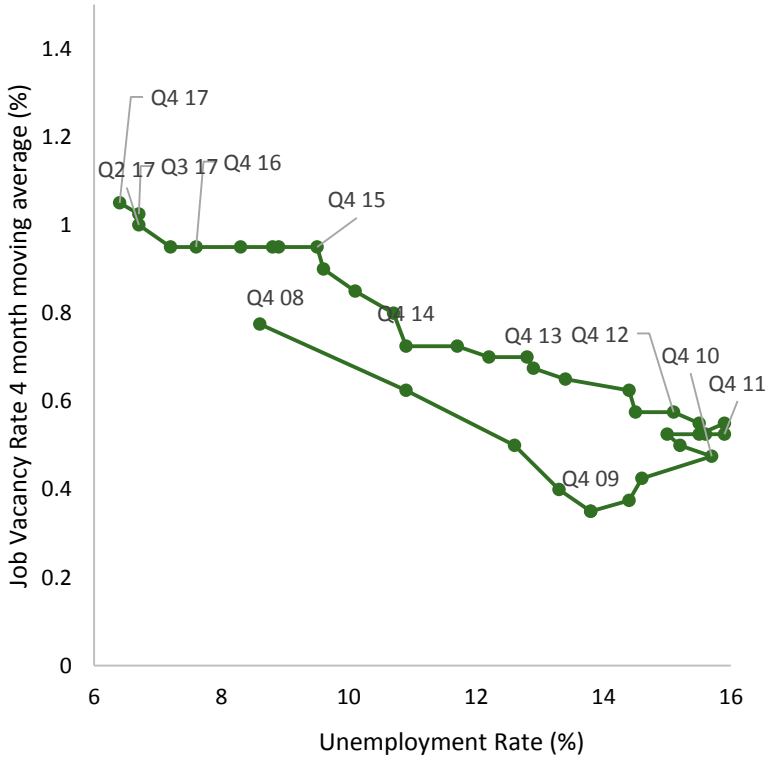
SPU 2018 near-term wage outlook…



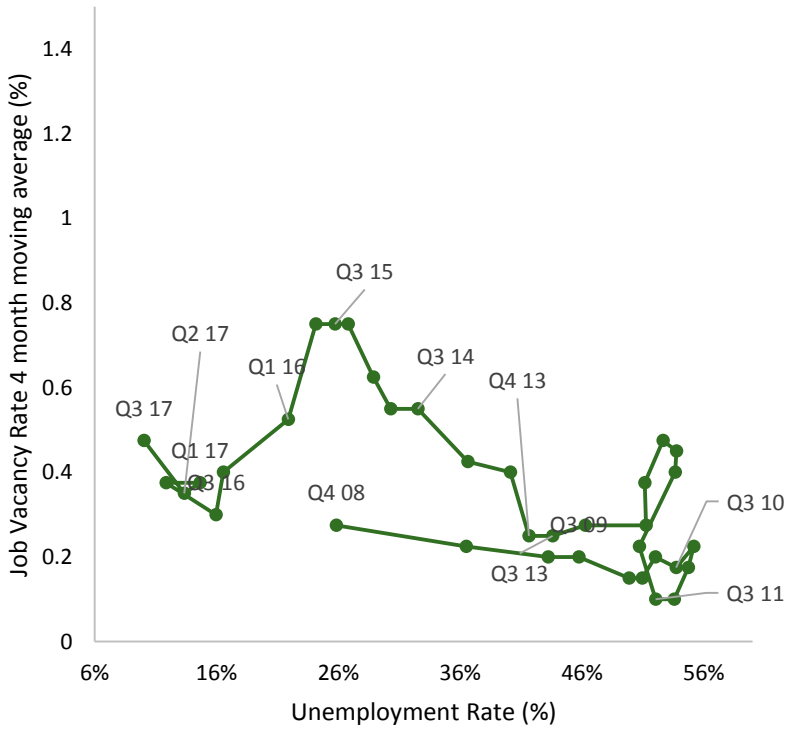


Retracting Beveridge Curve - improvement in labour matching…

Whole Economy Beveridge Curve *

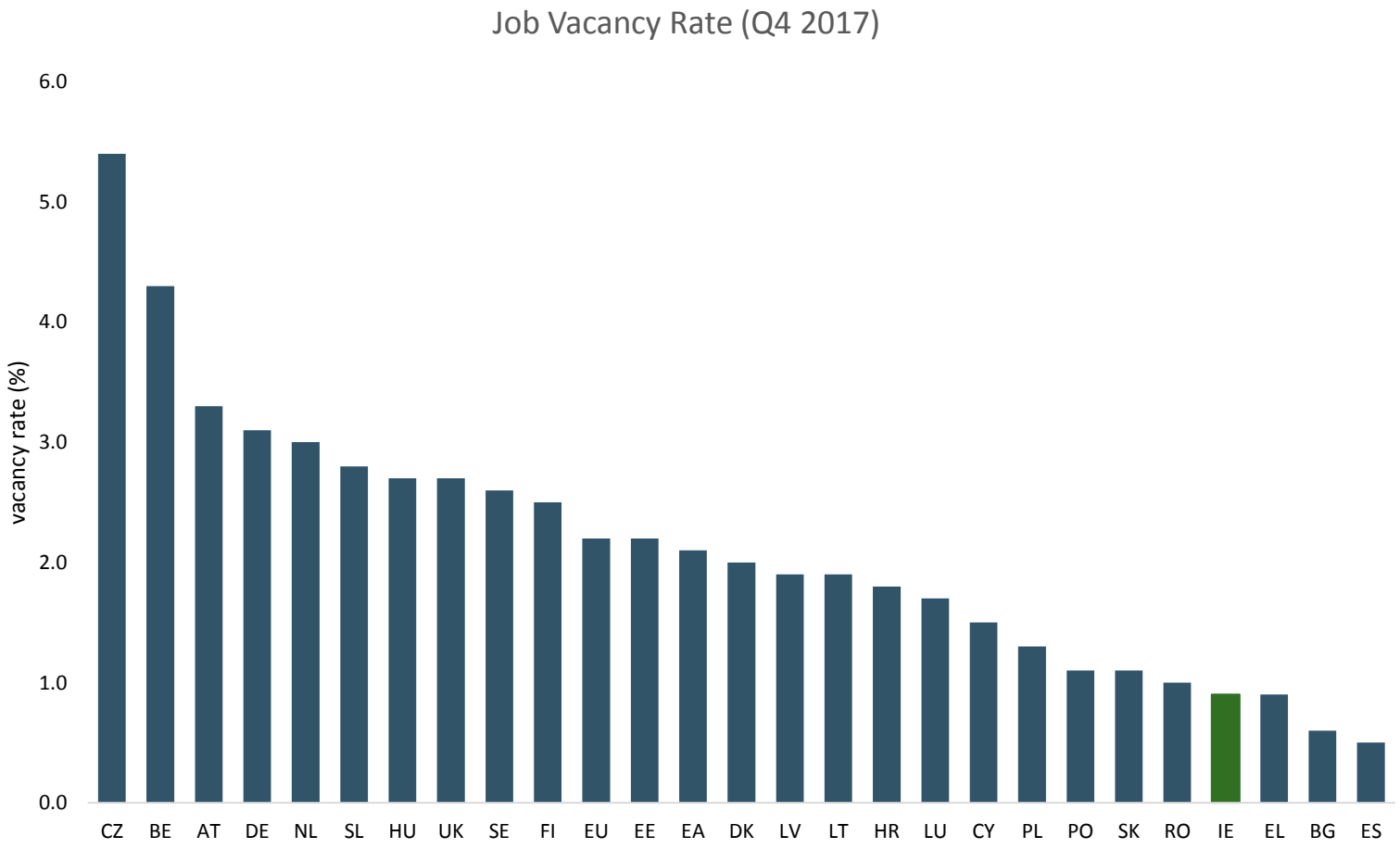


Construction Beveridge Curve **



Source: Department estimates based on CSO LFS and EHECS data. *Beveridge Curve inclusive of Q4 2017 data.
** EHECS employment levels omitted from Q4 EHECS release. Note: Sectoral unemployment rates are proxied using data by last occupied sector.

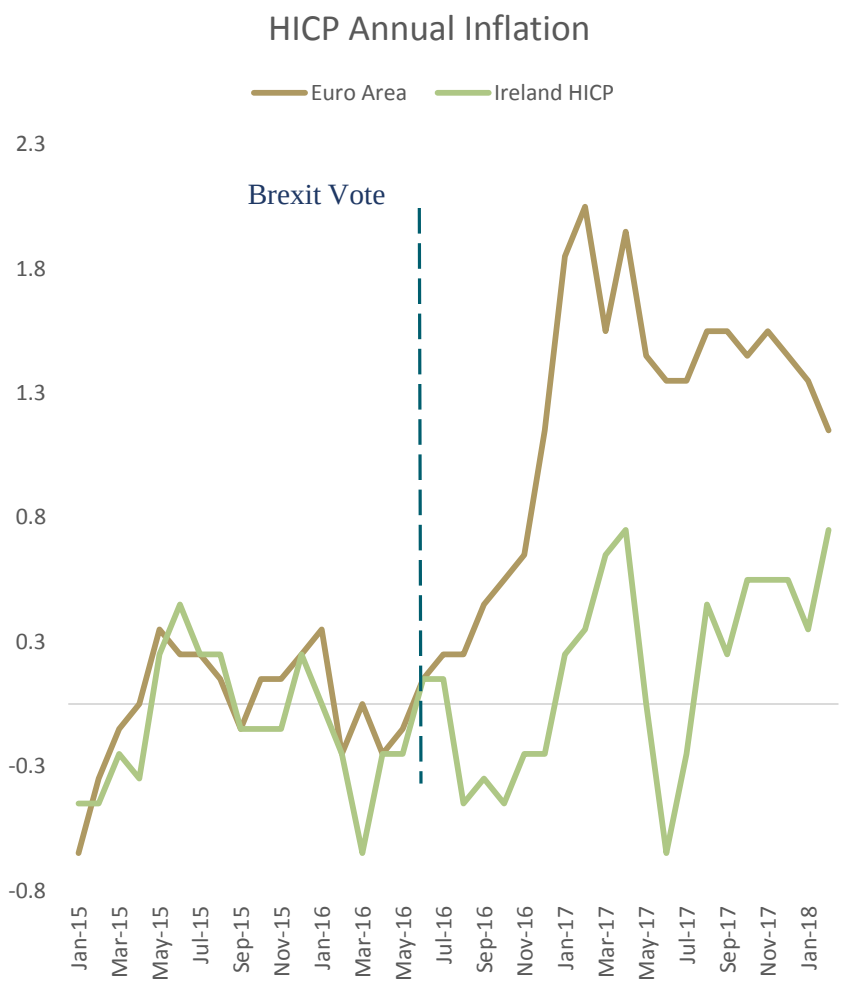
Vacancy Rate well below EU average…

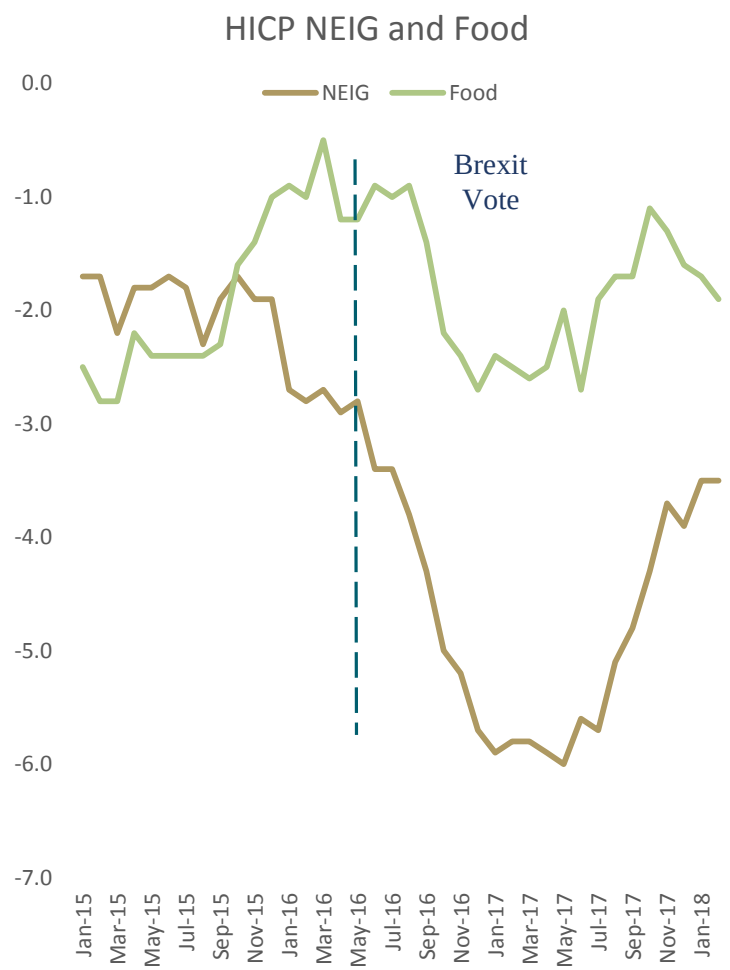


Source: Eurostat.
Based on Business economy (NACE sectors B-N).

Price Developments

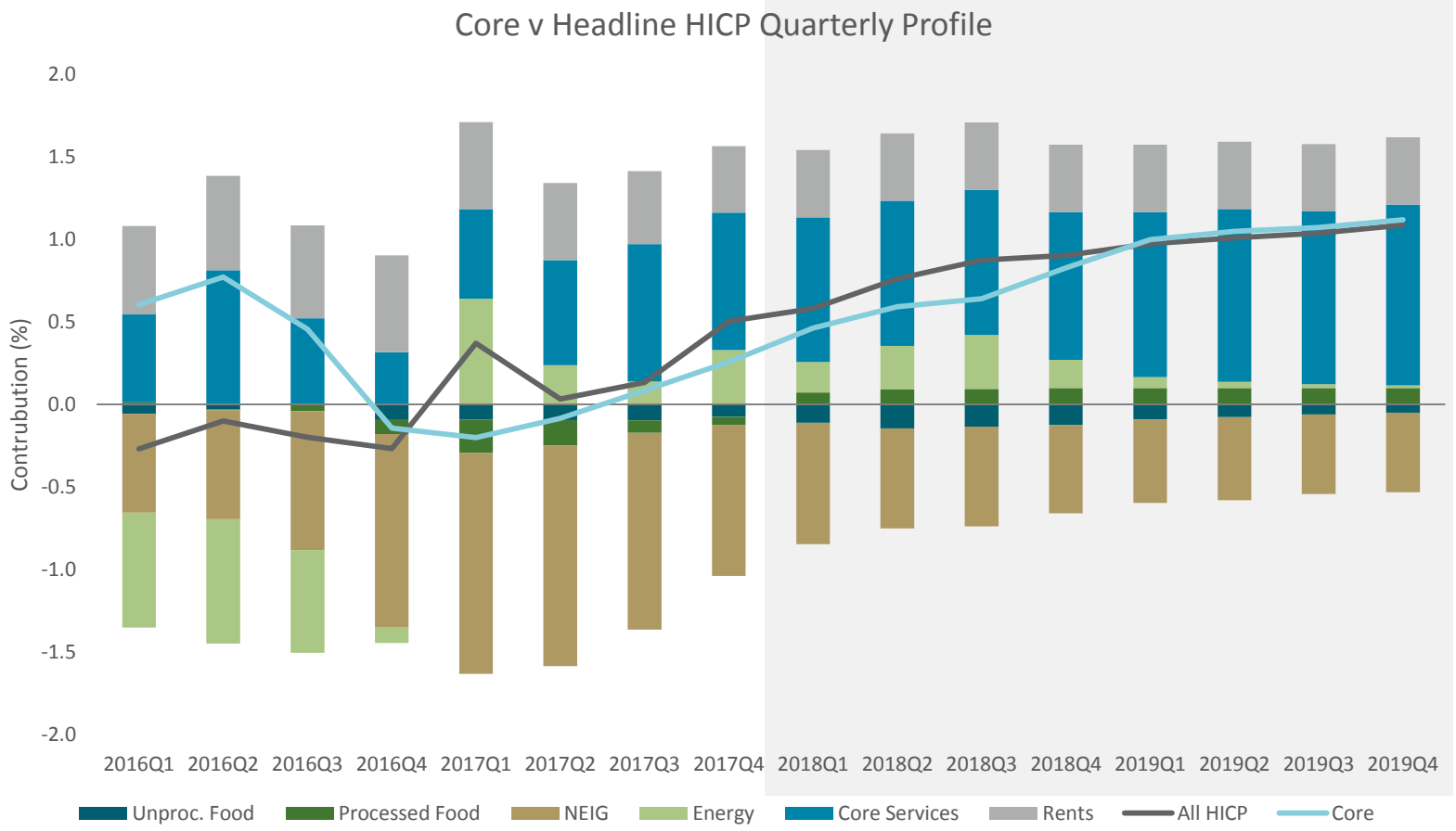
Divergence with euro area closing as Brexit impact starts to wane…





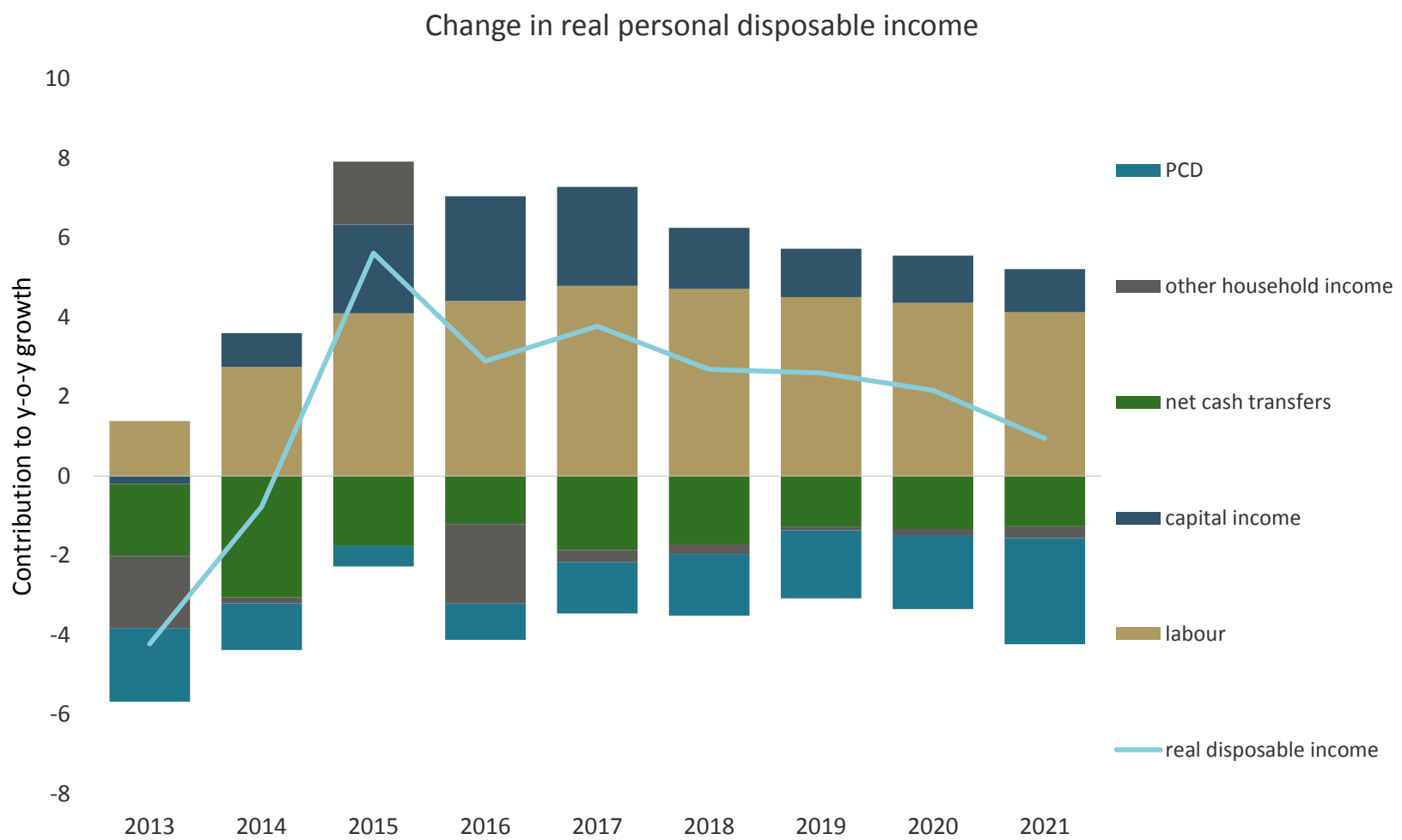
Drag from NEIG expected to wane while core services pick-up…

Average 2017 = 0.3% *Average 2018 = 0.8%* *Average 2019= 1.0%*



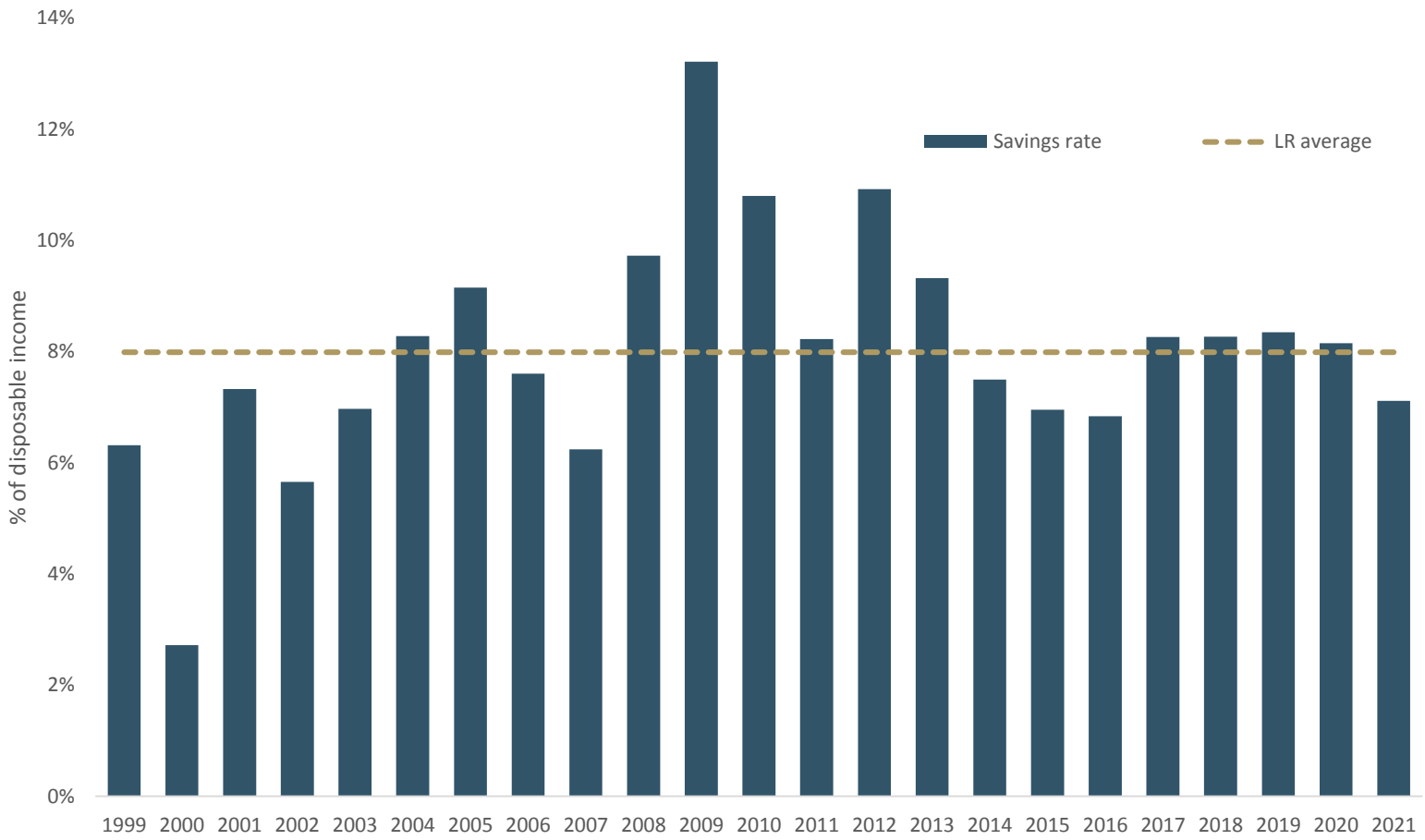
Household income

Recovery in the labour market continuing to support household income…



Source: CSO, DoF

Household saving rate assumed to remain unchanged over the short-run…



Source: CSO, DoF

Macroeconomic outlook

SPU 2018- Macroeconomic Outlook…

Year-on-year % change	2017	2018	2019	2020	2021
GDP	7.8	5.6	4.0	3.4	2.8
GNP	6.6	5.6	3.7	3.1	2.6
Nominal GDP	7.5	5.6	5.4	4.7	4.3
GNI* (€bn)	201.2	213.0	223.6	233.6	243.4
Personal Consumption	1.9	2.6	2.4	2.3	1.9
Govt Consumption	1.8	1.9	1.9	1.8	1.7
Investment	-22.3	8.5	7.4	5.2	4.7
Exports	6.9	6.9	5.4	4.5	3.9
Imports	-6.2	6.6	5.9	4.8	4.4
HICP	0.3	0.8	1.0	1.4	2.6
GDP Deflator	-0.3	0.0	1.3	1.3	1.5
Employment	2.9	2.7	2.3	1.9	1.7
Unemployment (rate)	6.7	5.8	5.3	5.3	5.4
Contributions to growth (p.p)*					
Domestic Demand	-6.2	3.0	2.8	2.3	2.0
Change in Stocks	0.1	0.0	0.0	0.0	0.0
Net Exports	14.5	2.5	1.2	1.1	0.8
Underlying Domestic Demand (excl stocks)	1.4	2.1	2.0	1.6	1.5
Underlying Net Exports	6.8	3.4	2.0	1.8	1.4

Medium-term risks –tilted to the downside…

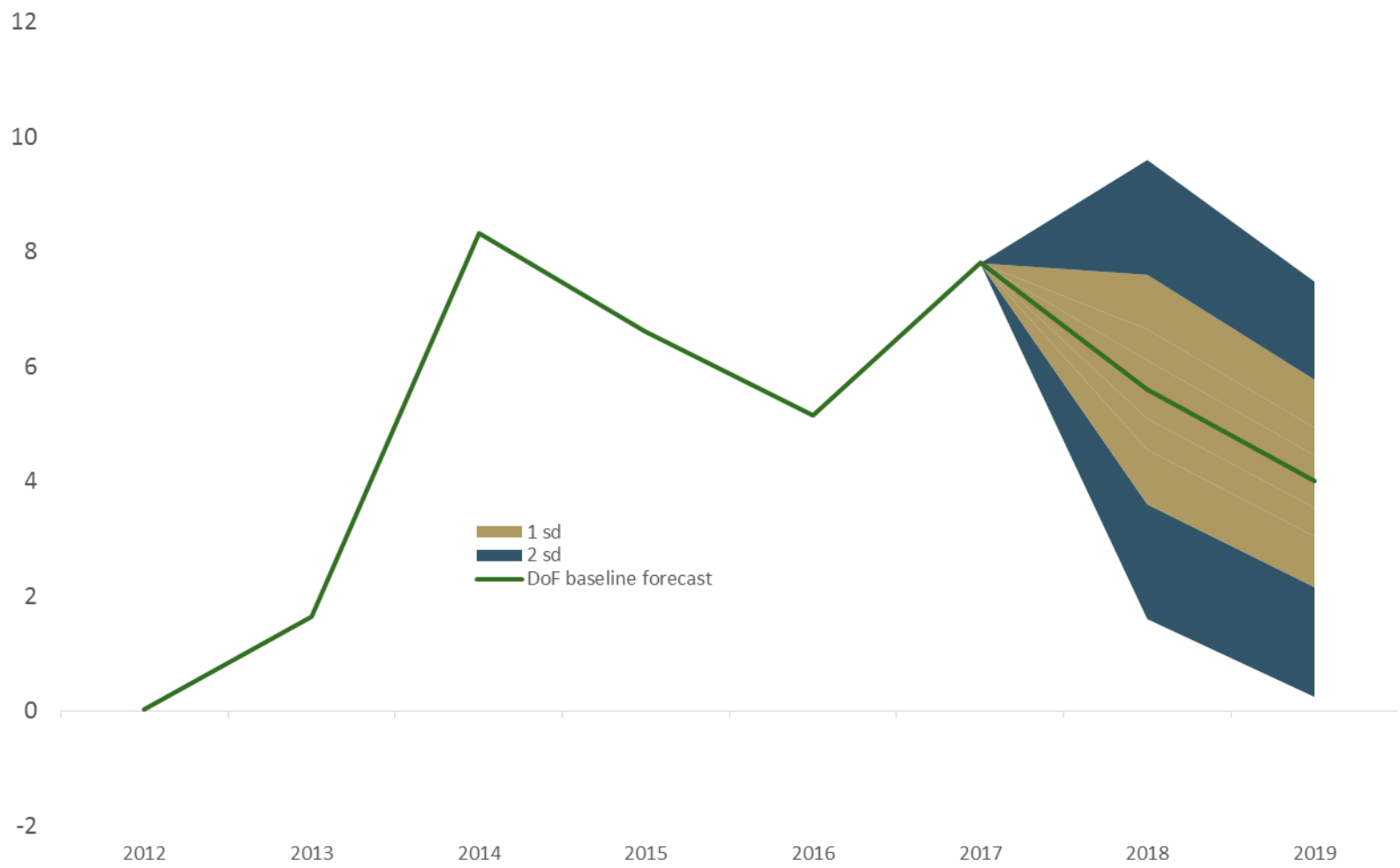
External

- Hard-Brexit
- Trade protectionism/trade-war
- Global financial market conditions
- Geopolitical factors

Domestic

- Concentrated production base
- Loss of competitiveness
- Housing supply pressures
- Overheating pressures
- Statistical distortions to national accounting aggregates

Fan Chart of Real GDP…



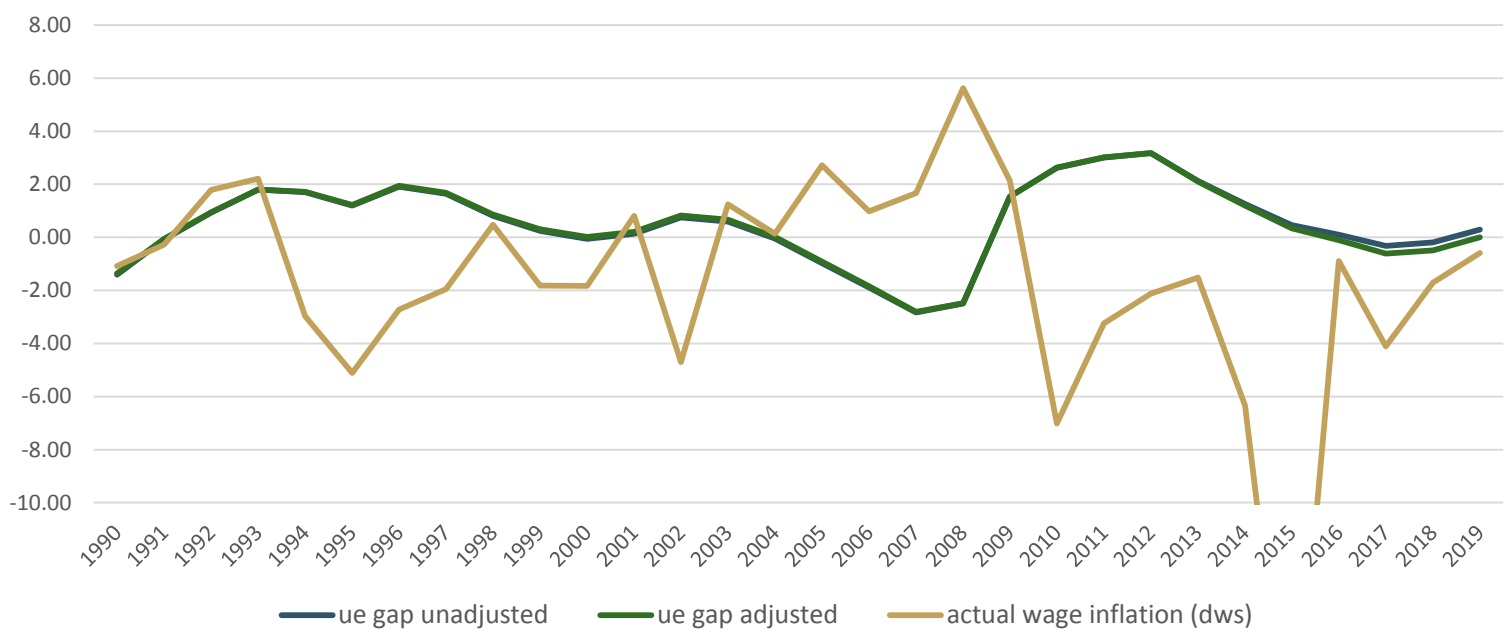
Note: The growth for 2015 is based on modified total domestic demand

Supply-side

Application of harmonised methodology

- GDP 2017 estimated to have increased by 7.8%, with the acceleration in growth in H2 due in the main to statistical factors
  - : surge in contract manufacturing activity and royalty exports
  - : limited, if any, impact on Irish living standards
- Use of dummies within Kalman filter to offset drop in real unit labour costs in 2017 (adjusted PC)
- Recalibration of TFP model (to BGAP45) incorporating a dummy from 2017 onwards to neutralise estimate impacts on trend TFP projections.
- More plausible estimates of output gap

Adjustment to NAWRU model improves fit of wage inflation..



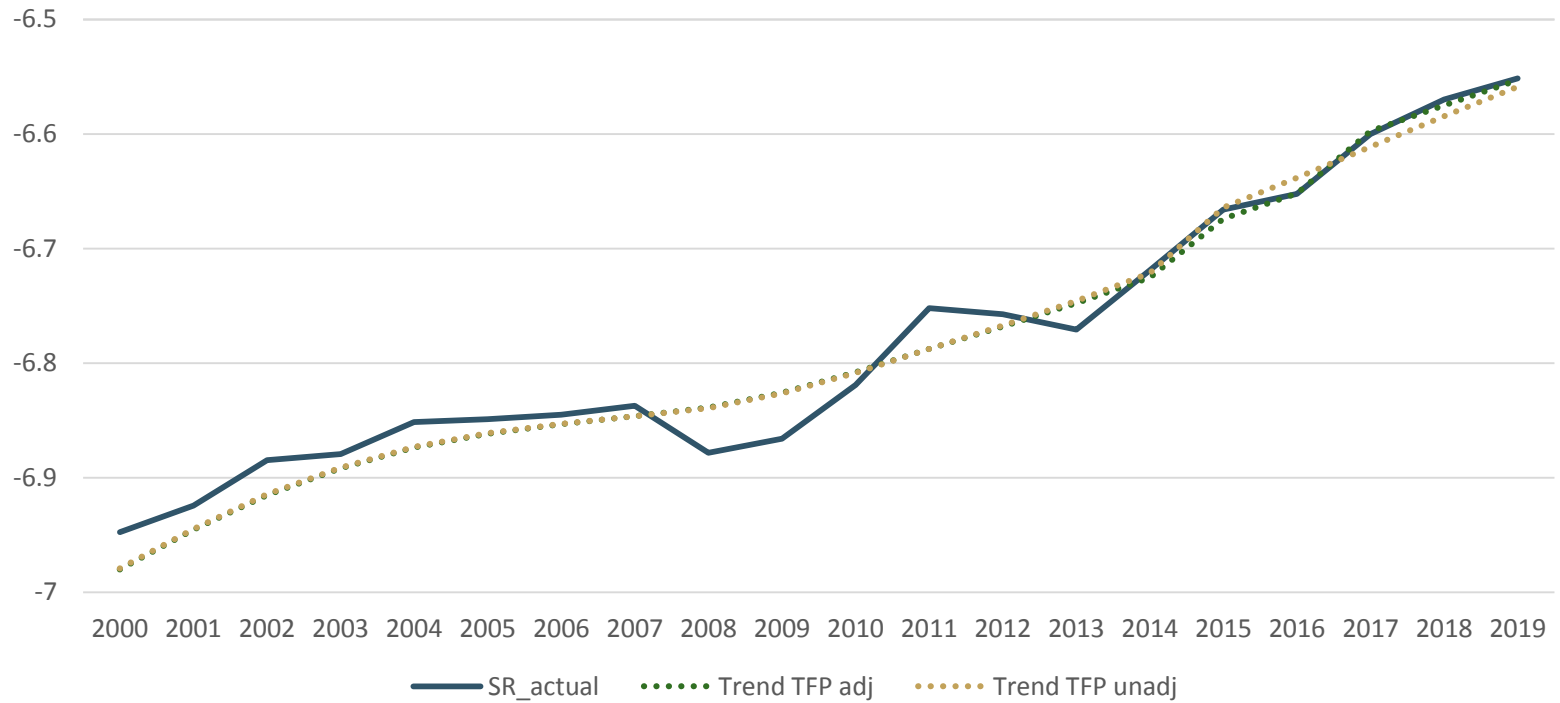
Note: *Adjusted* PC refers to specification with dummy for 2017-18. *Unadjusted* PC retains spike in rvgde due to 2017 estimate.

NK Philips Curve: $\Delta rulc_t = \Delta rulc_{t-1} - [\, \beta_1(U_t - U_t^*) + \beta_2(U_{t-1} + U_{t-1}^*) + D_1 + D_2 + D_3 + D_4 \,]$

D_1 = 1 for 2015, D_2 = 1 for 2016 D_3 = 1 for 2017, D_4 = 1 for 2018

- Adjusted NAWRU with dummies (_adj) improves fit of Philips Curve

Adjustment to TFP model introduces TFP break…



$$tfp_t = p_t^* + c_t$$
$$u_t = \mu_u + \beta c_1 + \varepsilon_{ut}$$
$p_t^* = p_t + \gamma d_1 + \gamma d_2$ where d_1= 0 if t< 2015, 1 otherwise, d_2= 0 if t< 2017, 1 otherwise

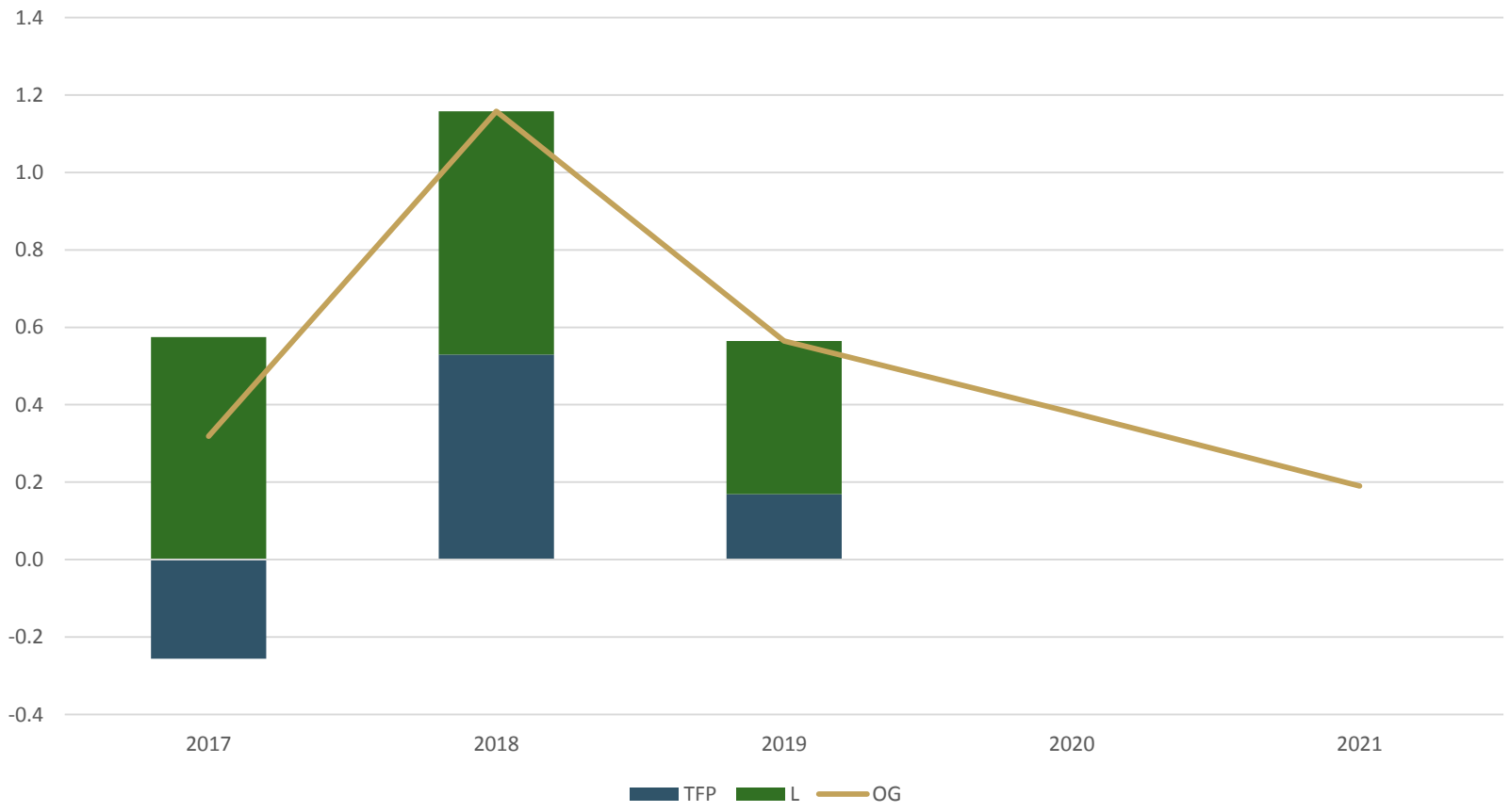
Preliminary SPU 2018 supply-side outlook…

Harmonised methodology

	2017	2018	2019	2020	2021
Potential output growth	8.0	4.7	4.7	3.7	3.2
Contributions to potential growth					
Labour	2.2	2.0	1.9	0.9	0.4
Capital	0.1	0.3	0.5	0.5	0.5
Total Factor Productivity*	5.6	2.3	2.2	2.2	2.5
Real GDP	270.5	285.6	297.1	308.1	317.8
Potential GDP	266.2	280	294.2	306.1	316.7
Output Gap	0.32	1.16	0.56	0.38	0.19

Note: NAWRU based on ML NKP modelling approach to 2019 with mechanical extension thereafter.
Non-centering adjustment factor of -0.43 applied. * Trend TFP estimated using Bayesian bivariate Kalman filter based on actual TFP including specification of dummy with revised CUBS inputs to 2019.

Contribution to the output gap



Model variant: 0% growth in intangible investment and planes

Differences to baseline model

	2017	2018	2019
Potential output growth	-0.18	0.08	0.17
Contributions to potential growth			
Labour	0	0	0
Capital	0	0.11	0.19
Total Factor Productivity*	-0.18	-0.03	-0.02
Real GDP	0	0	0
Potential GDP	-0.3	-0.1	0.4
Output Gap	0.12	0.04	-0.13

Note: NAWRU based on ML NKP modelling approach to 2019.
Non-centering adjustment factor of -0.43 applied. * Trend TFP estimated using Bayesian bivariate Kalman filter based on actual TFP including specification of dummy with revised CUBS inputs to 2019.

Issues in context of revised harmonised estimates…

- GDP 2017 estimate has had a de-stabilising impact on estimates of potential GDP growth and output gap estimates
- Department's underlying view of economy unaltered due to GDP estimate– potential growth has not jumped from 4.5% to 8% in 2017
- Adjustments to harmonised methodology have neutralised impact of GDP estimate in 2017 and attempt to eliminate related distortions in forecasts
- Emphasises importance of complementary toolkit to monitor cyclical position

Alternative models

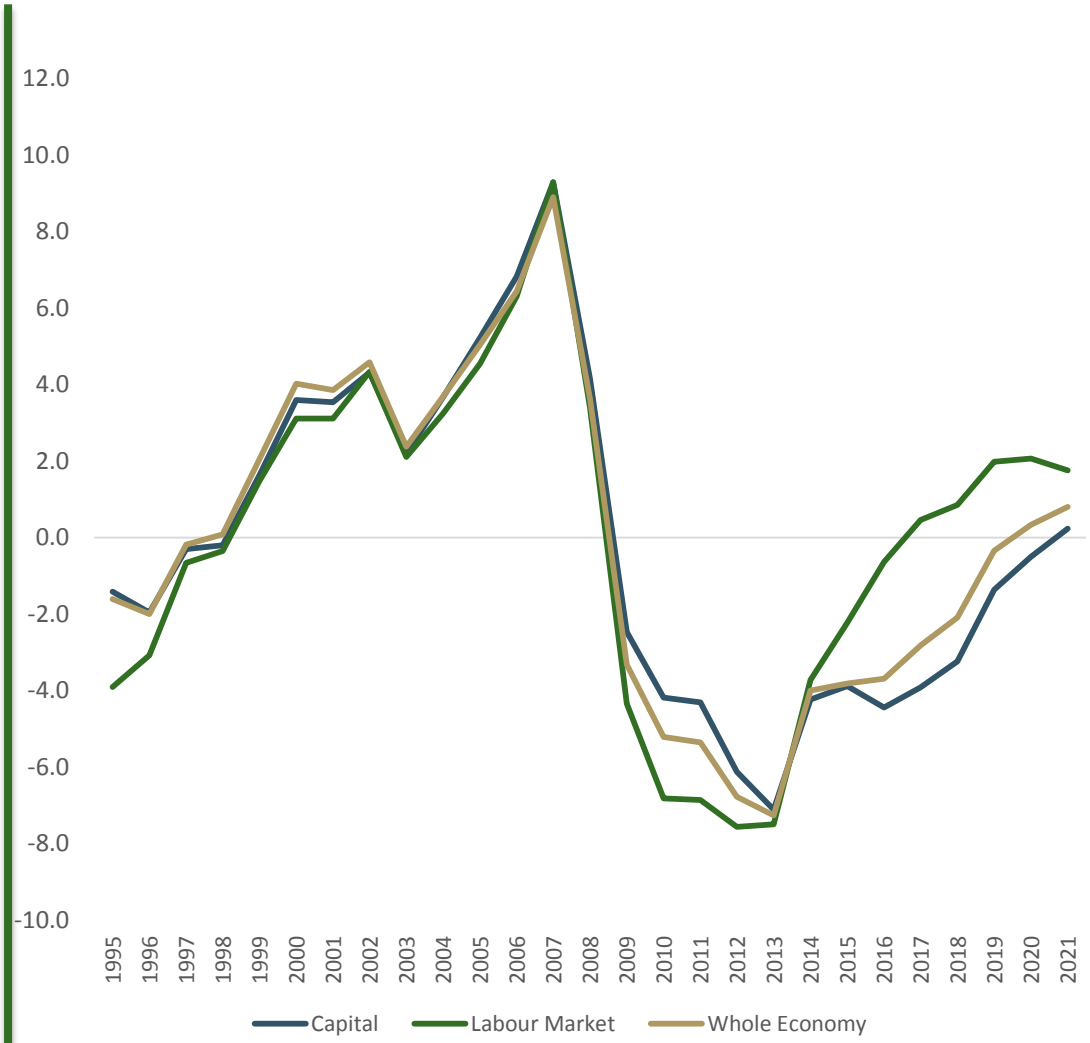
Alternative models of the supply side…

- **Filtering**
  - Trend-cycle decomposition using HP-filter, Kalman filter
    - : real GDP
    - : domestic GVA (adjusting for impact of MNCs)
    - : univariate and multivariate models
- **Extended HP (Borio et al 2013)**
  - : control for impact of financial and labour market channels
- **Incorporate demand side forecasts to 2021**

Assessment of alternative estimates…

- **Selection criteria consider**
  - statistical and economic fit of models
  - short-term stability of the estimates
    : magnitude of real time revisions
    : # sign changes with revised estimates
  - accuracy at turning points
  - ability to forecast inflation

Alternative output gap measures : Extended HP filter

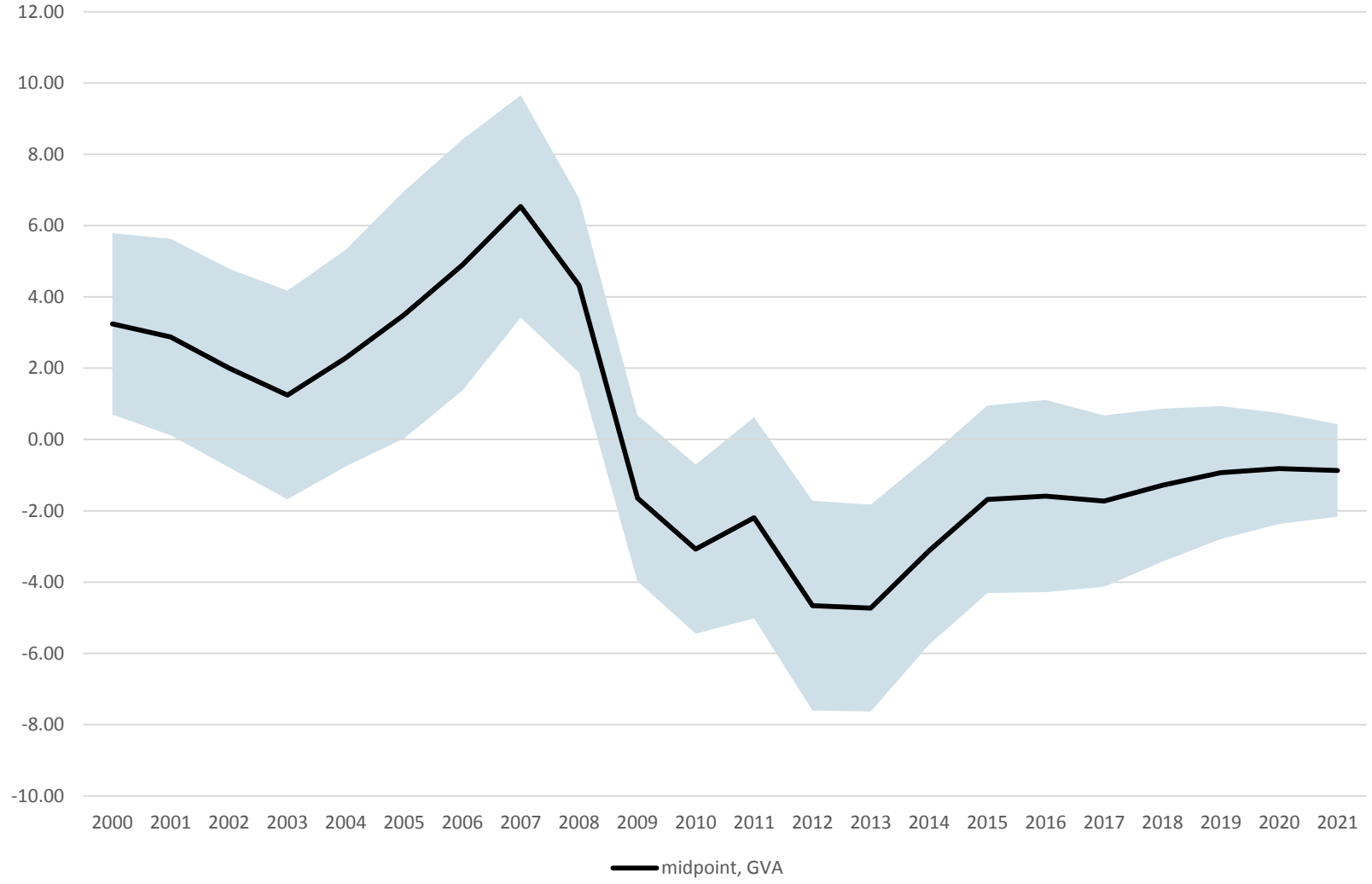


Dependent variable = Y	Capital	Labour Market	Whole Economy
OG(-1)	0.91 (0.02)		
Private sector credit growth	0.31 (0.03)		0.30 (0.05)
Emp. in construction (share)	1.34 (0.00)		0.91 (0.08)
CPI	1.15 (0.01)		1.15 (0.04)
Unemp. rate		-0.47 (0.01)	-0.19 (0.47)
Migration		7.29 (0.01)	1.00 (0.50)
AIC	4.000	4.140	4.170
LL	-228.0	-212.5	-212.2

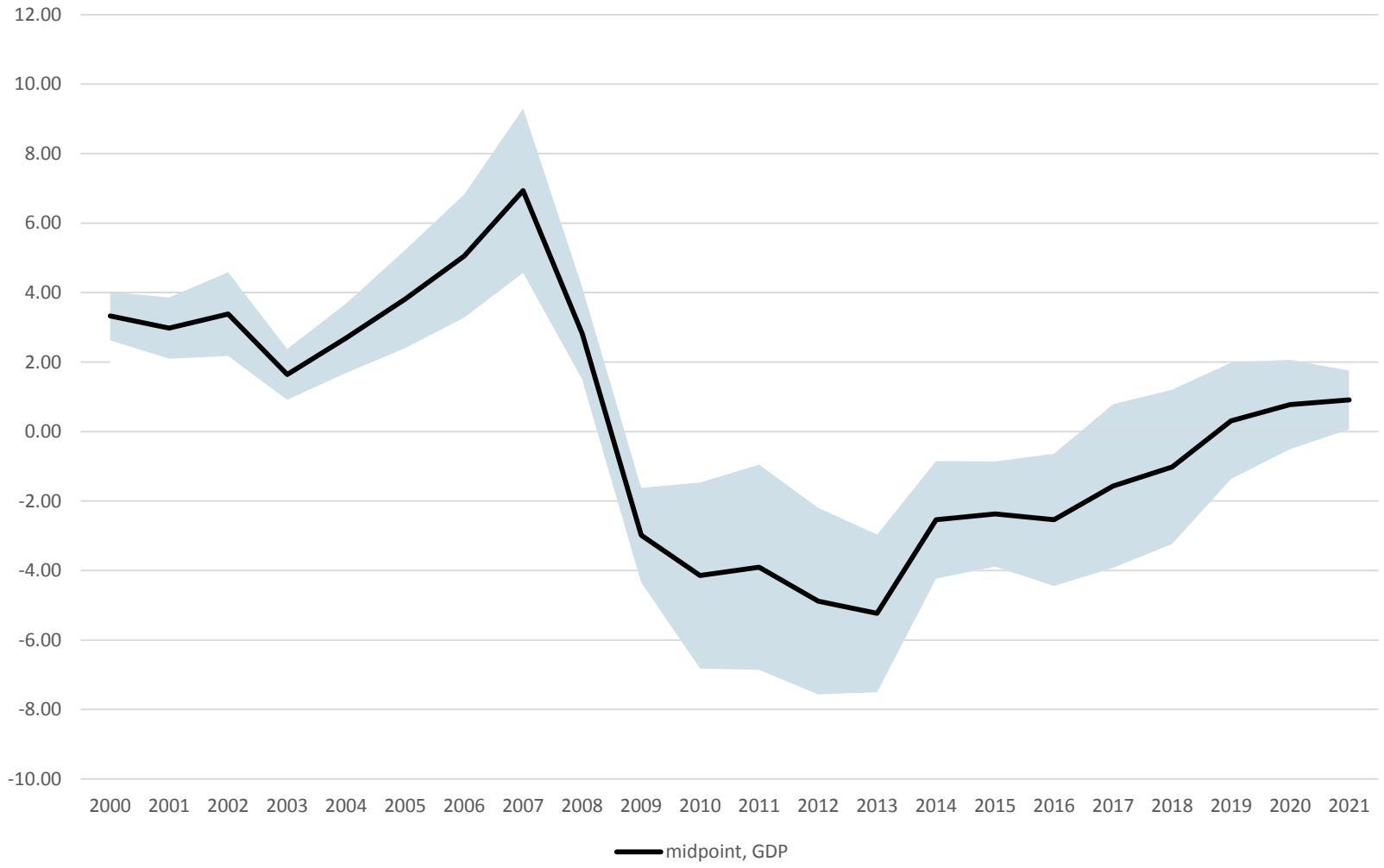
Alternative output gap measures : Domestic GVA, HP and Kalman filters

Dependent variable = Y	Domestic GVA KF	Domestic GVA KF with house prices	Domestic GVA KF with private sector credit
Trend	-1.003 (0.00)	1.00 (0.00)	1.00 (0.00)
Cycle	0.96 (0.00)	0.78 (0.00)	0.59 (0.03)
Error Variance	1.63 (0.00)	0.77 (0.09)	1.16 (0.14)
Drift	-	0.002 (0.99)	-
House Prices	-	0.19 (0.00)	-
Private Sector Credit	-	-	0.23 0.01
AIC	5.06	4.63	5.11
LL	-121	-108	-70

Alternative output gap estimates: mid-point

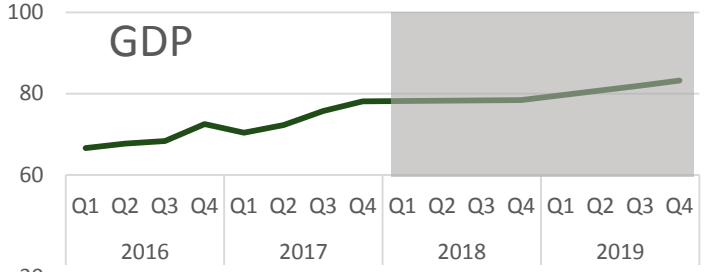


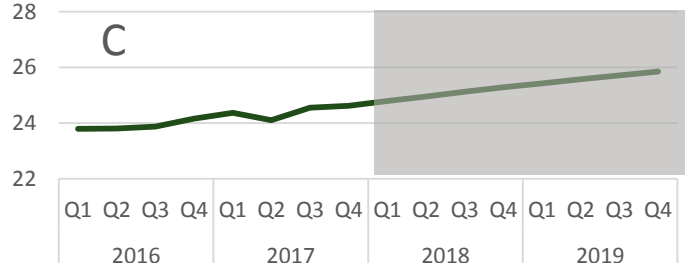
Alternative output gap estimates: mid-point

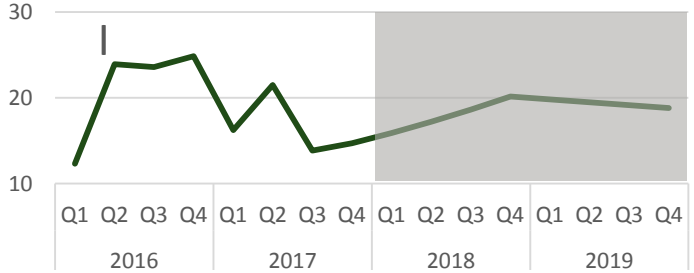


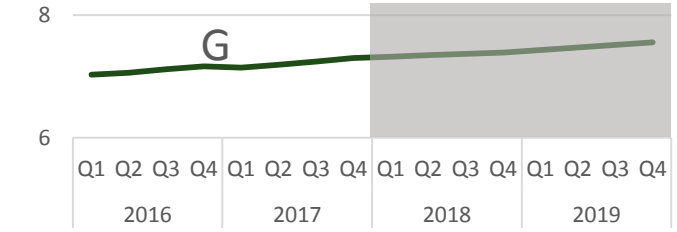
Annex

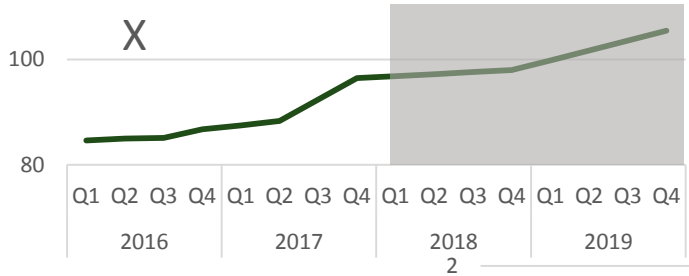
Quarterly profiles – real growth

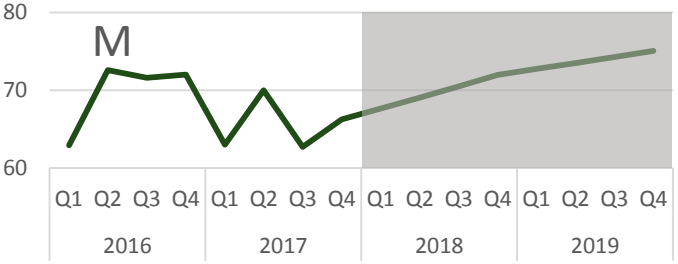


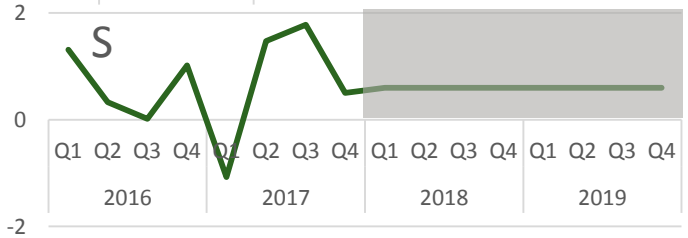




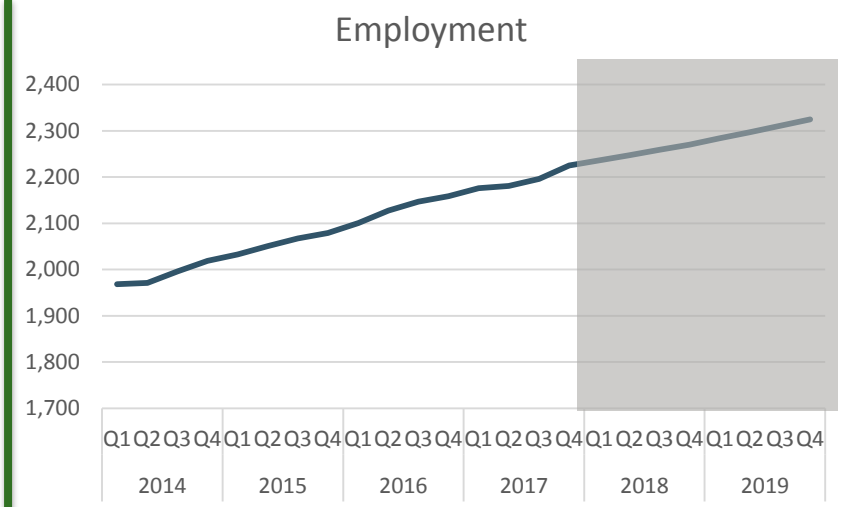


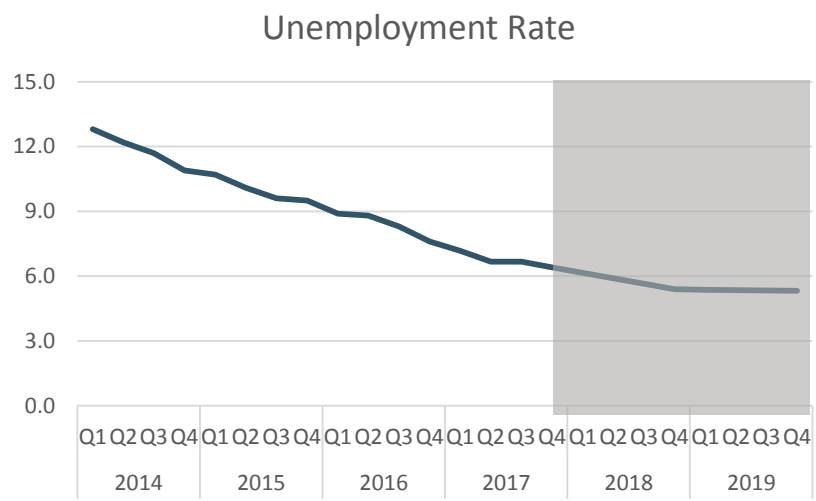


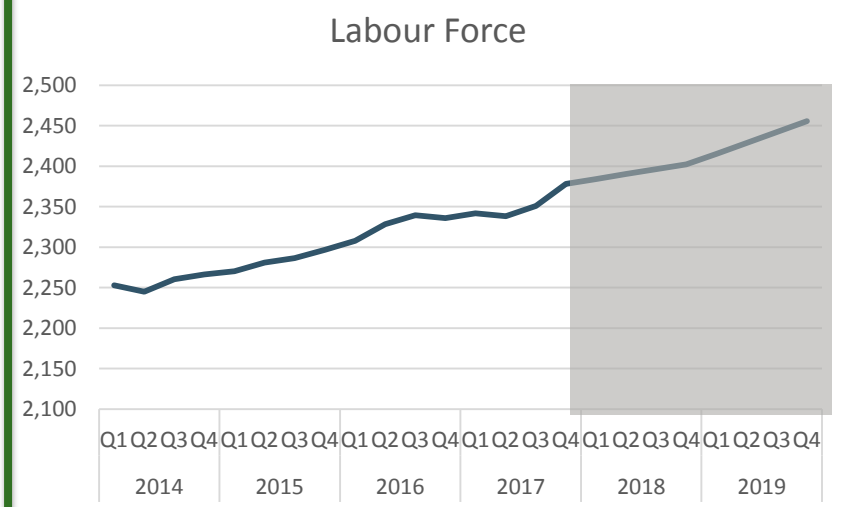


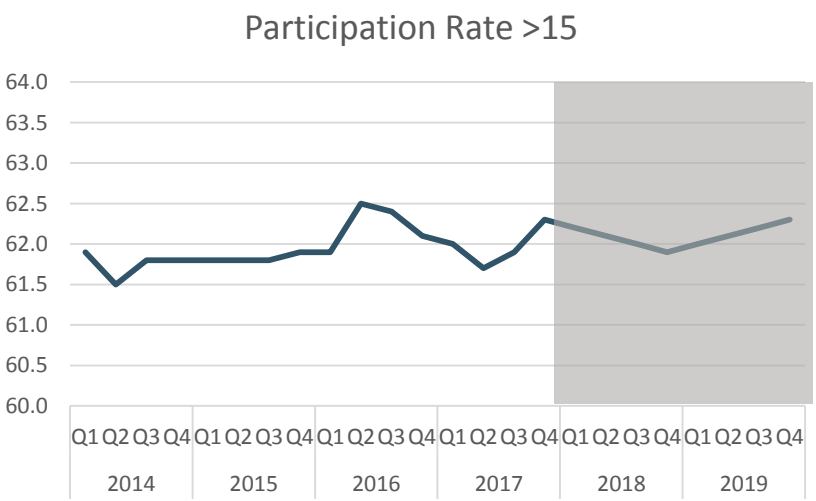


Labour market - Quarterly profiles (2018-2019)

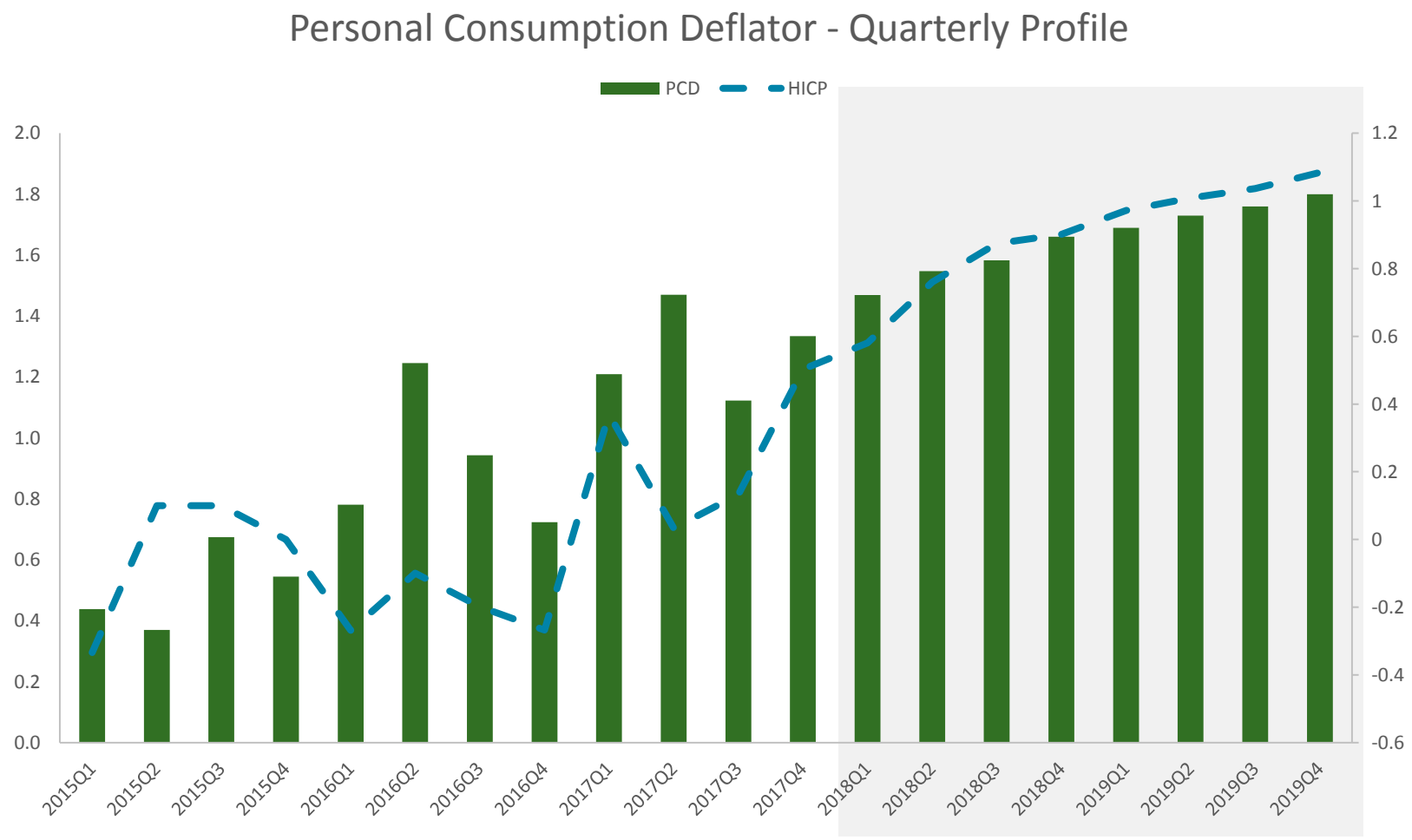






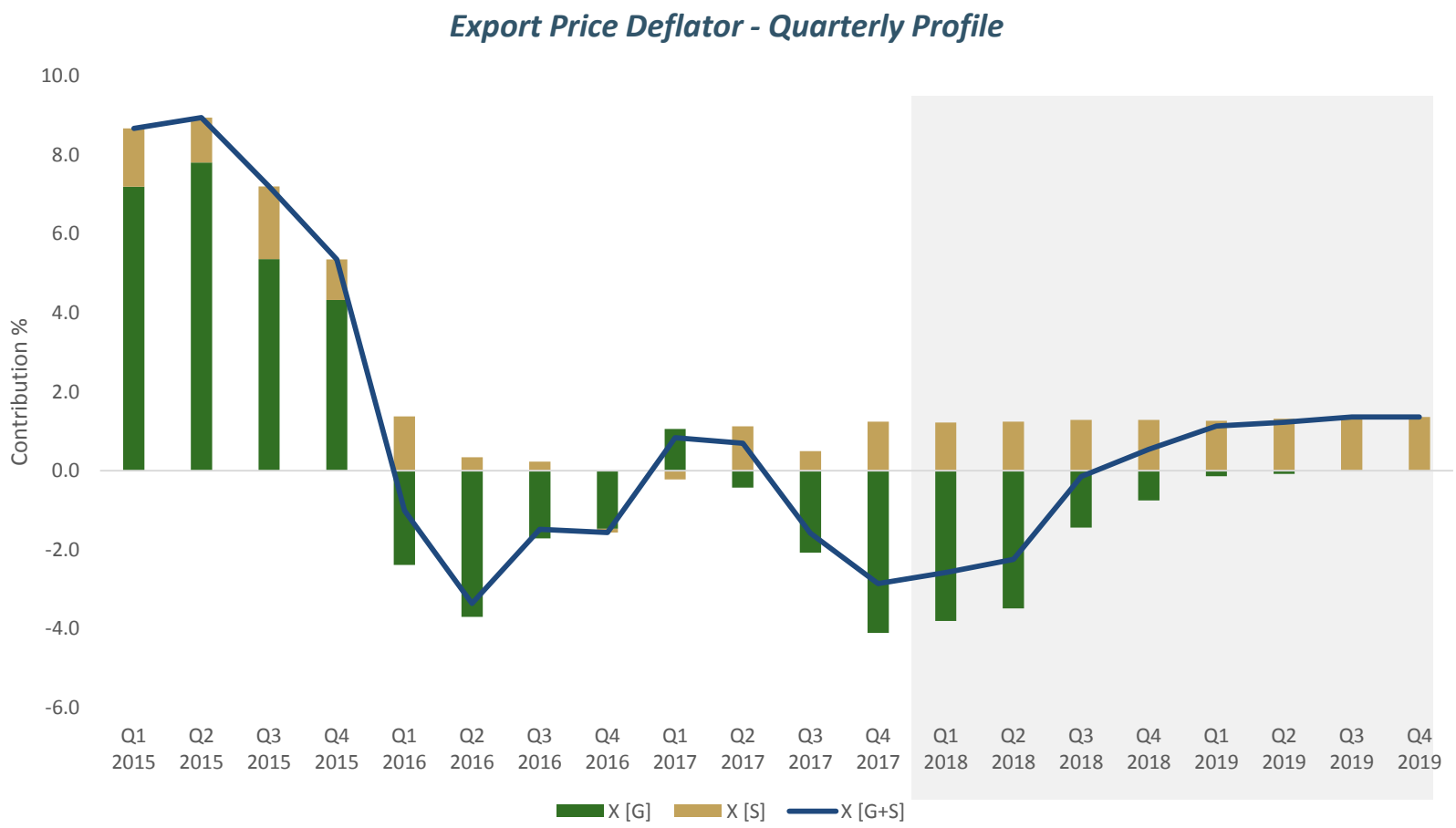


Personal Consumption Deflator - Quarterly profiles (2015-2019)



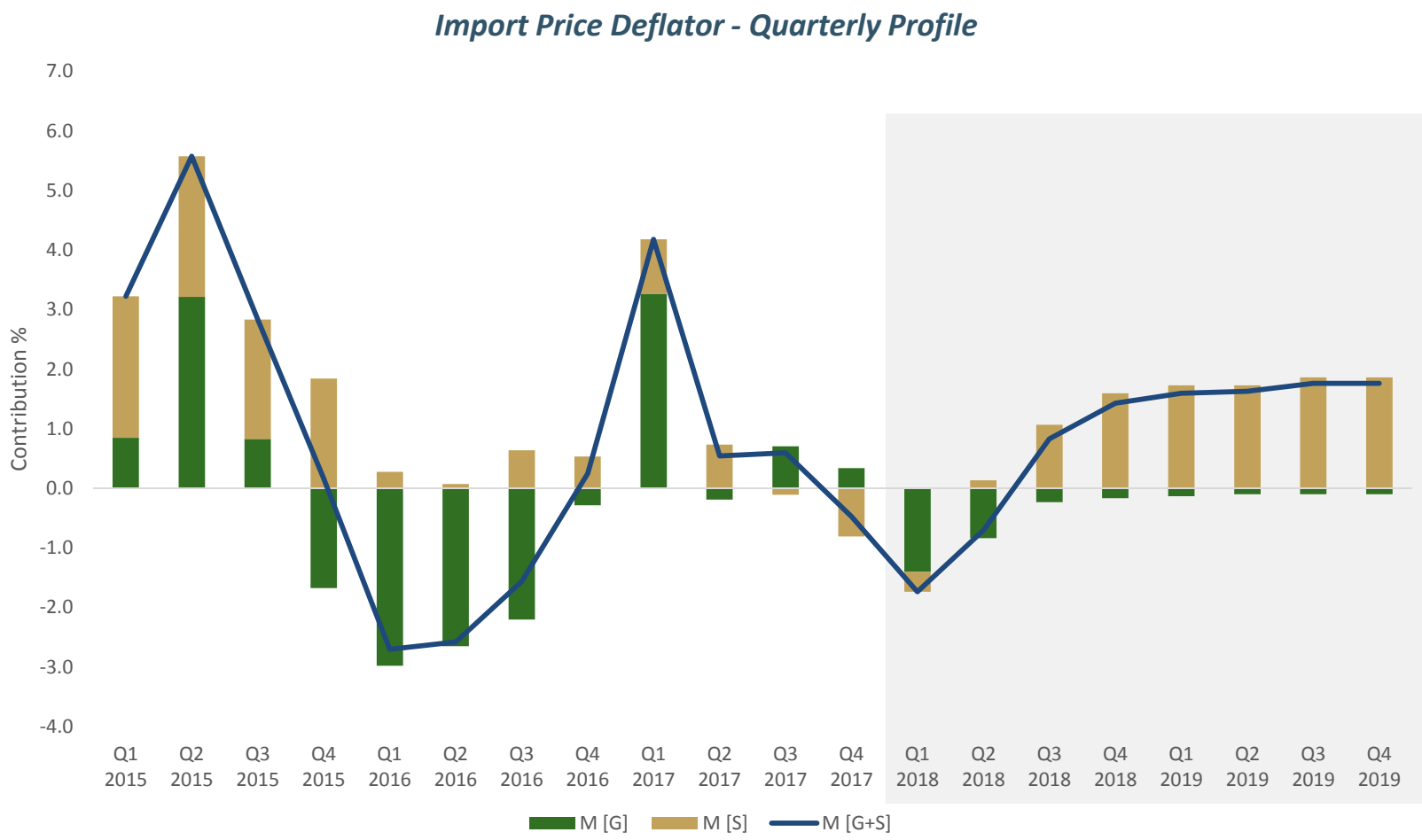
Source: CSO, DoF

Export Price Deflator - Quarterly profiles (2015-2019)



Source: CSO, DoF

Import Price Deflator - Quarterly profiles (2015-2019)



Source: CSO, DoF