STATES OF JERSEY

REVISED FORECAST OF STATES INCOME FOR MARCH 2017

Presented to the States on 9th June 2017
by the Minister for Treasury and Resources

STATES GREFFE

2017 R.66 (re-issue)

States of Jersey

Council of Ministers Report

Report on the Revised Forecast of States Income for March 2017

1. Purpose

To provide a revised forecast of all States income for the Council of Ministers to inform the development of early proposals for the draft Budget 2018.

2. Background

The Income Forecasting Group (IFG) revised forecasts for March 2017 for all States income derived from taxation and duty are summarised here but the more detailed report provided by the IFG to the Council of Ministers is attached at **Appendix A** with further supporting information at Appendix B to H.

This report also summarises the forecasts of other States income prepared by Treasury Officers and then subject to a peer review.

All forecasts have been prepared in line with the economic assumptions for 2016- 2021 endorsed by the Fiscal Policy Panel (FPP) in their letter of 1 March 2017.

The forecasts of States income are a critical component of the States medium and long term financial planning and are also required as part of the MTFP and annual Budget processes, alongside forecasts of States expenditure, to assess the projected balance on the Consolidated Fund.

3. Summary of Other States Income forecasts 2017-2021

There are a number of areas of States income for which forecasts are prepared which fall outside the scope of the IFG. The majority of this income arises from agreed formula such as rates of return or are based on agreed investment strategies.

These forecasts are prepared by the officers responsible for managing these areas and reviewed in total by the Treasury and have been updated for the draft Budget 2017 and in general use the same FPP endorsed economic assumptions from August 2016.

The areas included within 'Other Income' are summarised as:

- Island-wide rate,
- Income from Dividends and financial returns,
- Income other than from Dividends and financial returns, and
- Returns from Andium Homes and Housing Trusts.

The forecasts of other States income were reviewed and updated in the preparation of the Budget 2017 in September 2016. The forecasts have been fully reviewed to reflect the 2016 outturn and to model the effect of the revised economic assumptions (March 2017) and any initial in-year information for 2017 as appropriate.

Island-wide rate

The 12 Parishes collect an Island Wide Rate which is levied by the States. It provides a contribution to parish welfare costs which were incorporated into the new Income Support system in 2006.

The Island Wide Rate is increased annually based on the March RPI, which is proposed to the States by the Comité des Connétables.

The 2016 Outturn shows a small reduction of £1,155 on Budget 2017 forecast (September 2016) mainly affected by changes in numbers of households and variations in RPI.

The revised March 2017 forecast for 2017 – 2021 has been based on the actual rates received and shows a small reduction of approximately £75,000 in each forecast year compared to September 2016 forecast influenced by a reduction in RPI in the latest FPP economic assumptions (March 2017).

Income from Dividends and returns

The principal contributions to this area of income arise from the dividends paid by those incorporated bodies in which the States has a shareholding voting rights of:

- Jersey Telecom 100%
- Jersey Post 100%
- Jersey Electricity 86.4%
- Jersey New Waterworks 83.3%
- SoJDC 100%
- Ports of Jersey 100%

The dividends are paid according to the defined dividend policies and forecasts are prepared in line with the company's latest business model. In most cases the dividends are directly related to trading performance but can be affected by particular projects being undertaken.

The 2016 Outturn shows an increase of £1.4m on 2017 Budget forecast (September 2016) and is wholly affected by a higher than expected dividend paid by Jersey Telecom Group.

The revised forecast 2017 – 2021 shows only a small variation in each of the forecast years compared to the September 2016 forecast. The exception is the dividend income forecast from JT Group proposed for 2017, which shows an increase of £3.4m, at this stage similar levels are not proposed for the future years.

Other income – Dividends, now includes any financial return forecast from the Ports of Jersey, following their Incorporation in October 2015. However, in the early years of their trading the strategic business model indicates no net return for the MTFP period 2016-2019 as a result of forecast investment in commercial projects, post incorporation and reduced taxation returns as the loss relating to the payment of the PECRS pre-1987 debt is offset against tax.

Income – Non-Dividends

A number of income streams contribute to this area, many of which are fairly small and relatively simple to forecast i.e. income tax penalties, crown revenues and miscellaneous interest, fees and fines.

Larger streams of income arise from:

- Investment returns from the Consolidated Fund
- Investment returns from the Currency Fund
- Returns from the Jersey Financial Services Commission
- Returns from Jersey Car Parking Trading Account – until 2019

The investment returns from the Consolidated Fund and Currency Fund benefit from the pooled investments in the Common Investment Fund (CIF). The returns are based on the investment strategies of the two funds and the holding balance available to be invested.

The forecast returns can be quite volatile to the extent they are invested in equities, but a proportion of the balances need to be held in cash on which returns are generally lower but more stable. Return on cash with interest rates at all-time lows will remain fairly small for some time and there are no significant changes in interest rates predicted in the near future.

The 2016 Outturn shows a significant increase of £13.1m compared to Budget 2017 forecast (September 2016):

- Investments returns from the Consolidated Fund exceeded forecast by £10.4m;
- Investment returns from the Currency Fund exceeded forecast by £2.1m, and
- The remaining positive variances are for tax penalties and JFSC fees.

Balance of the Consolidated Fund

- The balance of the Consolidated Fund was higher than originally projected. The balance was originally expected to fall from the opening position of £149.0m to £110.8m by year end reflecting projected income, capital spend and expenditure. The closing balance of the fund in fact increased to approximately £203m (including £56.7m transferred into the Fund from the Strategic Reserve in November).

- The higher average balance of the fund allowed the investment portfolio to be retained rather than reduced, as predicted, to maintain the Funds liquidity ‘buffer’. The investment portfolio was expected to be reduced to £35m (from approximately £75m) to maintain £75m in cash, however the cash buffer of £75m was retained without needing to liquidate the investments. The average balance of cash was maintained at approximately planned levels though there was some volatility reflecting operational cash flows.

Return of the Investment Portfolio

- Returns from our Investment Portfolio were far higher than anticipated. This was driven by the higher average balance of the portfolio, but also far higher than anticipated returns. Our advisors anticipated a constrained rate of return due to high starting valuations and ongoing political uncertainty, this however included a wider than usual potential range of outcomes mirroring that uncertainty. Treasury applied the mid return expectations which included a prudent 2.4% return from global equity, a rate lower than historic averages.

- Out performance was primarily driven by two asset classes, Equity and to a lesser extent Corporate Bonds. Rather than a 2.4% rate of return, global equity returned in excess of 28%. Combining the higher than expected holding, and higher rate of return, Equity was expected to yield 0.65m however yielded £9.8m. A large part of this gain was driven by the unexpected impact of Brexit, much of the equity portfolio is held in foreign denominated currencies, the significant fall in Sterling resulted in a corresponding rise in the value of these assets. This was combined with further appreciation of market values, generated by positive US market data and the results of the US election with markets reacting positively to expected increases in US government spending.

- The second asset class which saw unanticipated outperformance was the UK Corporate Bonds pool. This pool of high quality assets was expected to yield a low return of £0.1m with rates base remaining unchanged, however it saw a significant rise in reaction to unanticipated rate cuts by the Bank of England in reaction to the results of the EU referendum.

Cash Returns

- Although a higher balance of cash was held, cash, the largest component of the portfolio, underperformed due to the cut in interest rates. The impact of lower rates was offset, however by the higher balance held.

Rate of the Currency Fund

- The balance of the Notes Fund remained as projected, however the small proportion of Equity (20%) held in the portfolio generated much of the fund return. Cash underperformed due to the fall in the base rate however this was more than offset by the gain seen in the equity class.

- Equity generated in excess of £4m however a proportion of this balance is retained in the Fund and not transferred to the Consolidated Fund in the form of a financial return to ensure a sufficient buffer is retained against future volatility.

Summary - revised forecasts (March 2017) for this area is increasing compared to previous forecasts:

- Returns from the Consolidated Fund will be higher due to greater confidence in higher Fund balances as a result of improved 2016 revenues which in turn allows a continued higher level of equity holdings going forward thus improving expected returns.
- Similar position with Currency Fund, in particular greater certainty of infrastructure investment returns from 2019.

<u>Returns from Andium Homes and Housing Trusts</u>

The returns from Andium Homes and the Housing Trusts arise from the incorporation of the housing function in July 2014. Andium is obliged to make a return based on the transfer agreement and an agreed rental and return policy.

The return is influenced by the prevailing RPI and the small variations in the latest FPP economic assumptions produce a small increase in the forecasts. Agreements are well advanced with Housing Trusts to deliver a return tracking each Trusts proposed transition to the 90% market rent levels.

This income stream is intended to broadly offset the increases that would be required to the housing component of income support for those claimants in Andium or Housing Trust properties.

The only small outturn variance to 2017 Budget forecast is in respect of Housing Trust due to fluctuations in the RPI and transition to the 90% market rent levels.

The forward forecast is broadly neutral compared to 2017 Budget forecast with small reductions in the Andium returns arising from RPI changes offset by the increases forecast in returns from Housing Trust as agreements are finalised.

Economic Assumptions for Other States Income

The common economic assumptions endorsed by the FPP in March 2017 have been applied for the other income forecasts where appropriate. Where more specific assumptions are required relating to particular investment returns these have been drawn from the States external investment advisers.

Other Income Forecasts for 2017-2021

The revised March 2017 forecasts in **Figure 1** show that the main variances compared to the September 2016 forecasts are due as follows:

- the revised approach to investment income,
- the higher dividend from Jersey Telecom for 2017, and
- the changes to the RPI assumptions.

Figure 1 - Revised forecasts for Other Income for March 2017

Other Income	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Island Wide Rate	12,141	12,469	12,843	13,267	13,704	14,157
Other Income - Dividends	12,568	12,130	9,127	15,034	9,667	10,016
Other Income - Non Dividends	22,760	13,853	11,294	12,897	13,796	14,638
Other Income - Returns from Andium and Housing trusts	27,856	28,394	29,227	30,174	31,217	32,296
Total Other Income	**75,325**	**66,846**	**62,491**	**71,372**	**68,384**	**71,107**
Budget 2017 Forecast	60,786	59,734	60,897	68,753	66,203	-
Variation	14,539	7,112	1,594	2,619	2,181	71,107

Forecast range

A forecast range has been provided for those areas of other income that are appropriate relating to business models and investment returns. The impact on the central forecasts is shown in **Figure 2.**

Figure 2 - Revised forecasts for Other Income ranges for March 2017

Other Income	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Higher	75,325	67,209	63,823	74,916	72,254	76,073
Central	**75,325**	**66,846**	**62,491**	**71,372**	**68,384**	**71,107**
Lower	75,325	66,318	61,149	68,807	64,596	66,392
Range £'000	-	**891**	**2,674**	**6,109**	**7,658**	**9,681**
Range %	**0%**	**1%**	**4%**	**9%**	**11%**	**14%**

4. Summary of States Income forecasts from Taxation and Duty for 2016-2021

The IFG is presenting the revised forecasts of States income from taxation and duty to inform the development of proposals for the draft Budget 2018.

This section summarises the detailed report provided by IFG to the Council of Ministers and which is attached as **Appendix A** with further supporting information at Appendix B to H.

The revised forecasts have been prepared by officers and reviewed in detail by the IFG.

This revised forecast from the IFG follows the forecast update prepared in September 2016 to inform the draft Budget 2017. Since that time the IFG has received further information based on:

- Updated FPP endorsed economic assumptions for 2016-2018 from the Panel's letter to the Treasury Minister, 1 March 2017, which show a slight improvement in the assumptions over the forecast period to 2018 compared to those in August 2017.
- The financial outturn for 2016 for all States income and detailed income tax data for year of assessment 2015. The financial performance for 2016 in several income areas was in excess of the September forecasts and these variances are explained in the detailed sections of this report.
- Updated data on personal income tax and particularly corporate income tax for year of assessment 2016 and initial data for other income areas to March 2017.
- Contributions and supplementation data from the Social Security Department for 2016.
- The income tax forecasting model has been updated to reflect the latest FPP endorsed economic assumptions and IFG have also given consideration to the proposals from the external review of the personal income tax forecasting model.

Figure 3 Revised forecasts (March 2017) for States income from taxation and duty

States Income from Taxation and Duty	Actual	March 2017 forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
- Income Tax	487,965	483,000	510,000	532,000	556,000	580,000
- GST	84,798	85,842	86,479	87,135	88,011	88,910
- Impôt Duties	58,410	58,942	58,846	58,873	59,088	59,323
- Stamp Duty	30,305	28,133	29,641	30,241	30,859	31,496
Higher Scenario	-	*668,787*	*711,463*	*743,466*	*783,819*	*825,371*
Central Scenario	**661,478**	**655,917**	**684,966**	**708,249**	**733,958**	**759,729**
Lower Scenario	-	*644,782*	*660,662*	*675,774*	*687,064*	*697,368*
		-1%	*4%*	*3%*	*4%*	*4%*
Budget 2017 as amended	636,515	650,952	680,649	706,583	731,843	-
Variation to Budget 2017 as amended	24,963	4,965	4,317	1,666	2,115	759,729

Variation in 2016 Outturn compared to Budget 2017 (September 2016) forecast

- Income tax exceeded forecast by £17 million primarily as a result of the increase in personal income tax from current year basis (CYB) taxpayers, but also from earned and unearned income being higher than forecast.
- Alcohol and tobacco duties exceeded forecast by £1.8 million and indications from the trade suggest this may have been due to long periods of good weather during last summer.
- Stamp duty exceeded the last forecast by almost £5 million due to a significant volume of high value property transactions in the last quarter of 2016. This activity followed the announcement in September 2016 of draft Budget 2017 proposals to increase stamp duty on property transactions over £3 million from January 2017.

Movements in forecasts since the Budget 2017 (September 2016) forecast

The revised forecast shows a number of variations compared to the September 2016 position which reflect a slight improvement in 2017 and 2018 and a slight worsening over the remaining forecast years where modelling and trend changes in income tax offset improvements in other areas of tax and duty.

The main forecast variations which are described and explained in more detail in the individual sections of the report can be summarised as follows:

Personal Income Tax

- The revised forecast includes improvements from the 2016 outturn and revised economic assumptions, which taken together increase forecasts by £7m-£8m in each forecast year.

- Adopting a prudent approach to forecasts of the yield and adopting outcomes from the external review of the forecasting model, which propose adjustments to employment income and pension income assumptions, result in offsetting reductions of £1m in 2017, but increasing to £5m in 2020.
- Overall, personal income tax is forecast to be higher in each year of the forecast but the increase reduces from £6m in 2017 to only £3m in 2020.

Current Year Basis forecasts

- The Budget 2017 forecasts included a £7 million adjustment in each of the forecast years based on previous years' figures. However, the 2016 outturn showed a year on year increase of over £13 million.

- Further analysis of the outturn and of previous trend back to the introduction of ITIS and current year payment basis in 2006 shows a correlation between levels of CYB increase and the level of real GVA and migration trends.

- On this basis a revised CYB adjustment is proposed at £10 million for 2017 but reducing to £8 million per annum for 2018 onwards.

Corporate Income Tax

- Although the 2016 Outturn was higher than forecast, company submissions for YOA 2016 confirm certain reductions in forecast that were already reflected in the September 2016 update. In addition, further reductions are also identified for a number of the larger corporate taxpayers. Further analysis identifies that some of these reductions are one-

off but overall there is a fairly significant reduction of £7m-£8m a year, beyond that forecast in September 2016.

- The expected 4.4% growth in finance sector profits in 2017 is based on weighted aggregate responses to the December 2016 Business Tendency Survey. This is higher than the previous assumption of 2.6% and results in an increase in the forecast of £1m higher from 2018 onward.

- As a result of the approval of additional Taxes Office compliance staff, additional tax revenue of £3 million per year is being proposed from 2018.

Total Income Tax (including CYB adjustment)

- The overall position on income tax is that the improvements in personal income tax are broadly offset by the reductions in corporate tax forecasts resulting in a small net increase of £2 million in 2017 and 2018 and then moving to a reduction of £1 million from 2019 onwards.

GST, ISE Fees and Import GST

- 2016 GST receipts were higher than forecast and there is no evidence to suggest this has been particularly influenced by one off events. The FPP economic assumptions forecast real economic growth in 2017 which is an improvement from September 2016. The combination of these two factors results in an increase to the forward forecasts of £2 million each year.
- ISE fees have been fairly stable at £9 million per year but the 2017 returns indicate a reduction to £8.4 million and further information from advisers suggest this could fall further in 2018 and 2019.
- The overall effect is that total GST revenues are expected to increase by about £1.5 million per year compared to September forecasts.

Impôts Duties

- The 2016 outturn for alcohol and tobacco duty was higher than forecast and has improved the base forecast going forward although the effect on the forecast formula is tempered by the use of 10 year trend assumptions for all commodities.
- The forecast is further tempered by the reduction in FPP assumptions for RPI in 2017 and 2018. Overall an increase of around £1 million can be seen in each forecast year.

Stamp Duty

- Stamp duty exceeded forecast by £5 million in 2016 almost entirely due to exceptional activity on high value property transactions in the final quarter of 2016. The activity was driven by the draft Budget 2017 proposals (September 2016) to increase stamp duty on property transactions over £3 million.
- After significant analysis a revised base position for future forecasts of this category of property transactions has been agreed with IFG. Taken together with an estimate of the effect of the Budget 2017 proposals in an average year, the stamp duty forecasts are increased by almost £1 million.
- The stamp duty from Wills and Probate are difficult to predict and have shown reductions in recent years. The IFG is proposing a reduction in future forecasts reflecting recent trends and this reduces the overall increase in stamp duty to £400,000 per year for the forecast period.

5. Variations to Sustainable Funding Measures included in the MTFP Addition 2017-2019

The States income figures agreed in the MTFP 2016-2019 (October 2015) included forecasts for the introduction of sustainable funding mechanisms for the payment of rates from 2017 and for a health charge from 2018. The revised forecast includes the impact of the subsequent decisions in the MTFP Addition 2017-2019 (September 2016) to defer the funding mechanism for the payment of rates until 2018, and not to approve a Health Charge.

The Budget 2017 proposed the inclusion of future revenue raising measures intended to replace the funding mechanism for Health in 2018 and 2019, with these measures to be brought forward by the Budget 2018. These measures are being considered following the various income tax reviews and proposals will be developed ahead of the draft Budget 2018 in September 2017.

6. Summary of Total States Income Forecasts for 2017-2021 (March 2017)

The revised FPP endorsed economic assumptions (March 2017) provide a range of assumptions higher, lower and central. These assumptions are used within the modelling of the different types of States income along with some other factors to provide an illustrative range of income forecasts.

The range around the central forecast has not changed significantly but has been updated and re-modelled to reflect the revised range of economic assumptions.

The central scenario is broadly the mid-point of the range. The range in the forecasts by 2021 is just over £130 million or +/- 8% within the higher and lower scenarios.

Figure 4 shows the forecast range for the revised States income forecast and indicates the movement since the Budget 2017 (September 2016) forecasts.

Figure 4 – Revised income forecast range (March 2017) for States Income for 2017-2021

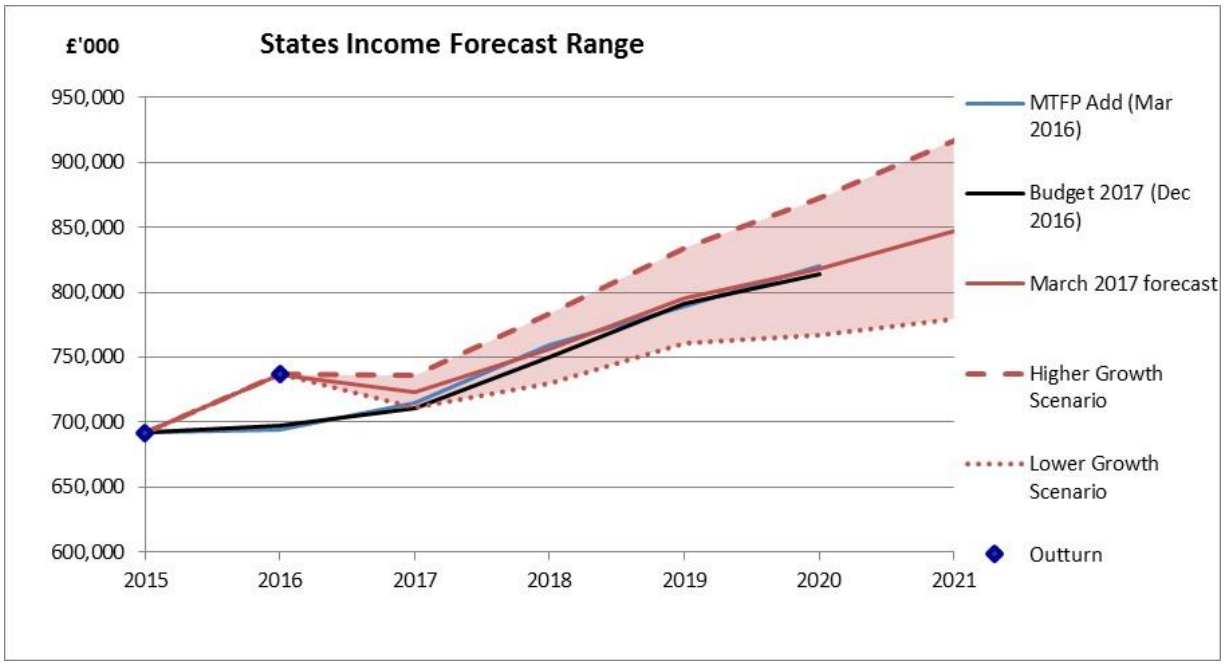


Figure 5 - A summary of the revised forecast of all States Income for 2017-2021

Central Forecast from Range (March 2017)	March 2017 forecast				
	2017 £'000	2018 £'000	2019 £'000	2020 £'000	2021 £'000
States General Revenues Income					
- Income Tax	483,000	510,000	532,000	556,000	580,000
- GST	85,842	86,479	87,135	88,011	88,910
- Impôt Duties	58,942	58,846	58,873	59,088	59,323
- Stamp Duty	28,133	29,641	30,241	30,859	31,496
Income from Taxation and Duty	**655,917**	**684,966**	**708,249**	**733,958**	**759,729**
- Other Income	66,846	62,491	71,372	68,384	71,107
- Proposed Mechanism to offset States Payment of Rates	-	900	900	900	900
- Proposed Future revenue raising measures	-	7,500	15,000	15,000	15,000
Higher Growth Scenario	***735,996***	***783,686***	***834,282***	***871,973***	***917,344***
Total States Income - Central Scenario	**722,763**	**755,857**	**795,521**	**818,242**	**846,736**
Lower Growth Scenario	***711,100***	***730,211***	***760,481***	***767,560***	***779,660***
Budget 2017 (September 2016) as amended	**710,686**	**749,946**	**791,236**	**813,946**	**-**
Variation to Budget 2017 as amended	***12,077***	***5,911***	***4,285***	***4,296***	**-**

7. Recommendation

The IFG and other income forecasts are presented as a range around a central scenario for the period 2017-2021.

In light of the continuing uncertainties identified in the outlook, it is imperative that the Council of Ministers continues to maintain sufficient flexibility in the forecasts and in the development of the proposals for the draft Budget 2018.

States Treasury **May 2017**

Appendices to Summary of Revised Income Forecasts for March 2017

Appendix A - IFG Report on the Revised Forecast of States Income from Taxation and Duty for March 2017

Appendix B – Income Tax Forecast Detailed Note to IFG

Appendix C - Contains an analysis of recent trends in the economy which supported the economic assumptions.

Appendix D - Covers recent trends in income tax revenues.

Appendix E - External review of the approach to forecasting employment income.

Appendix F - External review of the approach to forecasting pension income.

Appendix G – Current Year Basis (CYB) Forecast 2017 to 2021

Appendix H – Social Security Contributions Quarter D 2016

APPENDIX A

States of Jersey

Council of Ministers Report

IFG Report on the Revised Forecast of States Income from Taxation and Duty for March 2017

1. Purpose

To provide a revised forecast of States income from taxation and duty for the Council of Ministers for March 2017. The forecasts reflect:

- the Fiscal Policy Panel (FPP) economic assumptions of March 2017;
- general revenues outturn for 2016;
- actual information on general revenues to March 2017;
- information from the Taxes Office for Year of Assessment (YOA) 2016;
- proposals from the external review of the personal income tax forecasting model.

2. Background

The agreed Terms of Reference for the IFG requires that at least two forecasts are produced each year. This March 2017 forecast will provide the background to the development of initial proposals for the draft Budget 2018.

The next scheduled revision of income forecasts by IFG will be an update carried out in August/September 2017 to inform the final proposals and then the debate of the draft Budget 2018.

The IFG forecasts cover a large proportion of States income, but exclude other States income for Island Wide Rate, dividends and returns from States Investments and other fees which are produced and reported separately.

3. Summary of Revised Forecasts of States Income from Taxation and Duty

The revised forecast has been prepared by officers and reviewed by the IFG and is considered as the central scenario within a range for 2017-2021.

<u>Uncertainties and range of forecasts</u>

The FPP have advised that the uncertainty around economic assumptions and general economic uncertainty in the medium term is unchanged from its September 2016 forecast. The IFG's view is that the balance of risks to the financial forecasts remains on the downside but less so than before the UK referendum on Brexit.

The IFG view reflects the fact that some of the uncertainty regarding Brexit is now factored into the FPP's economic assumptions. The FPP and IFG have both intimated that there are also business opportunities within these areas of uncertainty.

The IFG would emphasis certain factors which reflect uncertainty in the outlook as follows:

Personal income tax:

- uncertainty regarding the amount of shareholder income arising in any particular year;
- impact of unforeseen changes in interest rates on investment incomes; and
- variations in employment numbers/earnings both in level and distribution.

Corporate income tax:

- impact of unforeseen external events on the taxable profits of major corporate taxpayers;
- impact of UK banking sector reforms and changes in interest rates on banking profits;
- impact on business activity of the outcome of the UK Brexit negotiations; and
- impact on the global economy of a loss of momentum in advanced economies, transition in China and risks to emerging economies and the effect on the market opportunities for Island businesses.

Both personal and corporate income taxes:

- performance of the Island economy;
- combined impact of future changes in fiscal policy such as public sector reform and future capital expenditure;
- impact of current and proposed EU and OECD international tax initiatives including the impact of any listing of the Island by the EU; and
- impact of changes to UK tax policy and anti-avoidance measures.

The IFG continues to emphasise the need to include flexibility within future financial planning given the risks above and this is reflected by the range around the income tax forecast.

Draft income forecasts for March 2017

This revised forecast from the IFG follows the forecast update prepared in September 2016 to inform the draft Budget 2017. Since that time the IFG has received further information based on:

- Updated FPP endorsed economic assumptions for 2016-2018 from the Panel's letter to the Treasury Minister, 1 March 2017, which show a slight improvement in the assumptions over the forecast period to 2018 compared to those provided in August 2017.

- The financial outturn for 2016 for all States income and detailed income tax data for year of assessment 2015. The financial performance for 2016 in several income areas was in excess of the September forecasts and these variances are explained in the detailed sections of this report.

- Updated data on personal income tax and particularly corporate income tax for year of assessment 2016 and initial data for other income areas to March 2017.

- Contributions and supplementation data from the Social Security Department for 2016.

- The income tax forecasting model has been updated to reflect the latest FPP endorsed economic assumptions and IFG have also given consideration to the proposals from the external review of the personal income tax forecasting model.

A summary of the revised forecasts for taxation and duty for March 2017 are shown in **Figure 1**, together with a comparison with the Budget 2017 (September 2016) forecast.

Figure 1: Revised forecast (March 2017) for States income from taxation and duty

States Income from Taxation and Duty	Actual	March 2017 forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
- Income Tax	487,965	483,000	510,000	532,000	556,000	580,000
- GST	84,798	85,842	86,479	87,135	88,011	88,910
- Impôt Duties	58,410	58,942	58,846	58,873	59,088	59,323
- Stamp Duty	30,305	28,133	29,641	30,241	30,859	31,496
Higher Scenario	-	*668,787*	*711,463*	*743,466*	*783,819*	*825,371*
Central Scenario	**661,478**	**655,917**	**684,966**	**708,249**	**733,958**	**759,729**
Lower Scenario	-	*644,782*	*660,662*	*675,774*	*687,064*	*697,368*
		-1%	*4%*	*3%*	*4%*	*4%*
Budget 2017 as amended	636,515	650,952	680,649	706,583	731,843	-
Variation to Budget 2017 as amended	24,963	4,965	4,317	1,666	2,115	759,729

Variation in 2016 Outturn compared to Budget 2017 (September 2016) forecast

- Income tax exceeded forecast by £17 million primarily as a result of the increase in personal income tax from current year basis (CYB) taxpayers, but also from earned and unearned income being higher than forecast.
- Alcohol and tobacco duties exceeded forecast by £1.8 million and indications from the trade suggest this may have been due to long periods of good weather during last summer.
- Stamp duty exceeded the last forecast by almost £5 million due to a significant volume of high value property transactions in the last quarter of 2016. This activity followed the announcement in early October 2016 of draft Budget 2017 proposals to increase stamp duty on property transactions over £3 million from January 2017.

Movements in forecasts since the Budget 2017 (September 2016) forecast

The revised forecast shows a number of variations compared to the September 2016 position which reflect a slight improvement in 2017 and 2018 and a slight worsening over the remaining forecast years where modelling and trend changes in income tax offset improvements in other areas of tax and duty.

The main forecast variations, which are described and explained in more detail in the individual sections of the report, can be summarised as follows:

Personal Income Tax

- The revised forecast includes improvements from the 2016 outturn and revised economic assumptions, which taken together increase forecasts by £7m-£8m in each forecast year.

- Adopting a prudent approach to forecasts of the yield and adopting outcomes from the external review of the forecasting model, which propose adjustments to employment

income and pension income assumptions, result in offsetting reductions of £1m in 2017, but increasing to £5m in 2020.

- Overall, personal income tax is forecast to be higher in each year of the forecast but the increase reduces from £6m in 2017 to only £3m in 2020.

Current Year Basis forecasts

- The Budget 2017 forecasts included a £7 million adjustment in each of the forecast years based on previous years' figures. However, the 2016 outturn showed a year on year increase of over £13 million.

- Further analysis of the outturn and of previous trend back to the introduction of ITIS and the current year payment basis in 2006 shows a correlation between levels of CYB increase and the level of real GVA and migration trends.

- On this basis a revised CYB adjustment is proposed at £10 million for 2017 but reducing to £8 million per annum for 2018 onwards.

Corporate Income Tax

- Although the 2016 Outturn was higher than forecast, company submissions for YOA 2016 confirm certain reductions in forecast that were already reflected in the September 2016 update. In addition, further reductions are also identified for a number of the larger corporate taxpayers. Further analysis identifies that some of these reductions are one-off but overall there is a fairly significant reduction of £7m-£8m a year, beyond the reductions forecast in September 2016.

- The expected 4.4% growth in finance sector profits in 2017 is based on weighted aggregate responses to the December 2016 Business Tendency Survey. This is higher than the previous assumption of 2.6% and results in an increase in the forecast of £1m higher from 2018 onward.

- As a result of the approval of additional Taxes Office compliance staff, additional tax revenue of £3 million per year is being proposed from 2018.

Total Income Tax (including CYB adjustment)

- The overall position on income tax is that the improvements in personal income tax are broadly offset by the reductions in corporate income tax resulting in a small net increase of £2 million in 2017 and 2018 and then moving to a reduction of £1 million from 2019 onwards as seen in **Figure 8.**

GST, ISE Fees and Import GST

- 2016 GST receipts were higher than forecast and there is no evidence to suggest this has been particularly influenced by one off events. The FPP economic assumptions forecast real economic growth in 2017 which is an improvement from September 2016. The combination of these two factors results in an increase to the forward forecasts of £2 million each year.
- ISE fees have been fairly stable at £9 million per year but the 2017 returns indicate a reduction to £8.4 million and further information from advisers suggest this could fall further in 2018 and 2019.
- The overall effect is that total GST revenues are expected to increase by about £1.5 million per year compared to September 2016 forecasts.

Impôts Duties

- The 2016 outturn for alcohol and tobacco duty was higher than forecast and has improved the base forecast going forward, although the effect on the forecast formula is tempered by the use of 10 year trend assumptions for all commodities.
- The forecast is further tempered by the reduction in FPP assumptions for RPI in 2017 and 2018. Overall an increase of around £1 million can be seen in each forecast year.

Stamp Duty

- Stamp duty exceeded forecast by £5 million in 2016 almost entirely due to exceptional activity on high value property transactions in the final quarter of 2016. The activity was driven by the draft Budget 2017 proposals (announced in early October 2016) to increase stamp duty on property transactions over £3 million.
- After significant analysis a revised base position for future forecasts of this category of property transactions has been agreed with IFG. Taken together with an estimate of the effect of the Budget 2017 proposals in an average year, the stamp duty forecasts are increased by almost £1 million for each forecast year.
- The stamp duty from Wills and Probate are difficult to predict and have shown reductions in recent years. The IFG is proposing a reduction in future forecasts reflecting recent trends and this reduces the overall increase in stamp duty to £400,000 per year for the forecast period.

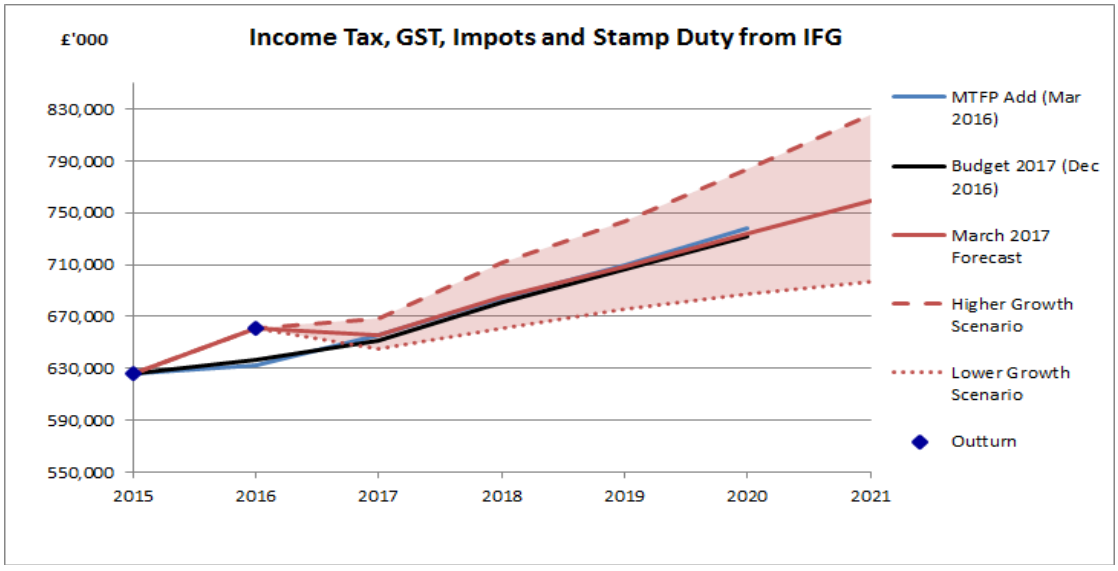
Range of Forecasts

The range around the central forecast has not changed significantly but has been updated and re-modelled to reflect the revised range of economic assumptions.

Figure 2: Range of Income Forecasts from Taxation and Duty (March 2017)

	Actual		March 2017 forecast				
	2015	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Higher Growth Scenario	625,804	661,478	668,787	711,463	743,466	783,819	825,371
Central Scenario	625,804	661,478	655,917	684,966	708,249	733,958	759,729
Lower Growth Scenario	625,804	661,478	644,782	660,662	675,774	687,064	697,368
Range %			4%	7%	10%	13%	17%
Range £ '000	*0*	*0*	*24,005*	*50,801*	*67,692*	*96,755*	*128,003*

Figure 3: Range of Income Forecasts from Taxation and Duty (March 2017)



4. Economic Assumptions

The economic assumptions have been updated by the FPP based on the latest local and international developments to March 2017.

The main variations to the economic assumptions used in the Budget 2017, which were based on September 2016, are summarised in **Section 5, Income Tax**, and provided in more detail in **Appendix C** to this report.

The central assumptions on which the March 2017 forecasts are based are shown at **Figure 4**.

The IFG have considered the economic assumptions from the FPP and have agreed that these assumptions be used as the basis for the income forecast modelling.

Figure 4 – FPP Revised Economic Assumptions for March 2017

FPP central scenario March 2017						Return to trend		
	2014	2015	2016	2017	2018	2019	2020	2021
Real GVA	4.9	2.2	1.5	1.0	0.0	0.0	0.0	0.0
RPI	1.6	0.6	1.7	2.7	3.0	3.3	3.3	3.3
RPIY	1.6	0.6	1.7	2.7	3.0	3.0	3.0	3.0
Nominal GVA	6.6	2.9	3.2	3.7	3.0	3.0	3.0	3.0
Company profits	12.3	-0.7	2.8	3.7	3.0	3.0	3.0	3.0
Financial services profits	19.4	-7.6	2.6	4.4	3.0	3.0	3.0	3.0
Compensation of employees	2.1	5.9	3.6	3.7	3.0	3.0	3.0	3.0
Employment	2.3	1.9	1.5	0.8	0.0	0.0	0.0	0.0
Average earnings	2.6	1.8	2.1	2.9	3.0	3.0	3.0	3.0
Interest rates (%)	0.5	0.5	0.4	0.3	0.4	0.6	0.8	1.0
House prices	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0

Figure 5 – Variations in FPP Economic Assumptions from March 2017 to September 2016

Variance March 2017 to September 2016						Return to trend	
	2014	2015	2016	2017	2018	2019	2020
Real GVA	0.0	1.3	1.1	1.0	0.0	0.0	0.0
RPI	0.0	0.0	-0.5	-0.6	0.0	0.0	0.0
RPIY	0.0	0.0	-0.6	-0.7	0.0	0.0	0.0
Nominal GVA	0.0	1.4	0.5	0.3	0.0	0.0	0.0
Company profits	0.0	2.0	0.0	0.8	0.0	0.0	0.0
Financial services profits	0.0	-0.1	0.0	1.6	0.0	0.0	0.0
Compensation of employees(a)	0.0	0.6	1.0	-0.1	0.0	0.0	0.0
Employment	0.0	0.0	1.0	0.8	0.0	0.0	0.0
Average Earnings	0.0	0.0	0.0	-0.9	0.0	0.0	0.0
Interest rates (%)	0.0	0.0	0.0	0.2	0.3	0.4	0.4
House prices	0.0	0.0	0.0	0.0	0.0	0.0	0.0

5. Income Tax Revised Forecast 2017-2021

Introduction

This note provides revised forecasts to update the IFG's Budget 2017 (September 2016) forecast. The revised forecast is based on:

- Updated FPP economic assumptions for 2016-2018.
- Outturn income tax data for year of assessment 2015.
- Updated data on personal and corporate income tax for year of assessment 2016.
- Emerging findings from the external review of the personal income tax forecasting model.

The rest of the note is set out as follows:

- Overview of the FPP's revised economic assumptions that have been used to update the income tax forecast, and the reasons for any changes.
- Information from the Taxes Office on the most recent outturn data.
- Revised output from the income tax forecast model on the basis of new data, new economic assumptions and proposals from the external review of the forecasting model.
- Further analysis of Current Year Basis (CYB) tax revenues from 2006, together with a proposed revision to the CYB forecast adjustment for 2017-2021.

Revised economic assumptions

The FPP's updated economic assumptions have been used in the tax model to update the income tax forecast. The economic assumptions were published on 1 March 2017.
When compared to the previous (August 2016) assumptions, the main changes are:

- **Financial services profits** – faster growth expected in 2017 given the latest expectations in the Business Tendency Survey.
- **Inflation –** outturn for 2016 and expectations for 2017 are lower than previously forecast (although still rising).
- **Earnings –** slower growth expected for 2017, reflecting lower inflation.
- **Employment** – faster growth expected for 2016 and 2017, to reflect recent strong performance.
- **UK policy interest rates –** expected to be higher throughout 2017-2020, reflecting changes in market expectations.

The changes in these assumptions have had knock-on effects on the nominal and real economic growth (GVA) assumptions, with real growth expected to be around 1 per cent faster in 2016 and 2017.

There are no changes to the assumptions for any of the economic variables in 2018 to 2020, other than slightly higher expectations for interest rates.

Updated information from Taxes Office

Outturn data for Year of Assessment (YOA) 2015

Personal tax
Personal income tax was £4m higher than forecast for YOA15, reflecting earned and unearned income being £37m higher than forecast, and yield largely in line with forecast. Within earned

income, employment income was £7m higher than expected (around 0.5 per cent above forecast), sole trader income £6m higher and 'other earned income' was £7m higher (particularly due to significant increases in 'other foreign employment income'). Pension income was largely in line with forecast.

Within unearned income, there have been significant swings in some of the types of income:

1. Income from bank interest fell £9m (26%) but UK bank interest increased by £6m (100%). This mostly relates to non HVR taxpayers so is likely to have had an impact on personal tax collected. Both movements have been assumed to remain in the base.
2. Dividend income rose by £4m (10%) but UK dividends fell by £23m (40%). However, excluding HVR taxpayers, UK dividends have been much flatter in recent years. No adjustment has been made to the YOA15 base.
3. Non-UK unearned income increased by £15m (50%). £6m of this was due to HVR taxpayers.
4. Jersey property income has grown by £7m (9%), following a £9m increase the year before.
5. Distributions fell by £16m (8%). The new distributions tax regime is only in its third year, and as expected income has proven volatile to date.

Overall, earned income (employment, pension, sole trader and other earned income) grew by 5% (higher than the forecast 4%); while unearned income grew by 3% (against a forecast of 2%).

Corporate tax
Corporate income tax revenue was £3m higher than forecast for YOA15, within which taxable income fell significantly but the yield increased. After taking account of capital allowances and after offsetting carried forward losses, taxable profits from the financial services sector fell by 15%, while property companies' profits grew by 7% and utility companies by 15%.

Provisional data for YOA16

While ITIS data for 2016 shows a significant increase in personal tax on the previous year, IFG has previously found that initial estimates from ITIS are often subject to significant revision. Therefore this has not been included in the forecast.

The Taxes Office has produced provisional figures for corporate tax for YOA16, based on latest company submissions. This suggests a £16m (17%) fall in corporate tax when compared to YOA15. However, while the appeal period for these estimates has past, the provisional figure is likely to be subject to significant change as assessments are finalised over the course of this year – with past experience suggesting that revisions are most often upward from this point.

Updated income tax forecast

Personal tax
New outturn data, provisional data for 2017 and new economic assumptions have been used to update the income tax forecasting model.

Before considering the impact of the review of the tax forecasting model, the forecast for personal income tax would increase by around £5m-£7m in each year of the forecast period, when compared to the Budget 2017 forecast.

New data
The outturn data for YOA15 results in approximately £5m additional income for the initial years, and £6m for 2020.

New assumptions
The combination of new economic assumptions and updated relationships for earned and unearned income results in the forecast being increased by £2m each year when compared to the previous forecast. The main impact is the increase in employment forecasts, which adds around £5m per year but which is partly offset by lower earnings forecasts. The higher interest rate forecast further increases the forecast by around £1m each year by the end of the period.

New yield calculations
In order to forecast tax collectable, assumptions have been made about how the yield will change in future - based on data for the value of the various allowances claimed in YOA15, plus assumptions about how these might increase in future. This has been done on two bases:

1. The estimated yield assumes that exemption thresholds grow in line with RPI; and the number of taxpayers claiming them is forecast to grow in line with employment growth. Most other allowances are assumed to remain flat, but again with number of claimants growing in line with employment growth. The impact of budget policy changes are applied such as the freezing and grandfathering of age-enhanced exemptions, phasing out of mortgage interest tax relief, the increase in childcare allowance and the increase in the second earner's income allowance.
    - This results in yield growing from 12.9% in YOA15 to 13.5% by YOA20. This increase is partly the result of fiscal drag (i.e. that the value of allowances grows more slowly than income) and partly the result of some budget policy changes which are expected to reduce the value of allowances over the forecast period (in particular the freezing and grandfathering of age-enhanced exemptions and phasing out of mortgage interest tax relief).
2. The trend yield assumes that the value of the various allowances for marginal rate taxpayers will grow at their recent average rate of growth (with standard rate allowances assumed to grow in line with the estimated yield assumptions).
    - This was used in the IFG's most recent income tax forecast from May 2016, and the update in September 2016 as it was considered a prudent approach, due to the very strong growth in yield which was suggested by the estimated yield approach. Updating this approach to include YOA15 data results in a slower expected growth in yield, reaching 13.4% by YOA20.

While the results of the two approaches are quite similar, IFG has chosen to continue to use the more prudent approach, i.e. assuming that allowances grow at their recent trend rate. This is a lower yield than previously assumed – due to YOA15 seeing a faster increase in the value of allowances than the recent average.

On this basis, the result of the revised yield assumptions is to reduce the personal tax forecast from YOA18, reaching £3m by YOA20.

If the estimated yield assumptions were used, this would see an additional £2m in YOA16, rising to £4m by YOA19 (when compared to the trend yield assumptions).

Model Review

Oxera were asked to consider whether they could develop any alternative approaches to forecast either employment or pension income, or whether they could suggest any amendments to the way in which yield is forecast. Final reports from Oxera have been included at **Appendix E** and **Appendix F** but the impact of each is summarised below.

Employment income
Oxera considered both an aggregate approach (looking at the impact of changes in economic variables for the economy as a whole) and a disaggregated approach (looking at the impact on different sectors). Under the disaggregated approach, it was found that over 90% of the past variation in taxable employment income could be explained by variations in compensation of employees for finance and non-finance sectors, plus profits for the finance sector (as an indicator of changes in bonuses which may be taxed at a higher effective rate).

The impact of using this new regression would be to reduce the forecast for personal tax by around £1m in YOA16, rising to £4m by YOA20.

Pension income
Oxera's analysis has also led to a proposed new approach to forecasting pension income, based again on regression analysis. This finds that over 80% of the past variation in taxable pension income can be explained by variations in earnings growth and the growth rate of the over 65 population.

The impact of implementing this would be limited in the initial years but would increase the forecast for personal tax by around £1m in YOA18 and YOA19, and £2m for YOA20.

Yield
Oxera has considered the approach used to develop assumptions for the future path of the yield and at this stage has not identified any improvements that could be made to the current approach.

The impact of using the two equations developed by Oxera are set out in **Figure 6.** When compared to the previous IFG forecast from September 2016, the personal tax forecast is £6m higher in 2017 but grows more slowly over the following years such that the new forecast for 2020 would be largely in line with the previous forecast.

Figure 6: Updated personal tax forecast

	Outturn	Forecast				
	2016	2017	2018	2019	2020	2021
	£m	£m	£m	£m	£m	£m
Personal tax						
Budget 2017 forecast	**375**	**392**	**414**	**435**	**456**	
New outturn data	4	5	5	5	6	
New assumptions[1]		2	2	2	2	
New yield calculation		0	-1	-2	-3	
Impact of review of tax forecasting model		-1	-1	-2	-2	-2
Tax collectable (excluding: CYB adjustment)	**379**	**398**	**418**	**438**	**459**	**481**
						Some columns may not sum due to rounding
Notes:						
[1]New assumptions includes higher employment, lower earnings, lower inflation, higher interest rates and revised relationships for employment income and bank/dividend income.						
The annual CYB adjustment is agreed separately at IFG and is not part of the review of the model						

Current Year Basis adjustment to forecasts 2017-2021

Summary of CYB position

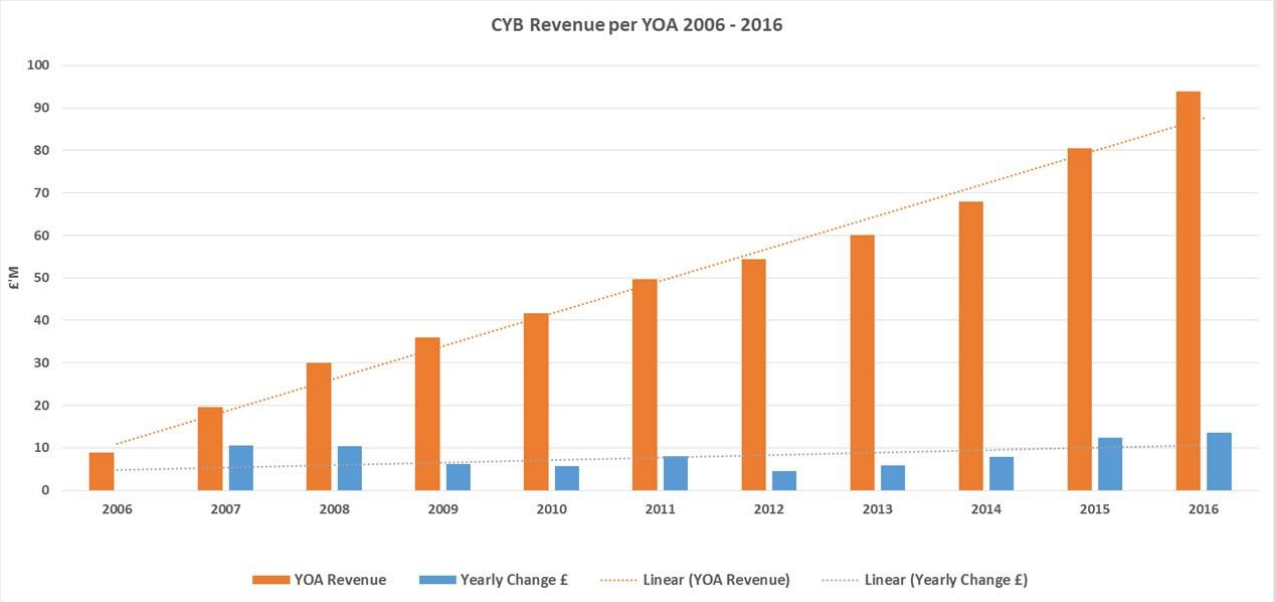
The paper at **Appendix G** summarises the extensive analysis that has been carried out by the Taxes Office to support the CYB adjustment to the personal income tax forecasts.

The main IFG forecast is derived from the personal income tax model and a review of YOA 2015 tax data to confirm existing correlations, examine any changes in trends and most recently to incorporate changes proposed by the Oxera review of the forecasting model.

The CYB adjustment recognises that following the change in accounting policy for the 2015 States Accounts there will need to be a separate assessment of the impact of the increasing CYB population that will be recognised in each year's accounts.

The Taxes Office have summarised the total CYB tax revenue each year from 2006 and also the year on year CYB increases in **Figure 7**.

Figure 7 – Total and Annual Increases in Current Year Basis (CYB) Tax 2006 to 2016



The year on year CYB movements were compared to the movement in real GVA and migration trends which showed a good correlation in most years.

The IFG were also mindful of the latest FPP economic assumptions which show real economic growth of 1.5% and 1% for 2016 and 2017 respectively, followed by a long term trend of 0% real GVA from 2018 onwards.

Proposed CYB adjustment

The IFG discussed all the new data and concluded that, based on real growth of 1% forecast for 2017, an average for the period 2013 – 2016 of £10 million (rounded) would be appropriate and consistent with FPP assumptions. From 2018 onwards, with no real GVA growth forecast, a long term trend from the 10 year rolling average of £8 million (rounded) should be assumed which would also be consistent with FPP assumptions and principles.

Corporate tax

The forecast for corporate income tax has decreased significantly over the forecast period, when compared to the previous (Budget 2017) forecast.

Corporate income tax in budget year 2016 (YOA15) was £94m - approximately £3m higher than the Budget 2017 forecast.

The latest information for 2017 suggests that corporate income tax may fall significantly – by around £16m (a further £7m relative to the previous forecast), with this predominantly driven by significant variations among 10 of the top 100 financial services companies, which total a net £17m decrease.

IFG's usual approach to forecasting corporate profits is to increase in line with the FPP's assumptions for financial services profits growth, with yield remaining constant. This would result in a forecast of £96m for corporate tax in 2017. However, given the new information that is available from current year submission by corporate taxpayers for YOA 2016, IFG has chosen to use this figure for 2017 corporate tax.

Beyond 2017, corporate taxes are assumed to grow in line with the financial services profit growth assumption, plus a one-off £3m increase due to expected changes with a particular corporate taxpayer. This sees an increase of around £6.5m in 2018, being 4.4% growth plus the £3m. Of this £6.5m, the majority (around £4m) is estimated to be in relation to known changes among the ten companies with the biggest variations in 2016:

- £6m of the reduction in tax take in 2017 is expected to be one-off adjustments and therefore will come back into the base in 2018.
- There will be a further £2m permanent reduction in tax from these companies in 2018.

The expected 4.4% growth in finance sector profits in 2017 is based on weighted aggregate responses to the December 2016 Business Tendency Survey. This is higher than the previous assumption of 2.6% and results in an increase in the forecast of £1m higher from 2018 onward.

As a result of the approval of additional Taxes Office compliance staff, additional tax revenue of £3 million per year is being proposed from 2018.

Figure 7: Changes to corporate income tax forecast since Budget 2017

	Outturn	Forecast				
	2016	2017	2018	2019	2020	2021
	£m	£m	£m	£m	£m	£m
Corporate tax						
Budget 2017 forecast	**91**	**84**	**90**	**93**	**96**	
New outturn data[2]	+3	-7	-7	-8	-8	
Taxes Office increased compliance			+3	+3	+3	+3
New FPP economic assumptions	0	0	+1	+1	+1	
Tax collectable	**94**	**77**	**87**	**89**	**92**	**94**

Some columns may not sum due to rounding

Notes:

[2]Includes lower outturn for 2016, lower expected outturn for 2017, and initial indications for 2018 onward.

Revised Income Tax Forecast 2017-2021

The net impact of the various adjustments to the income tax forecast discussed in this report are summarised in **Figure 8.**

Producing a forecast on a similar basis to previous years would result in a slight reduction in each year of the forecast with gains in personal income tax being offset by the reductions forecast for corporate income tax, particularly in 2017.

The proposals from the work carried out by Oxera on the review of the forecasting model, the proposed changes to the CYB adjustment forecast and the extra revenues to be generated by the additional compliance staff have been agreed by IFG and are also factored into the revised income tax forecast for 2017-2021.

The final position is a marginally improved 2017 and 2018 forecast moving to a small reduction from 2019 onwards, as illustrated in **Figure 8**.

Figure 8 - Revised income tax forecast 2017-2021

Income Tax (including CYB adjustment)	March 2017 Forecast				
	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000
Personal tax					
Budget 2017 forecast	**392**	**414**	**435**	**456**	
New outturn data	+5	+5	+5	+6	
New assumptions[1]	+2	+2	+2	+2	
New yield calculation	0	-1	-2	-3	
Impact of review of tax forecasting model	-1	-1	-2	-2	-2
CYB annual increase adjustment	10	8	8	8	8
Tax collectable	***408***	***426***	***446***	***467***	**489**
Corporate tax					
Budget 2017 forecast	**84**	**90**	**93**	**96**	
New outturn data[2]	-7	-7	-8	-8	
Taxes Office increased compliance		+3	+3	+3	+3
New FPP economic assumptions	0	+1	+1	+1	
Tax collectable	***77***	***87***	***89***	***92***	**94**
Bad debts	-2	-3	-3	-3	*-3*
New forecast (incl: CYB Adjustment)	***483***	***510***	***532***	***556***	**580**
Old forecast (incl: CYB adjustment)	**481**	**508**	**533**	**557**	
Difference since Budget 2017	+2	+2	-1	-1	

Some columns may not sum due to rounding

Notes:

Personal tax

[1]New assumptions includes higher employment, lower earnings, lower inflation, higher interest rates and revised relationships for employment income and bank/dividend income.

Corporate tax

[2]Includes lower outturn for 2016, lower expected outturn for 2017, and initial indications for 2018 onward.

Forecast range

The IFG previously agreed a forecast range starting at +/-2% in the first year of the forecast, rising to +/-9% by the fifth and final year of the forecast. While the IFG feels that considerable uncertainty remains, this uncertainty was built into the previous range and therefore the decision was taken to use the same range for the revised forecast.

Figure 9: Revised Forecast range 2017-2021

Forecast Ranges (£M)	March 2017 Forecast				
	2017	2018	2019	2020	2021
	£m	£m	£m	£m	£m
Upper	492	530	558	594	631
Tax collectable	**483**	**510**	**532**	**556**	**580**
Lower	474	490	506	518	529
Range as a % of central	**4%**	**8%**	**10%**	**14%**	**18%**

6. GST and ISE Revised Forecasts 2017-2021

Introduction

There are three components of the GST forecast:

- GST on purchases of goods and services on Island,
- GST on imports, and
- International Service Entity ISE) fees paid by businesses to exempt them from charging GST.

GST on purchases on Island

Good & Services Tax (GST) was introduced in 2008 and is collected by the Taxes Office. GST is collected from purchases of goods and services on the Island. Initially introduced at 3% the GST rate was increased to 5% in 2011.

The IFG considered as part of its draft MTFP 2016-2019 (June 2015) forecasts changes to the forecast modelling of GST. The previous assumptions to increase GST forecasts by RPI were replaced by assumptions reflecting information on general trends in GST relative to the overall economic situation.

Consideration has also been given to trends by individual market sector but there were no obvious correlations identified that would improve the forward forecasts.

2016 GST receipts were higher than originally forecast in the Budget 2017 (September 2017) and there is no evidence to suggest this was only linked to one off events such as the Dance World Cup and European Touch Rugby tournaments. Overall, GST in 2016 was £1 million more than outturn 2015 and £1.4 million more than forecast in Budget 2017.

It is too early to begin establishing 2017 performance, and at this time there are no one-off events expected in 2017 or beyond which might impact on the forecast. Thus, until further 2017 data is available, outturn 2016 is to be used for the March 2017 forecast base. Furthermore the recent FPP report forecasts an increase in real economic growth in 2017 to 1.0%, which is an improvement on the assumption in September 2016. Therefore in line with the policy adopted by IFG to increase GST by 2.0% in years where real economic growth is predicted, 2017 growth in GST has been increased from 0.8% to 2.0%. Forecasts of economic growth are unchanged for 2018-2021. The impact on the 2017 to 2021 GST forecast can be seen in **Figure 10**.

GST on imports

Import GST outturns have increased in recent years reflecting an increase in on-line purchases. However, the yield is quite sporadic and there is not yet enough information to produce a solid trend.

The 2016 outturn was slightly higher than expected in Budget 2017 forecast and there are no indications of a change in the trend or one off big tickets items for 2017. Therefore, the previous assumptions are maintained.

The trend of import GST will be monitored during 2017 and the IFG will reconsider any change for future forecasts at the update in September 2017.

ISE Fees

ISE Fees have been a relatively stable income stream for the States and have consistently been around £9 million per annum.

The 2016 outturn was slightly above the £9 million Budget 2017 forecast. The Budget 2017 forecast assumed £9 million of ISE fees per annum as the IFG had no reason to vary this forecast. However, there were indications that the number of such companies which pay ISE fees may reduce slightly over the next year or two.

The Taxes Office have reviewed the current position of ISE fees for 2017, based on returns to March 2017, which is a good guide to the overall position. The forecast for 2017 has been revised to £8.4 million reflecting some of the anticipated changes noted above. There is further evidence this trend may continue over the next couple of years and further small reductions have been forecast in 2018 and 2019. The IFG have asked the Taxes Office to consider a review of the structure of ISE fees in the near future.

Summary of updated forecast

Figure 10 – Summary of GST for 2016 – 2021

GST	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
GST	*71,837*	*73,274*	*73,860*	*74,451*	*75,046*	*75,647*
Import GST	*3,933*	*4,168*	*4,419*	*4,684*	*4,965*	*5,263*
ISE Fees	*9,028*	*8,400*	*8,200*	*8,000*	*8,000*	*8,000*
Total GST	***84,798***	**85,842**	**86,479**	**87,135**	**88,011**	**88,910**
Annual Growth %		*1.2%*	*0.7%*	*0.8%*	*1.0%*	*1.0%*
Budget 2017 Forecast	*83,334*	*84,120*	*84,924*	*85,747*	*86,589*	-
Variation £	*1,464*	1,722	1,555	1,388	1,422	88,910

Forecast Range

The forecast range is largely unchanged and remains based on:

- A lower range 1% below the central assumption and a higher range 1% above the central assumptions is used for forecasting net GST.
- A wider 2% range above and below the central forecast is proposed for import GST reflecting the higher trend growth assumption for this income stream.
- ISE fees have been relatively stable between years, and a 0.5% range above and below the central forecast is proposed.

The overall effect of the range of forecasts is shown in **Figure 11**.

Figure 11 – Summary of GST forecast range for 2017 – 2021

GST	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Higher	*84,798*	*87,304*	*89,032*	*90,813*	*92,649*	*94,543*
Central	***84,798***	***85,842***	***86,479***	***87,135***	***88,011***	***88,910***
Lower	*84,798*	*85,581*	*85,525*	*85,456*	*85,373*	*85,276*
Range £'000	**-**	**1,723**	**3,507**	**5,357**	**7,276**	**9,267**
Range %	***0%***	**2%**	**4%**	**6%**	**8%**	**10%**

7. Impôts Duty Revised Forecast 2017-2021

Introduction

Impôts duties are levied on a range of commodities imported to the Island. The duties on the various commodities, principally alcohol, tobacco and fuel are reviewed at the annual Budget. The duty increases for alcohol and tobacco are influenced by the strategies for particular health improvement and reduction in consumption policies rather than a policy to raise additional revenues.

The policies in that regard can be considered fairly successful based on the importation trends. These show that for most alcohol and tobacco commodities, the long-term trend is for reduced importation. There is some evidence from monitoring and feedback from retailers to suggest an increase in duty free for tobacco goods consumption but this is actively policed by Customs.

The basis of the Impôts duty forecasts is to take the 2016 outturn and to apply past importation trends to forecast the future volumes and past Budget experience to forecast future duty rates. Customs maintain records going back a number of years and on statistical advice, use a 10 year average of importation trends to forecast future volumes.

Increases in Impôts duty rates

Previously the IFG has recommended that it remains appropriate to assume that recent policies in annual Budgets would continue in the absence of any updates to the existing tobacco and alcohol and licensing strategies. Analysis of recent budgets showed that broadly RPI increases for tobacco and alcohol were common and that increases to fuel and other commodities were less likely. Consequently, the forecasts only assume RPI increases for alcohol and tobacco goods.

The 2016 Outturn was higher than the draft Budget 2017 forecast (September 2016) by £1.6 million, mainly for tobacco and alcohol commodities. It is difficult to explain why the outturn differs from the forecast as consumption of excise goods remains a matter of personal choice particularly for alcohol and tobacco products. Discussions with the trade suggest that a number of significant global sporting events like the Euros and Olympics, combined with good weather, may have influenced some increased consumption and therefore importation of alcohol and tobacco.

However, the overall trend taken over a 10 year period remains as one of decreased consumption most likely as result of health promotion and associated initiatives by the States of Strategic Public Health Unit.

<u>Variation from draft Budget 2017 (September 2016) to March 2017 forecast</u>

The forecasts have been revised and reflect:

- an adjustment for one off high import figures for alcohol in 2016
- adjustments to the 10 year average trend of all imported goods to include the 2016 outturn
- the updated FPP endorsed economic assumptions for RPI (March 2017)

Additionally the implications of Brexit should be considered against future Impôts forecasts. As the Island sets out it's own excise rates it is thought that future income forecasts will be mostly unaffected pre (present to 2019) and post Brexit (after 2019).

There is a possibility that the Customs Duty collected on goods imported from outside the European Union may be affected by a new Customs agreement between the UK and the EU and indeed other trade agreements that the UK may form with other countries (which Jersey might also be party to). However, as the amount currently involved is minimal compared to the overall revenue (approx. £145k) the impacts are not considered significant.

The Customs and Immigration Service together with other States departments are currently engaged in operational workshops with the UK government, namely HMRC, HM Treasury and the Home Office, regarding plans for Brexit. In this respect any significant factors which may affect the Impôts forecast can be brought to the attention of the IFG in future.

Figure 12: Summary of Impôts duties for 2016 – 2021

Impôts	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'001	£'002	£'003	£'004
Impôts on Spirits	5,326	5,306	5,340	5,390	5,456	5,524
Impôts on Wine	8,225	8,335	8,561	8,817	9,108	9,409
Impôts on Cider	1,034	1,068	1,108	1,151	1,201	1,255
Impôts on Beer	5,766	5,774	5,811	5,866	5,939	6,012
Impôts on Tobacco	14,609	14,923	14,560	14,247	13,982	13,721
Impôts on Fuel	21,855	22,015	22,015	22,015	22,015	22,015
Impôts on Other Goods	177	145	145	145	145	145
Vehicle Emissions Duty	1,418	1,376	1,306	1,242	1,242	1,242
Total Impôts Duties	**58,410**	**58,942**	**58,846**	**58,873**	**59,088**	**59,323**
Annual Growth %		*0.9%*	*-0.2%*	*0.0%*	*0.4%*	*0.4%*
Budget 2017 Forecast	56,787	58,049	58,009	57,922	57,723	-
Variation £'000	1,623	893	837	951	1,365	59,323

The overall variation since September 2016 are as follows:

- a slight improvement in forecasts based on the 2016 outturn importation volumes,
- an increase in duty for 2017 agreed in Budget 2017 (December 2017), the updated FPP endorsed economic assumptions for RPI (March 2017).

Forecast range

The IFG is proposing to maintain the provision of a range around the Impôts duty forecast which uses the variation around the RPI assumptions compounded by a +/-1% variation on future importation assumptions. The impact on the central forecasts is shown in **Figure 13**.

Figure 13: Summary of Impôts duties forecast range for 2017 – 2021

Impôts	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Higher	58,410	59,306	60,103	61,054	62,223	63,453
Central	**58,410**	**58,942**	**58,846**	**58,873**	**59,088**	**59,323**
Lower	58,410	58,578	57,617	56,798	56,171	55,572
Range £'000	-	**728**	**2,486**	**4,256**	**6,052**	**7,881**
Range %	*0%*	**1%**	**4%**	**7%**	**10%**	**13%**

8. Stamp Duty Revised Forecast 2017-2021

Introduction

Stamp duty is charged on property, equity and share transfer transactions according to the value of the transaction. It is also collected on Wills, Probate and Obligations. The stamp duty forecasts are separated into general stamp duty, stamp duty on probate and stamp duty on share transfer property transactions.

General Stamp Duty

The main component is duty on property and in addition the forecasts allow for a relatively fixed forecast of stamp duty on Obligations and Wills. The duty on property transactions has been particularly volatile over the last five years, falling from over £14 million in 2009 to £10.7 million in 2013, a fall of 25%, and then increasing to over £17 million in 2014, an increase of 64% and in 2015 and 2016 income of around £20 million was received.

The forecast for the MTFP 2016-2019 and Budget 2016 was based on a considerable analysis of the past years' data. This identified some key trends which informed the assumptions by the IFG for the forward forecast, in particular to identify an approach which separates the forecasts for properties under £2 million and those for higher value properties over £2 million. The forward forecasts are then produced in two parts for these two sets of data with the economic assumptions only applied to the under £2 million property transactions.

The 2016 outturn exceeded forecast and was heavily influenced by transactions of property over £2 million. Much of this increase arose in the final quarter after the September 2016 forecasts and the announcement of the Budget 2017 proposals to increase stamp duty rates over £3 million.

The specific stamp duty economic assumptions for the March 2017 forecast for house prices and housing turnover remain unchanged from the draft Budget 2017 forecasts (September 2016). However, the March 2017 forecast shows a slightly higher forecast than Budget 2017 as result of the slightly improved 2016 base trend for over £2 million transactions.

The 2017 Budget agreed proposals to increase the Stamp Duty rates for property over £3m. It is difficult to accurately estimate the amount of additional revenue which will be collected by the proposed change given the relative low volume and fairly irregular pattern of high value transactions, but an assumption of a small increase has been included in the forecasts.

Stamp Duty on Share Transfer – Land Transaction Tax (LTT)

The majority of share transfer property transactions are for flats and apartments, and likely to be lower value properties (on average) than non-share transfer property transactions. Therefore they are less likely to be subject to the anomalies and volatility seen on general property transactions.

The 2016 Outturn for Land Transaction Tax was significantly above the Budget 2017 Forecast (September 2016) wholly influenced by £2 million received from one exceptionally high value property transaction.

The proposed forecast for 2017 – 2021 has been increased slightly from the one prepared in September 2016, mainly due to a slightly improved 2016 outturn after excluding the exceptional transaction.

The seasonal variation model has also been proposed to the LTT forecasting model and should provide for better estimates for the in-year budgeting.

Probate duty

Probate duty is historically difficult to forecast. It is the result of duty payable from individuals who die and are domiciled in Jersey, or where the individual is not so domiciled but have Jersey moveable property. Between 2009 and 2015 however, the number of transactions have remained steady at broadly 2,000. Anomalies in income were seen in 2009 and 2012 due to one-off large transactions, but changes in the 2013 Budget have capped probate duty to £100,000 per estate as a competition measure to attract greater investment in the Island, so these anomalies will not be seen in future.

The 2016 outturn was £1.9 million and now provides four years of quite variable outturns since the probate cap was put in place.

The March 2017 forecast has been proposed for 2017 – 2021 based on the four-year average of £2.2 million. There is no mechanism proposed to attribute a range of forecasts to Probate.

March 2017 Revised Forecast for 2017-2021

The resulting March 2017 forecast update in **Figure 14** show a slight increase for 2017 – 2021. The proposed range assumes the methodology is largely unchanged from previous forecasts applying the House Price assumptions to appropriate elements of the Stamp Duty forecast.

Figure 14: Summary of Stamp Duty for 2016 – 2021

Stamp Duty	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Stamp Duty	24,942	24,357	25,736	26,285	26,850	27,433
Probate	1,934	2,200	2,200	2,200	2,200	2,200
Stamp Duty on Share Transfer (LTT)	3,429	1,576	1,705	1,756	1,809	1,863
Total Stamp Duty	***30,305***	**28,133**	**29,641**	**30,241**	**30,859**	**31,496**
Annual Growth %		*-7.2%*	*5.4%*	*2.0%*	*2.0%*	*2.1%*
Budget 2017 Forecast	*25,394*	*27,783*	*29,286*	*29,884*	*30,501*	-
Variation £'000	*4,911*	350	355	357	358	31,496

The 2016 stamp duty actual reflects an exceptional volume and value of over £2 million property transactions which is not expected to recur. In 2017 to 2021 the annual growth in stamp duty, excluding probate duty, reflects the economic assumptions for the increase in market turnover and house prices for these years.

Forecast range

The Group has maintained the current approach to providing a range around the Stamp Duty forecast. This uses the variation around the economic assumptions on house prices. The impact on the central forecasts is shown in **Figure 15**.

Figure 15: Summary of Stamp Duty for 2016 – 2021

Stamp Duty	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Higher	*30,305*	*30,177*	*32,328*	*33,599*	*34,947*	*36,375*
Central	***30,305***	***28,133***	***29,641***	***30,241***	***30,859***	***31,496***
Lower	*30,305*	*26,623*	*27,520*	*27,520*	*27,520*	*27,520*
Range £'000	-	**3,554**	**4,808**	**6,079**	**7,427**	**8,855**
Range %	***0%***	**13%**	**16%**	**20%**	**24%**	**28%**

9. Social Security Contributions Revised Forecast 2017-2021

The IFG for the first time has reviewed the Social Security Contributions and Supplementation Forecasts. These forecasts provide a useful check and balance for aspects of personal tax and employment income trends, although ITIS information is generally more up to date.

The detail of the Social Security contributions forecast is provided at **Appendix H**. Social Security Fund forecasts will be provided for inclusion in the draft Budget 2018 as part of the forecasts for States Funds.

The employment, unemployment and other economic assumptions are taken from the Fiscal Policy Panel assumptions produced in March 2017, consistent with the other forecasts from IFG.

10. Recommendation

The IFG presents its revised forecasts for States income derived from taxation and duty for the period 2017-2021 for March 2017, as a range around a central scenario.

In light of the continuing uncertainties identified in the outlook, the IFG would recommend that it is imperative that the Council of Ministers continues to maintain sufficient flexibility in the forecasts and in the development of the proposals for the draft Budget 2018.

States of Jersey

Economics Unit
May 2017

Appendix B

Income tax forecast detailed note to IFG

This note provides provisional figures to update the IFG's Budget 2017 forecast. The revised forecast is based on:

- Updated economic assumptions.
- Outturn income tax data for year of assessment 2015.
- Updated data on corporate tax for year of assessment 2016.
- Findings from the review of the income tax forecasting model.

The remainder of the note is set out as follows:

Section A1 describes how the forecast is carried out.

Section A2 outlines the new economic assumptions.

Section A3 outlines the new outturn data.

Section A4 sets out the new tax forecast, including the results of Oxera's analysis.

Section A5 looks at uncertainties which may affect the forecast.

There are also a number of further appendices which provide information which was used to inform the income tax forecast:

Appendix C contains an analysis of recent trends in the economy which supported the economic assumptions.

Appendix D covers recent trends in income tax revenues.

Appendix E is the external review of the approach to forecasting employment income.

Appendix F is the external review of the approach to forecasting pension income.

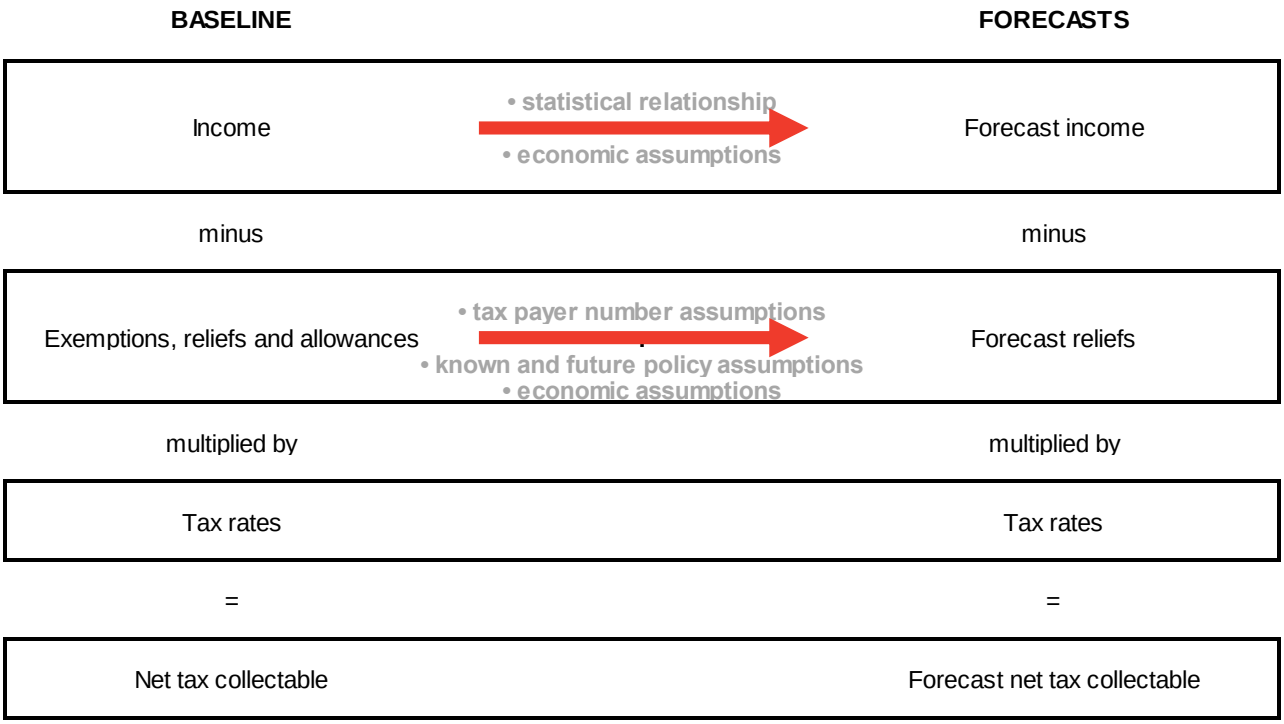
A1. How the forecast is carried out

An overview of the tax forecasting model is shown in **Figure 1**. There are two main parts to it – forecasting taxable income and forecasting the likely yield (i.e. tax collectable per £1 of income). The forecast of tax collectable is therefore the result of the forecasts of both yield and taxable income.

Taxable income is estimated over the forecast period by taking outturn data provided by the Taxes Office and projecting this forward on the basis of statistical relationships between income and various economic variables. The economic variables include gross value added (GVA), company profits, employment, average earnings, inflation and interest rates. These assumptions are overseen by the independent Fiscal Policy Panel and the most recent set of assumptions were provided in March 2017.

The yield is then forecast by taking the baseline data for the value of allowances and forecasting changes in these in line with assumptions about future tax payer numbers, inflation, interest rates and policy announced in the Budget. So, for example, the value of the basic exemption thresholds might be assumed to rise in line with RPI (to represent the annual Budget increase in the threshold) and employment growth (to represent the increase in taxpayer numbers claiming this threshold).

Figure 1: Model overview



The forecast is then adjusted for the expectation of the size of bad debts in the future to arrive at a final forecast for income tax revenue.

In order to reflect the fact that there is significant uncertainty in the forecast, a central forecast is produced with a range, with the emphasis on the range rather than the point estimates.;

A2. New economic assumptions

The Fiscal Policy Panel's (FPP) updated economic assumptions (**Figure 2**) have been used in the tax model to update the income tax forecast. The economic assumptions were published on 1 March 2017. The FPP's accompanying letter to the Treasury Minister can be found on the FPP web-site www.gov.je/fiscalpolicypanel

When compared to the previous (August 2016) assumptions, the main changes are:

Financial services profits – faster growth expected in 2017 given the latest expectations in the Business Tendency Survey.

Inflation – outturn for 2016 and expectations for 2017 are lower than previously (although still rising).

Earnings – slower growth expected for 2017, reflecting lower inflation.

Employment – faster growth expected for 2016 and 2017, to reflect recent strong performance.

UK policy interest rates – expected to be higher throughout 2017-2020, reflecting changes in market expectations.

The changes in these assumptions have had knock-on effects on the nominal and real economic growth (GVA) assumptions, with real growth expected to be around 1 per cent faster in 2016 and 2017.

There are no changes to the assumptions for any of the economic variables in 2018 to 2020, other than slightly higher expectations for interest rates.

Figure 2: Final economic assumptions used (% change, unless otherwise stated)
Boxed numbers are outturns

	2014	2015	2016	2017	2018	Return to trend 2019	2020
Real GVA	4.9	2.2	1.5	1.0	0.0	0.0	0.0
RPI	1.6	0.6	1.7	2.7	3.0	3.3	3.3
RPIY	1.6	0.6	1.7	2.7	3.0	3.0	3.0
Nominal GVA	6.6	2.9	3.2	3.7	3.0	3.0	3.0
Company profits	12.3	-0.7	2.8	3.7	3.0	3.0	3.0
Financial services profits	19.4	-7.6	2.6	4.4	3.0	3.0	3.0
Compensation of employees	2.1	5.9	3.6	3.7	3.0	3.0	3.0
Employment	2.3	1.9	1.5	0.8	0.0	0.0	0.0
Average earnings	2.6	1.8	2.1	2.9	3.0	3.0	3.0
Interest rates (%)	0.5	0.5	0.4	0.3	0.4	0.6	0.8
House prices	3.0	4.0	4.0	3.0	3.0	3.0	3.0

Financial services profit growth

Provisional figures for financial services profits growth in 2015 were already known at the time of the last FPP economic assumptions in August 2016. This has now been confirmed as a fall of around 7½%.

The forecast has not changed for 2016 or 2018-2020. The assumption for 4.4% growth in 2017 is based on a weighted average of the finance sector's profit expectations recorded in the Business Tendency Survey December 2016.

Inflation

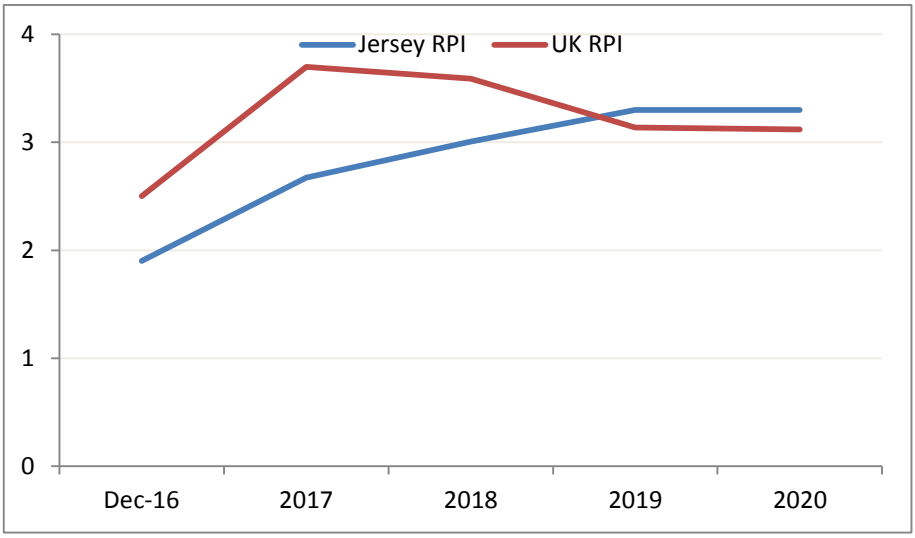
The inflation assumptions were updated to reflect the outturn for December 2016 and the latest UK policy interest rate assumptions. The outturn for RPI inflation was 0.5 percentage points lower than expected for 2016, and the new assumptions are for a slower return to trend.

Lower expected inflation has been reflected in lower expectations for increases in average earnings in 2016 and 2017.

Jersey and UK RPI inflation have moved together in recent years but at times can be significantly different (and are measured on a slightly different basis), but the path of the inflation assumptions show a scale of increase broadly similar to the OBR UK's inflation outlook at the time, albeit Jersey started from a lower point in the most recent figures available at the time (1.9% in December 2016). This similar path is to be expected as there are some common factors, such as trends in global prices and in the value of sterling, affecting both (**Figure 3**).

Figure 3: Jersey and UK inflation (annual % change in the RPI over previous year)

Annual averages	2013	2014	2015	2016	2017	2018	2019	2020
Jersey	1.5	1.6	0.6	1.7	2.7	3.0	3.3	3.3
UK	3.0	2.4	1.0	1.8	3.7	3.6	3.1	3.1



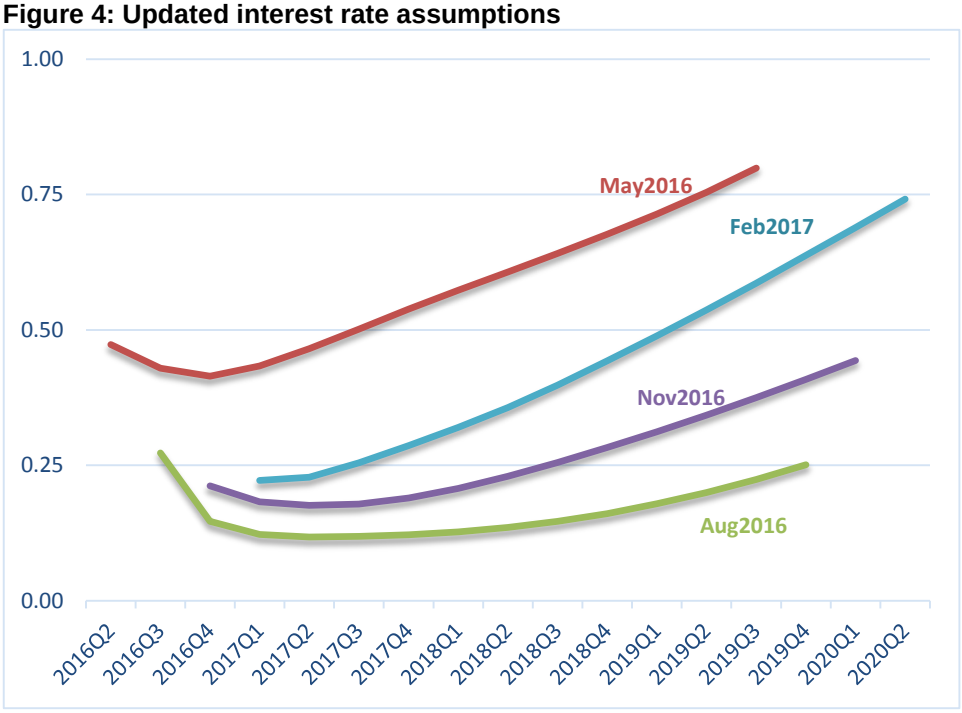
Sources: UK: Office of National Statistics and OBR forecasts; Jersey: Statistics Unit and FPP economic assumptions

Since the FPP's economic assumptions were published, the Statistics Unit have released data which show RPI inflation grew to 2.9% in March 2017. This increase was in line with expectations and brings Jersey's inflation rate slightly higher than the FPP assumption for 2017 as a whole.

UK policy interest rate

The FPP's updated interest rate assumptions are based on the financial market's expectations published alongside the Bank of England's February 2017 Inflation Report (**Figure 4**). Expectations for interest rates initially moved downward after the Bank's August 2016 rate cut, with markets anticipating a further cut. This has subsequently changed, with the most recent (February 2017) expectations being for a slow increase over the next three years. However, expectations remain below their pre-EU-referendum levels.

Figure 4: Updated interest rate assumptions



Source: Bank of England Inflation Report February 2017.

Employment

Employment in June 2016 was 2.1% higher than a year before, reaching a new record high. Due to this strong outturn, the FPP increased their assumption for 2016 average employment growth by 1 percentage point to 1.5%. Since the FPP's economic assumptions were published, data is now available which suggests that FTE employment grew at 2% in 2016.

The previous economic assumptions assumed no employment growth in 2017 or 2018. The 2017 assumption has been increased to 0.75%, to account for the stronger than expected recent growth.

A3. Updated information from Taxes Office

Outturn data for YOA15

Personal tax

Personal income tax was £4m higher than forecast for YOA15. Taxable income (earned and unearned) was £37m higher than forecast, and yield was largely in line with forecast.

Within earned income, employment income was £7m higher than expected (around 0.5 per cent above forecast), sole trader income £6m higher and 'other earned income' was £7m higher (particularly due to significant increases in 'other foreign employment income'). Pension income was largely in line with forecast.

Within unearned income, there have been significant swings in some of the types of income:

1. Income from bank interest fell £9m (26%) but UK bank interest increased by £6m (100%). This mostly relates to non HVR taxpayers so is likely to have had an impact on personal tax collected. Both movements have been assumed to remain in the base.
2. Dividend income rose by £4m (10%) but UK dividends fell by £23m (40%). However, excluding HVR) taxpayers, UK dividends have been much flatter in recent years. No adjustment has been made to the YOA15 base.
3. Non-UK unearned income increased by £15m (50%). £6m of this was due to HVR taxpayers.
4. Jersey property income has grown by £7m (9%), following a £9m increase the year before.
5. Distributions fell by £16m (8%). The new distributions tax regime is only in its third year, and income has proven volatile to date.

Overall, earned income (employment, pension, sole trader and other earned income) grew by 5% (higher than the forecast 4%); while unearned income grew by 3% (against a forecast of 2%).

Corporate tax

Corporate income tax was £3m higher than forecast for YOA15. Taxable income fell significantly but yield increased. After taking account of capital allowances and after offsetting carried forward losses, taxable profits from the financial services sector fell by 15%, while property companies' profits grew by 7% and utility companies by 15%.

Provisional data for YOA16

While ITIS data for 2016 show a significant increase in personal tax on the previous year, IFG has previously found that initial estimates from ITIS are often subject to significant revision. Therefore this has not been included in the forecast.

The Taxes Office has produced provisional figures for corporate tax for YOA16, based on information currently available from estimates. This suggests a £16m (17%) fall in corporate tax when compared to YOA15. However, while the appeal period for these estimates has past, the provisional figure is likely to be subject to significant change as assessments are finalised over the course of this year – with past experience suggesting that revisions are most often upward from this point.

A4. Updated income tax forecast

Personal tax

New outturn data, provisional data for 2017 and new economic assumptions have been used to update the income tax forecasting model.

Before considering the impact of the review of the tax forecasting model, the forecast for personal income tax would increase by around £5m-£7m in each year of the forecast period, when compared to the Budget 2017 forecast.

Figure 5: Changes to personal income tax forecast since Budget 2017

	Outturn	Forecast				
	2016	2017	2018	2019	2020	2021
	£m	£m	£m	£m	£m	£m
Personal tax						
Budget 2017 forecast	**375**	**392**	**413**	**435**	**456**	
New outturn data	+4	+5	+5	+5	+6	
New assumptions[1]		+2	+2	+2	+2	
New yield calculation		0	-1	-2	-3	
Tax collectable (excluding: CYB adjustment)	**379**	**399**	**419**	**440**	**461**	**483**
						Some columns may not sum due to rounding
Notes:						
[1]New assumptions includes higher employment, lower earnings, lower inflation, higher interest rates and revised relationships for employment income and bank/dividend income.						

New data

The new data used in the forecast have been described in **Section A3**. The outturn data for YOA15 results in approximately £5m additional income for the initial years, and £6m for 2020.

New assumptions

The combination of new economic assumptions (outlined in **Section A1**) and updated relationships for earned and unearned income results in the forecast being increased by £2m each year when compared to the previous forecast. The main impact is the increase in employment forecasts, which adds around £5m per year but which is partly offset by lower earnings forecasts. The higher interest rate forecast further increases the forecast by around £1m/year by the end of the period.

New yield calculations

In order to forecast tax collectable, assumptions have been made about how the yield will change in future - based on data for the value of the various allowances claimed in YOA15, plus assumptions about how these might increase in future. This has been done on two bases:

1. The ***estimated yield*** assumes that exemption thresholds grow in line with RPI; and the number of taxpayers claiming them is forecast to grow in line with employment growth. Most other allowances are assumed to remain flat, but again with number of claimants growing in line with employment growth. The impact of budget policy changes are applied such as the freezing and grandfathering of age-enhanced exemptions, phasing out of mortgage interest tax relief, the increase in childcare allowance and the increase in the second earner's income allowance.

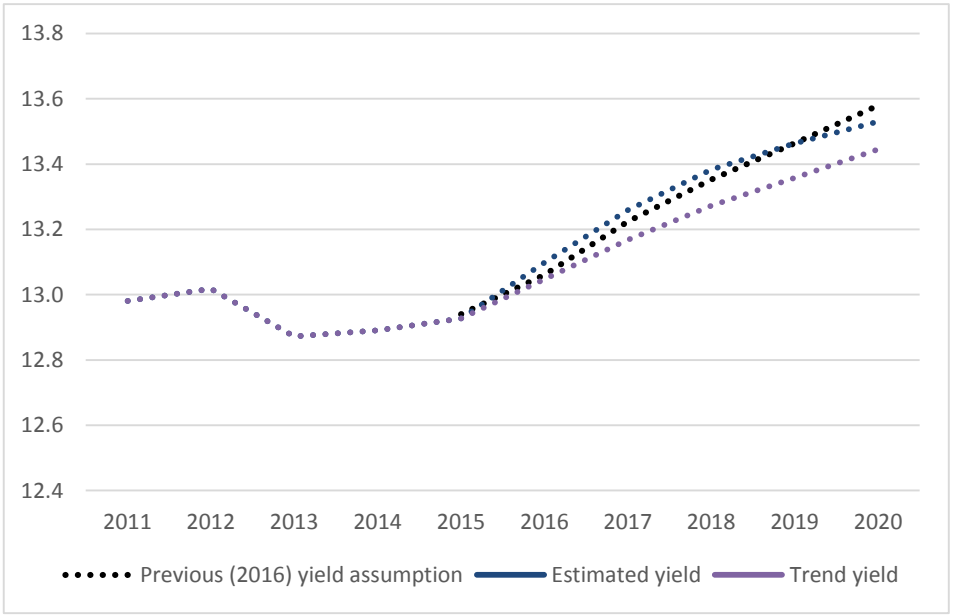
   This results in yield growing from 12.9% in YOA15 to 13.5% by YOA20. This increase is partly the result of fiscal drag (i.e. that the value of allowances grows more slowly than income) and partly the result of some budget policy changes which are expected to reduce the value of allowances over the forecast period (in particular the freezing and grandfathering of age-enhanced exemptions and phasing out of mortgage interest tax relief).

2. The ***trend yield*** assumes that the value of the various allowances for marginal rate taxpayers will grow at their recent average rate of growth (with standard rate allowances assumed to grow in line with the estimated yield assumptions).

   This was used in the IFG's most recent income tax forecast from May 2016, and the update in September 2016 as it was considered a more prudent approach than the very strong growth in yield which was suggested by the estimated yield approach. Updating this approach to include YOA15 data results in a slower expected growth in yield, reaching 13.4% by YOA20.

Figure 6 compares the yield assumptions under each approach to the previous yield assumption used by the IFG.

Figure 6: Comparison of different approaches to forecast personal tax yield



While the results of the two approaches are quite similar, IFG has chosen to continue to use the more prudent approach, i.e. assuming that allowances grow at their recent trend rate (the purple lower line in Figure 6). This is a lower yield than previously assumed – due to YOA15 seeing a faster increase in the value of allowances than the recent average.

On this basis, the result of the revised yield assumptions is to reduce the personal tax forecast from YOA18 onward, reaching £3m by YOA20.

If the estimated yield assumptions were used, this would see an additional £2m in YOA16, rising to £4m by YOA19 (when compared to the trend yield assumptions).

Model Review

External consultants Oxera were asked to consider whether they could develop any alternative approaches to forecast either employment or pension income, or whether they could suggest any amendments to the way in which yield is forecast. Final reports from Oxera have been included at Appendix E and Appendix F but the impact of each is summarised below.

Employment income

Oxera considered both an aggregate approach (looking at the impact of changes in economic variables for the economy as a whole) and a disaggregated approach (looking at the impact of different sectors). Under the disaggregated approach, it was found that over 90% of the past variation in taxable employment income could be explained by variations in compensation of employees for finance and non-finance sectors, plus profits for the finance sector (as an indicator of changes in bonuses which may be taxed at a higher effective rate).

The impact of using this new regression would be to reduce the forecast for personal tax by around £1m in YOA16, rising to £4m by YOA20.

Pension income

Oxera's analysis has also led to a proposed new approach to forecasting pension income, based again on regression analysis. This finds that over 80% of the past variation in taxable pension income can be explained by variations in earnings growth and the growth rate of the over 65 population.

The impact of implementing this would be limited in the initial years but would increase the forecast for personal tax by around £1m in YOA18 and YOA19, and £2m for YOA20[1].

Yield

Oxera has considered the approach used to develop assumptions for the future path of the yield and at this stage has not identified any improvements that could be made to the current approach.

The impact of using the two equations developed by Oxera are set out in Figure 7. When compared to the previous IFG forecast from September 2016, the personal tax forecast is £6m higher in 2017 but grows more slowly over the following years such that the new forecast for 2020 would be largely in line with the previous forecast.

Figure 7: Personal tax forecast (after the impact of review of forecasting model)

	Outturn	Forecast				
	2016	2017	2018	2019	2020	2021
	£m	£m	£m	£m	£m	£m
Personal tax						
Budget 2017 forecast	**375**	**392**	**413**	**435**	**456**	
New outturn data	4	5	5	5	6	
New assumptions[1]		2	2	2	2	
New yield calculation		0	-1	-2	-3	
Impact of review of tax forecasting model		-1	-1	-2	-2	-2
Tax collectable (excluding: CYB adjustment)	**379**	**398**	**418**	**438**	**459**	**481**
						Some columns may not sum due to rounding
Notes:						
[1]New assumptions includes higher employment, lower earnings, lower inflation, higher interest rates and revised relationships for employment income and bank/dividend income.						
The annual CYB adjustment is agreed separately at IFG and is not part of the review of the model						

While IFG has chosen to include the impact of the new equations developed by Oxera in the current forecast of personal tax, it is proposed to continue monitoring both approaches in future forecasts.

Future considerations

The Economics Unit and Oxera have also consider that it could be worthwhile exploring the possibility of developing a more 'bottom-up' approach to forecasting – i.e. one which considers changes in the tax collectable from groups of taxpayers separately, rather than as an aggregate. The Economics Unit will therefore scope out a second stage to the Model Review that could draw

[1] This assumes annual growth in the 65+ population of 2.5% - consistent with the Statistics Unit projection for 13% growth in this population between 2015 and 2020.

on the detailed information now available from the Taxes Office at the individual level and explore the feasibility of developing a bottom up approach that could complement the existing top-down approach, particularly for employment and pension income. As this is a major undertaking the Economics Unit will agree a terms of reference and timescales with the IFG in due course.

Corporate tax

The forecast for corporate tax has decreased significantly over the forecast period, when compared to the previous (Budget 2017) forecast.

Figure 8: Changes to corporate income tax forecast since Budget 2017

	2016	2017	2018	2019	2020	2021
	£m	£m	£m	£m	£m	£m
Corporate tax						
Budget 2017 forecast	**91**	**84**	**90**	**93**	**96**	
New outturn data[2]	+3	-7	-7	-8	-8	
Taxes Office increased compliance			+3	+3	+3	+3
New FPP economic assumptions	0	0	+1	+1	+1	
Tax collectable	**94**	**77**	**87**	**89**	**92**	**94**

Some columns may not sum due to rounding

Notes:

[2]Includes lower outturn for 2016, lower expected outturn for 2017, and initial indications for 2018 onward.

Corporate tax in budget year 2016 (YOA15) was £94m - approximately £3m higher than the Budget 2017 forecast.

The latest information for 2017 suggests that corporate tax may fall significantly – by around £16m (a further £7m relative to the previous forecast), with this thought to be the result of significant increases or falls among ten financial services companies which total a net £17m decrease. IFG's usual approach to forecasting corporate profits is to increase in line with the FPP's assumptions for financial services profits growth, with yield remaining constant. This would result in a forecast of £96m for corporate tax in 2017. However, given the new information that is available from estimates IFG has chosen to use this figure for 2017 corporate tax.

Beyond 2017, corporate taxes are assumed to grow in line with the financial services profit growth assumption, plus a one-off £3m increase due to expected changes with an individual taxpayer. This sees an increase of around £6.5m in 2018, being 4.4% growth plus the £3m. Of this £6.5m, the majority (around £4m) is estimated to be in relation to known changes among the ten companies with the biggest variations in 2016:

- £6m of the reduction in tax take in 2017 is expected to be one-off adjustments and therefore will come back into the base in 2018.
- There will be a further £2m permanent reduction in tax from these companies in 2018.

The expected 4.4% growth in finance sector profits in 2017 is based on weighted aggregate responses to the December 2016 Business Tendency Survey. This is higher than the previous assumption of 2.6% and results in an increase in the forecast of £1m higher from budget year 2018 onward.

Taxes Office – increased compliance

The Taxes Office have recently received approval for 3 additional compliance officers and based on recruitment of appropriately qualified staff the proposal is that this addition to the business tax team during 2017 should generate additional revenues of £3 million per year from 2018.

New forecast

The net impact before considering the impact of the review of the tax forecasting model is a relatively unchanged forecast from 2017, with personal tax higher but corporate tax lower than the Budget 2017.

Figure 9: Revised income tax forecast (before impact of the review of the tax forecasting model)

Income Tax	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Personal tax						
Budget 2017 forecast	375	**392**	**413**	**435**	**456**	
New outturn data	+4	+5	+5	+5	+6	
New assumptions[1]		+2	+2	+2	+2	
New yield calculation		0	-1	-2	-3	
Tax collectable	***379***	***399***	***419***	***440***	***461***	**483**
Corporate tax						
Budget 2017 forecast	91	**84**	**90**	**93**	**96**	
New outturn data[2]	+3	-7	-7	-8	-8	
Taxes Office increased compliance			+3	+3	+3	+3
New FPP economic assumptions		0	+1	+1	+1	
Tax collectable	***94***	***77***	***87***	***89***	***92***	**94**
Bad debts	-2	-2	-3	-3	-3	*-3*
New forecast (excluding CYB adjustment)	***471***	***474***	***503***	***526***	***550***	**574**
Old forecast (excluding CYB adjustment)	*464*	**474**	**501**	**526**	**550**	
Difference since Budget 2017	+7	+0	+2	+0	+0	

Some columns may not sum due to rounding

Notes:

[1]New assumptions includes higher employment, lower earnings, lower inflation, higher interest rates and revised relationships for employment income and bank/dividend income.

[2]Includes lower outturn for 2016, lower expected outturn for 2017, and initial indications for 2018 onward.

The annual CYB adjustment is agreed separately at IFG and is not part of the review of the model

However, if the impact of the review of the tax forecasting model is included, this reduces the forecast from 2017 by £1 million and a reduction of £2 million from 2019.

Figure 10: Revised income tax forecast (after the impact of the review of the tax forecasting model)

Income Tax	Outturn	March 2017 Forecast				
	2016	2017	2018	2019	2020	2021
	£'000	£'000	£'000	£'000	£'000	£'000
Personal tax						
Budget 2017 forecast	375	**392**	**413**	**435**	**456**	
New outturn data	+4	+5	+5	+5	+6	
New assumptions[1]		+2	+2	+2	+2	
New yield calculation		0	-1	-2	-3	
Impact of review of tax forecasting model		-1	-1	-2	-2	-2
Tax collectable	***379***	***398***	***418***	***438***	***459***	**481**
Corporate tax						
Budget 2017 forecast	91	**84**	**90**	**93**	**96**	
New outturn data[2]	+3	-7	-7	-8	-8	
Taxes Office increased compliance			+3	+3	+3	+3
New FPP economic assumptions		0	+1	+1	+1	
Tax collectable	***94***	***77***	***87***	***89***	***92***	**94**
Bad debts	-2	-2	-3	-3	-3	*-3*
New forecast (excl: CYB adjustment)	***471***	***473***	***502***	***524***	***548***	**572**
Old forecast (excl; CYB adjustment)	*464*	**474**	**501**	**526**	**550**	
Difference since Budget 2017	+7	-1	+1	-2	-2	

Some columns may not sum due to rounding

Notes:

Personal tax

[1]New assumptions includes higher employment, lower earnings, lower inflation, higher interest rates and revised relationships for employment income and bank/dividend income.

The annual CYB adjustment is agreed separately at IFG and is not part of the review of the model

Corporate tax

[2]Includes lower outturn for 2016, lower expected outturn for 2017, and initial indications for 2018 onward.

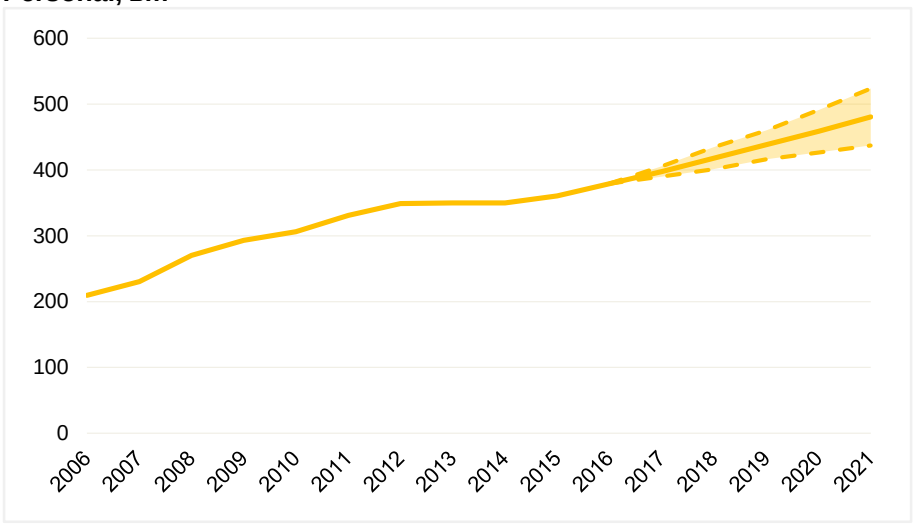
Forecast range

The IFG previously agreed a forecast range starting at +/-2% in the first year of the forecast, rising to +/-9% by the fifth and final year of the forecast. The impact of continuing this range has been illustrated below:

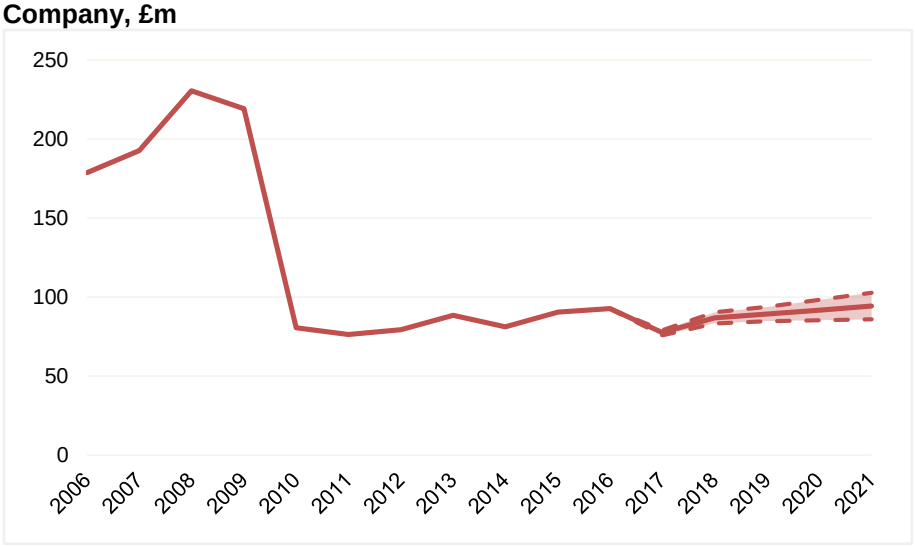
Charts of the forecast are shown in **Figure 11**.

Figure 11: Income tax forecast by taxpayer type

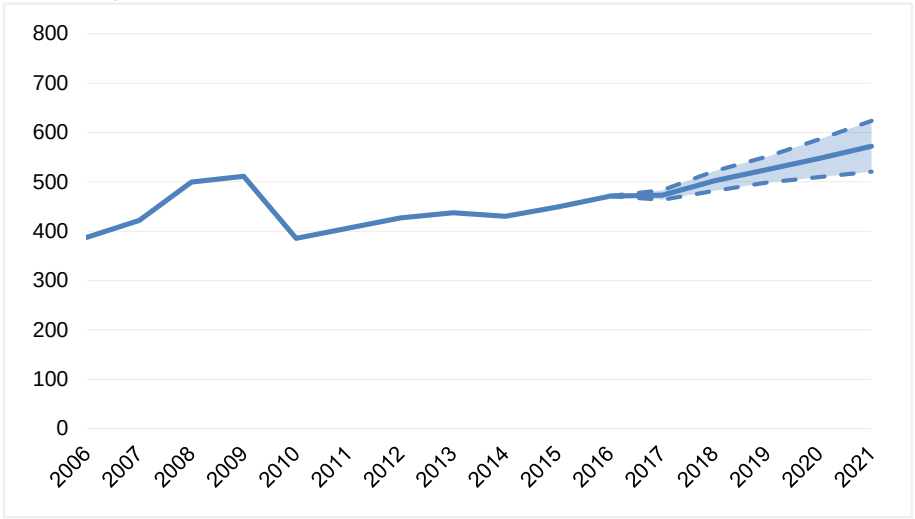
Personal, £m



Company, £m



Total tax, £m



A5. Uncertainties and sensitivities

Economic growth rate

The impact of economic growth on income tax revenue depends on the exact nature of the economic growth and the extent to which it increases personal employment income and taxable company profits.

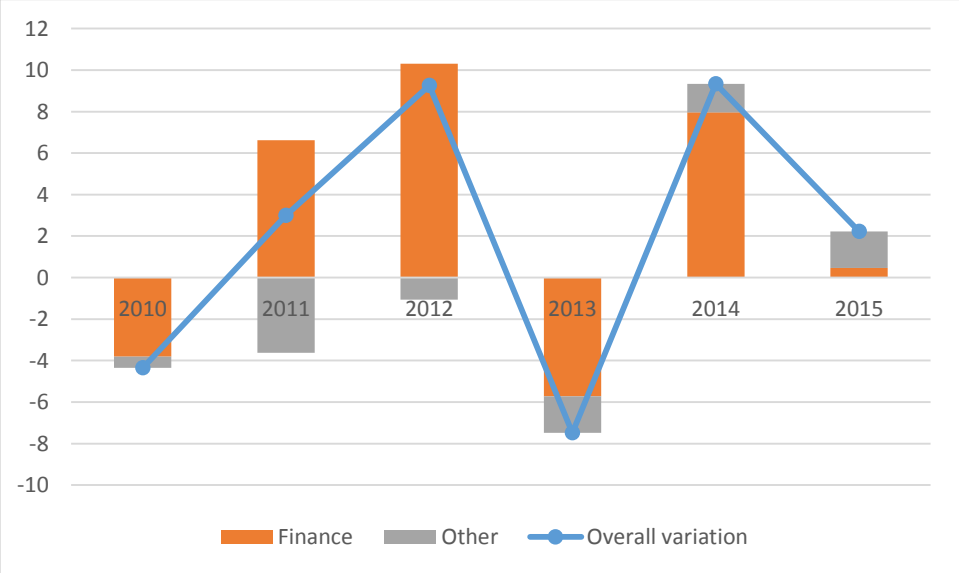
If economic growth were to be 1% higher as a result of both employment income and taxable profits increasing by 1%, this would result in an additional £2m of income tax revenue. A similar decrease in the economic growth rate assumption would have the opposite effect.

If economic growth were to be 1% higher as a result of growth in corporate profits, and assuming taxable corporate profits increased by the same proportion, this would result in an additional £3m of tax.

Corporate profits

There has been considerable variation in corporate tax in recent years. The majority of corporate tax (around 75% from YOA15) are due to financial services companies. Due to this, the majority of the variation from year to year can be expected to be due to the tax paid by these companies. Figure 12 shows that the largest annual movements in corporate tax occurred in 2012 and 2014, both years in which corporate tax increased by £9m on the previous year. Tax from financial services has varied by more than £5m in four of the last six years, while other corporate tax has varied by no more than £2m, in all but one year.

Figure 12: Annual variations in corporate tax (£m, year of assessment)



Source: Taxes Office data

The reasons for the variations in financial services profits are difficult to forecast. Even in-year, it can be difficult for financial services companies to accurately predict their level of taxable profits. Given the difficulty in predicting this volatility, the IFG continues to forecast corporate tax to grow in line with the FPP economic assumption for financial services profit growth. While this may not always fully reflect the volatility from year-to-year, specific adjustments are made on the advice of the Taxes Office where specific information is available in relation to either individual taxpayers or groups of taxpayers.

Uncertainty regarding shareholder income and tax payer behaviour

The profits of Jersey companies (other than those companies taxed at 20%) are assessed on Jersey resident individual shareholders (under the heading of “shareholder income”) following their distribution.

The zero-ten corporate tax regime creates an incentive for Jersey resident individuals to envelop trading activity and investment holdings into companies. If held personally the trading profits/investment income arising would be subject to tax at the individual’s marginal personal tax rate; whereas when they are in the company they are subject to tax at 0%. In response to this situation the “distribution rules” were introduced with effect from 1 January 2013. Broadly what these rules seek to do is identify the pool of profits which have been subject to tax at a rate below 20% which are in a particular company. Whenever a Jersey resident individual shareholder seeks to extract value from that company (irrespective of how the value is extracted), it will be treated as a distribution made from the pool of identified profits (until such time as the pool is exhausted) and hence taxed on the shareholder.

Based on the data available to date there is no clearly identifiable trend towards the enveloping of investment holdings into companies, however the incentive to envelop such assets has only existed for a short period of time and it is therefore difficult to assess whether such a trend is developing and the corresponding impact on the personal income tax forecast.

It should be highlighted that bank interest and dividend income (excluding distributions from Jersey companies) constitutes a small proportion of total income reported by individual taxpayers. Furthermore although difficult to anticipate changes in taxpayer behaviour, it is unrealistic to assume that all individual taxpayers will envelop assets in this way. For many taxpayers:

- no significant tax deferral would be achieved as they are not in a financial position to defer the receipt of income;
- the costs of establishing and maintaining the required company would negate the benefit of the tax deferral; and

- the “hassle factor” of maintaining a company and complying with the distribution rules would act as a disincentive to envelop assets.

Forecasting shareholder income (i.e. the distributions made by Jersey resident companies to Jersey resident shareholders) is particularly difficult because there is currently little information on which to estimate the profile of distributions going forward. There have been significant changes to the tax rules in recent years which affect the amount of shareholder income assessed on taxpayers and therefore past experience is not much of a guide to the future and there is a risk that some of this income may not occur again in future years. Bearing this in mind, the central forecast is based on shareholder income growing at the rate of inflation.

However, there is a risk that taxpayer behaviour may change such that shareholder income may fall, rather than grow, and it is not possible to gauge by how much it could fall. The outturn data currently available does not appear to show any significant change in taxpayer behaviour to date, but the risk remains. It should be highlighted that the amount of income from distributions for the 2015 year of assessment totalled £185m. If the shareholder income were to fall to £100m (which is considered very unlikely) the potential loss of tax revenues, based on the estimated overall tax yield for the 2015 year of assessment of 13%, would be around £11m. It should also be noted that a significant proportion of shareholder income is accompanied by tax credits, therefore the actual yield on shareholder income is less than the overall tax yield, reducing the amount of tax revenues at risk.

Other uncertainties

The new assumptions include a slightly faster increase in interest rates. If interest rates were to increase more quickly than the assumptions, this could have some impact on both investment income and on mortgage interest tax relief, particularly towards the end of the forecast period. However, initial increases are likely to be slow and the impact on mortgage interest tax relief will be limited as it is being phased out by gradually reducing the maximum amount which can be claimed.

The impact of other budget policy changes on marginal-rate taxpayers has not been explicitly built into the forecast; given that the IFG forecast assumes that exemptions, reliefs and allowances for marginal-rate taxpayers will grow in line with recent averages. This may see some additional revenue if exemptions in particular rise more slowly than the average or revenue could grow more slowly if the opposite applies. Budget policy measures are also expected to have an impact on standard rate taxpayers – particularly phasing out standard child allowance and APA from standard rate taxpayers – but this has been built into the forecast.

Appendix C

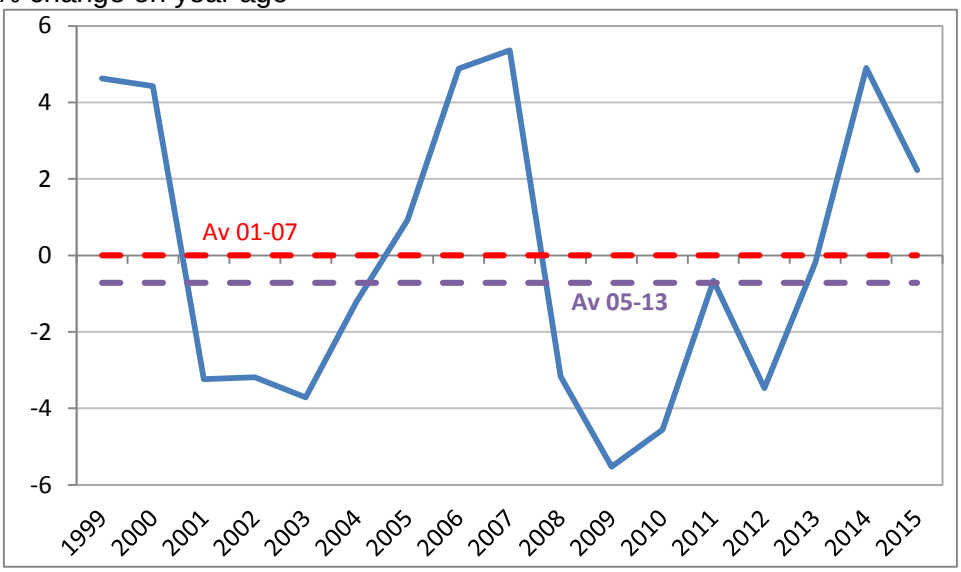
Analysis of economic developments which supported the March 2017 economic assumptions

This note was produced using data available up to March 2017 and therefore reflects that used to inform the economic assumptions produced by the Fiscal Policy Panel at that time.

GVA

GVA grew by 2% in 2015, the second consecutive year of growth following a number of years of decline. GVA of the finance sector has fallen by over 15% over the last ten years in real terms – while the non-finance sector has grown by 5%. Overall, the recovery in recent years means that GVA is back at a level last seen in 2004.

Figure 13: GVA
% change on year ago

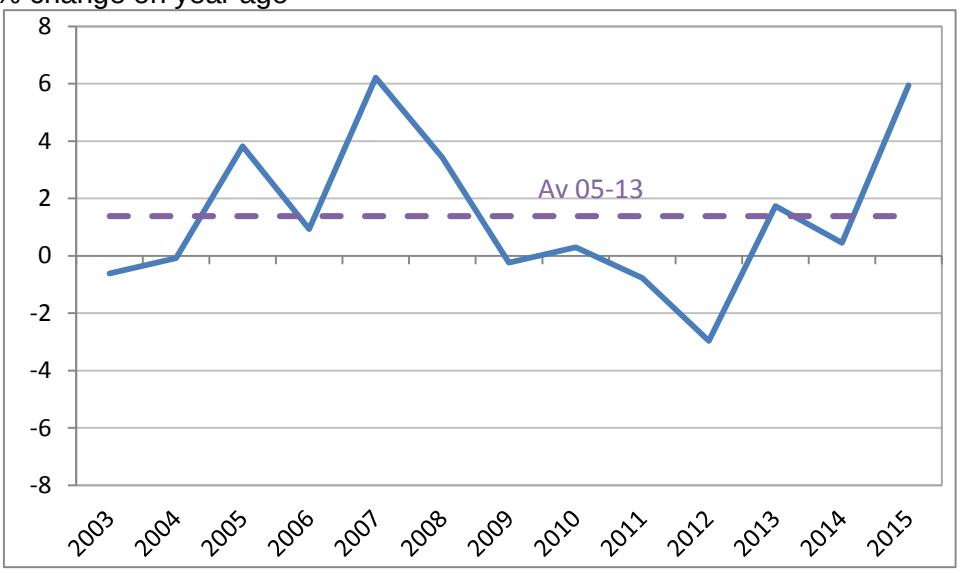


Source: States of Jersey Statistics Unit

GVA excluding finance profits

Figure 14 shows that if the profit from financial services is excluded from overall GVA (i.e. non-finance GVA plus compensation of employees for finance) the overall trend is somewhat positive, after three years of growth. The only year of any significant decline (i.e. greater than 1%) was 2012. Over the 2005-13 economic cycle, this measure grew at an average rate of 1.3% per year.

Figure 14: GVA excluding finance profits
% change on year ago

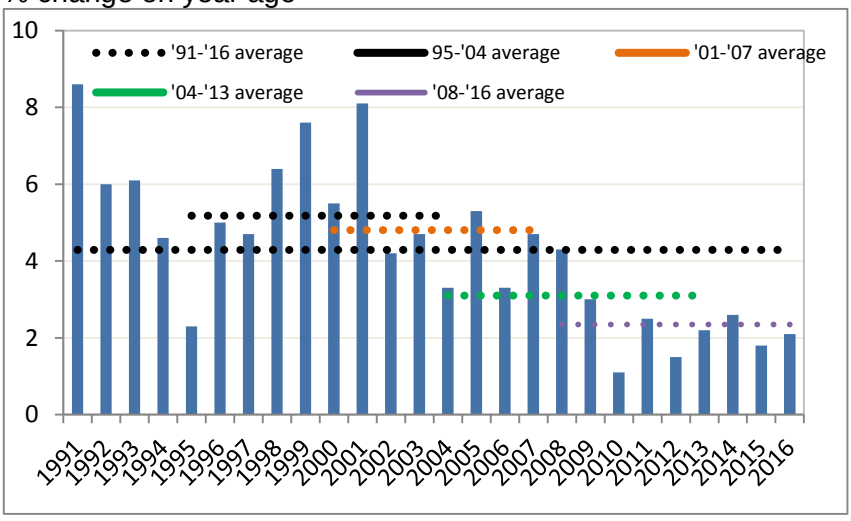


Source: States of Jersey Statistics Unit

Average earnings

The long-term trend in average earnings growth in the last ten years (2007-2016: 2.6%) was half the rate of the previous ten years (1997-2006: 5.3%). While these periods do not directly correlate with the economic cycle, **Figure 15** shows that more recent periods have seen significantly slower growth. It is difficult at this stage to judge whether recent trends are purely cyclical, structural or a combination of the two.

Figure 15: Average earnings growth
% change on year ago

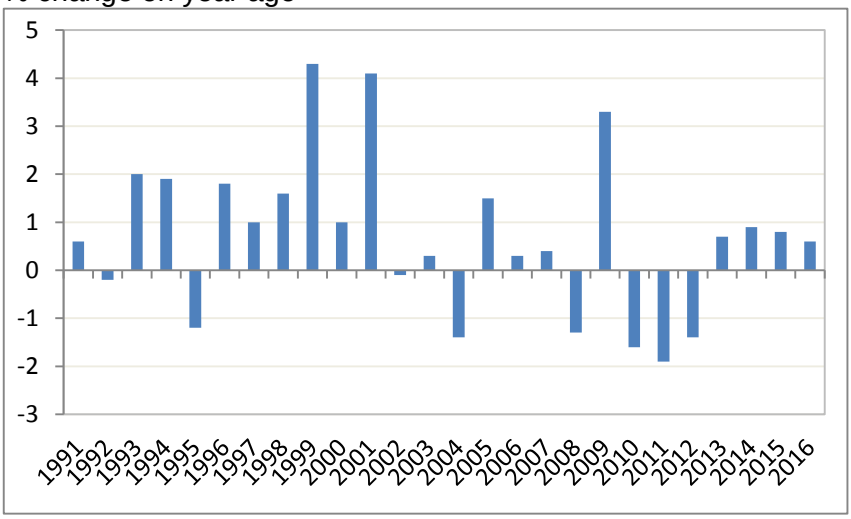


Source: States of Jersey Statistics Unit

In understanding trends in average earnings it is also important to consider trends in inflation as often the wage-bargaining process uses them as a reference point. **Figure 16** shows the long-

term trend in average earnings relative to RPI. In the long-term (1991-2016), earnings growth has averaged 0.7% above. This is largely in line with the growth rate over the last three years – and over the 2001-2007 economic cycle. However, over the 2004 to 2013 economic cycle, real earnings fell by an average of 0.1% per year.

Figure 16: Real growth in average earnings
% change on year ago

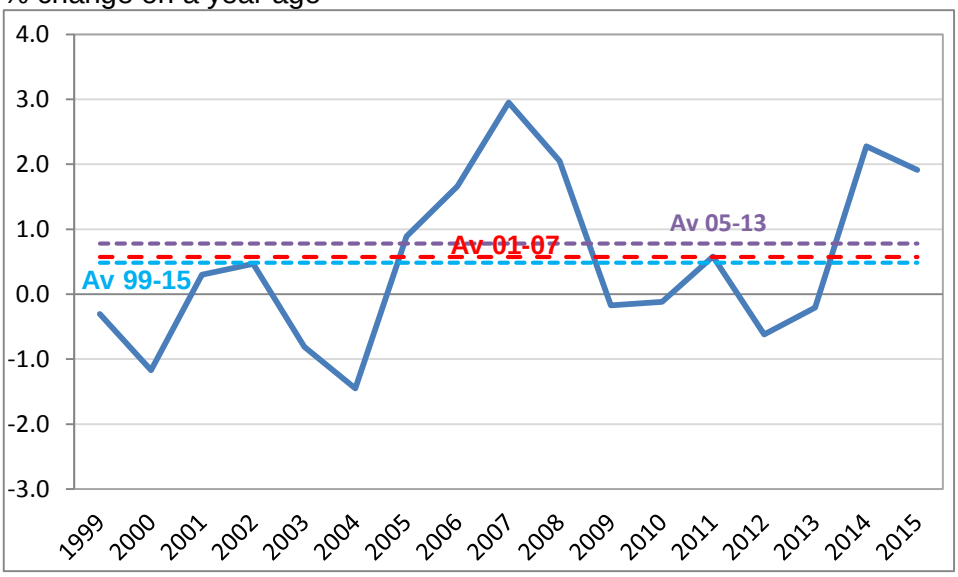


Source: States of Jersey Statistics Unit

Employment

Employment growth (in FTE terms) has averaged around ½% per year since 1998. Recent economic cycles have seen growth of 0.6% during 2000-2007 and 0.8% during 2004-2013 (**Figure 17**). This has been influenced by external economic conditions, and productivity, demographic and migration trends. Looking forward, it is difficult to see how any of these are going to be more supportive of employment growth given the weak global economy, concern about levels of inward migration and the ageing population (i.e. a risk that the working-age population becomes smaller).

Figure 17: Trends in employment
% change on a year ago



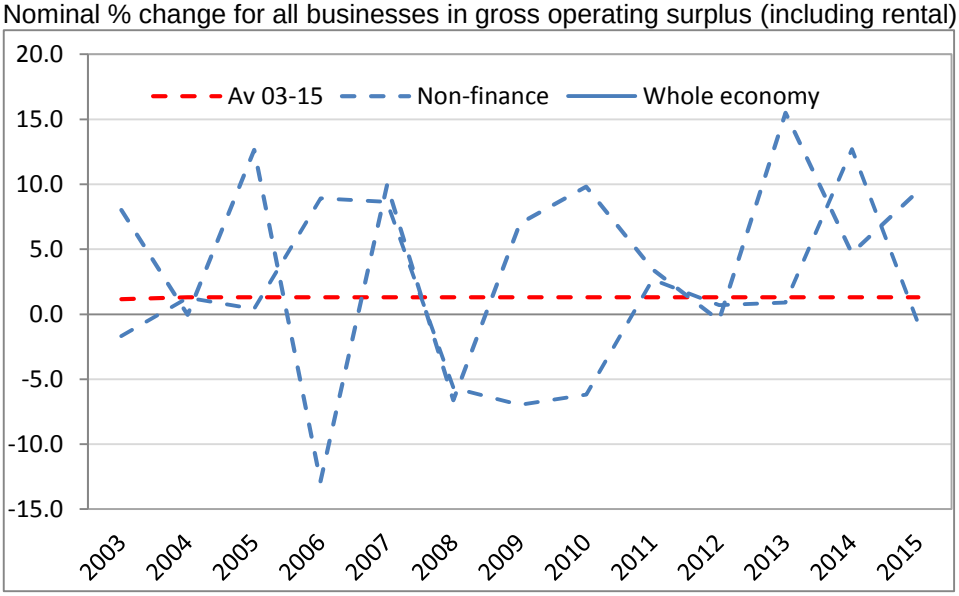
Source: States of Jersey Statistics Unit

Company profits

Figure 18 shows that company profits have increased by an average of 0.7% a year between 2001 and 2014 in nominal terms. The 2001-2007 economic cycle saw much faster growth averaging 1.6% while the 2005-2013 economic cycle saw only 0.4% average annual growth.

This is influenced by profits of the finance sector (which make up the majority of the total) but non-finance profits have also been volatile in the past.

Figure 18: Company profits
Nominal % change for all businesses in gross operating surplus (including rental)



Source: States of Jersey Statistics Unit

Finance profit and employment expectations

The Business Tendency Survey in December 2016 included questions on 'long-term' profit and employment expectations for 2017. Weighting each of these responses results in an aggregate expectation of 2% growth in employment and approximately 4% growth in profits. Both were somewhat higher than projections at the end of 2015, when finance firms expected flat employment and growth in profits of around 3%.

Figure 19: Finance profit expectations

Survey	Decrease	No change	Increase	Weighted change
Dec14 (for 2015)	12%	18%	70%	**3.7%**
Dec15 (for 2016)	18%	10%	73%	**3.1%**
Dec16 (for 2017)	4%	28%	69%	**4.4%**

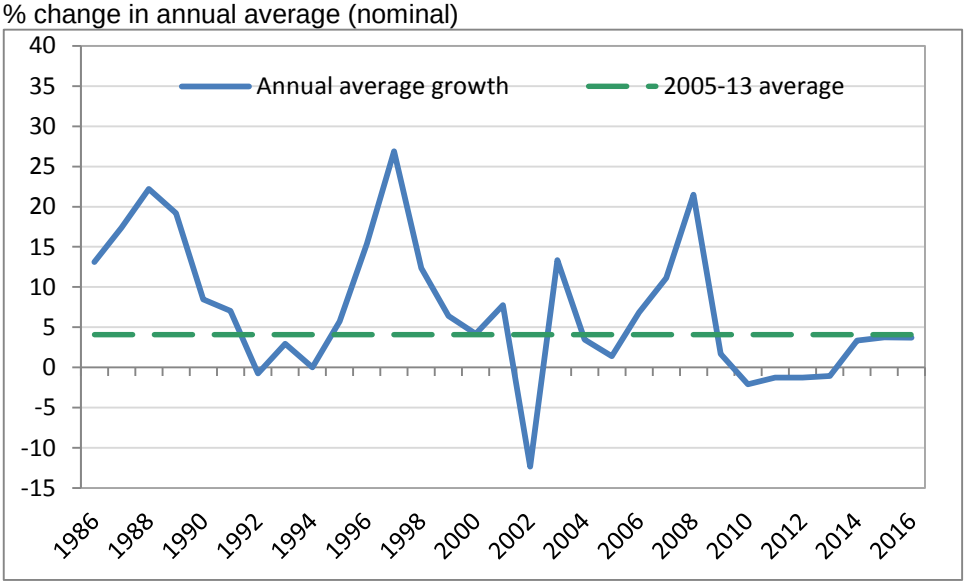
Source: Jersey Statistics Unit

House prices

The long-term average increase in house prices is 7.1% per year (1986-2016) although both the 2001-07 and 2005-13 cycles have seen slower annual average growth of between 4% and 5%. The last three years have seen house prices grow by 3-4% per year, with average prices in 2016 now 5% higher than the previous (2009) peak.

Taking this into account, house prices are now assumed to increase at a longer term trend rate of 3% per year - similar to the longer term assumption for average earnings growth. This is equivalent to 0% real growth each year, after taking into account the assumptions for future inflation.

Figure 20: Trends in house prices
% change in annual average (nominal)

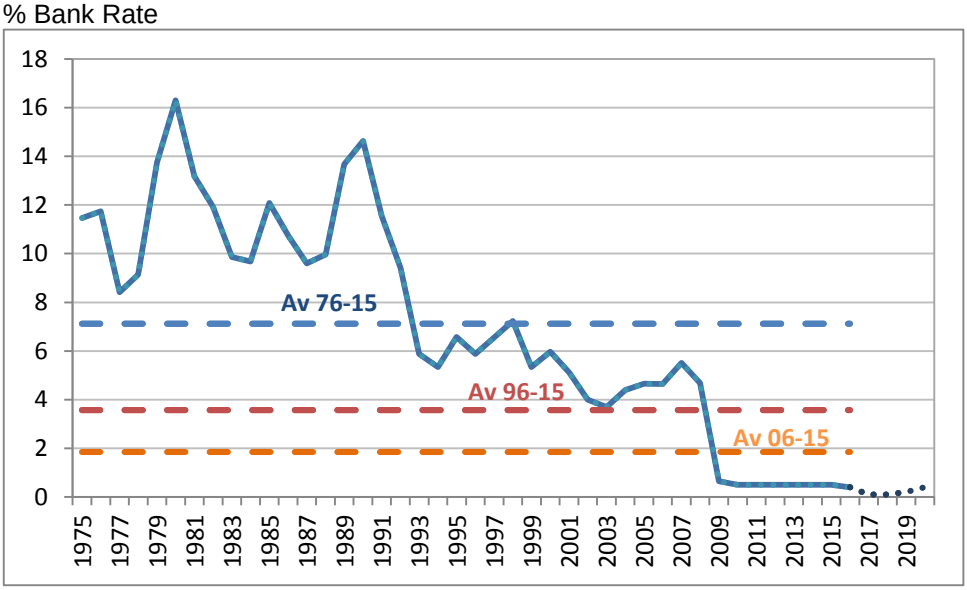


Source: Jersey Statistics Unit / Economics Unit calculations

Interest rates

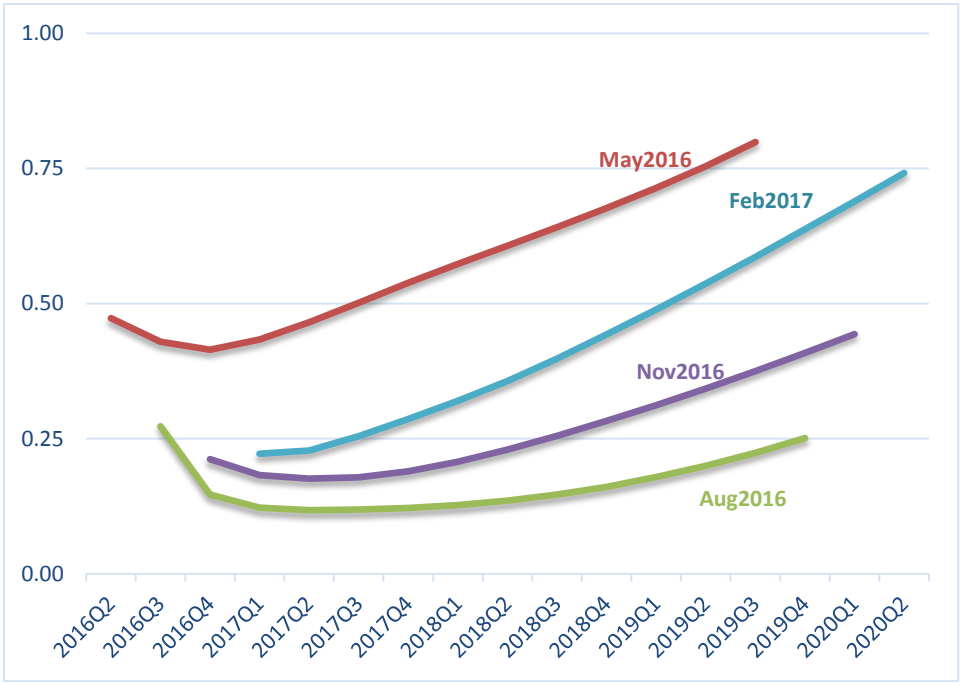
The Bank of England Bank Rate in the UK has been at historically low levels since 2009 (**Figure 21**), significantly below longer-term averages. 2016 saw a further cut to 0.25% and market expectations do not see a return to longer-term averages in the foreseeable future. (**Figure 22**).

Figure 21: Interest rates
% Bank Rate



Source: Bank of England (and FPP forecast assumptions 2017+)

Figure 22: Market interest rate expectations
% Bank Rate



Source: Bank of England Inflation report February 2017

Appendix D

Recent trends in taxable income

Overall, the amount of income tax collected grew by 5% in 2016, at a similar rate to the previous year. Personal tax grew by around 6%, while corporate tax grew by 2%.

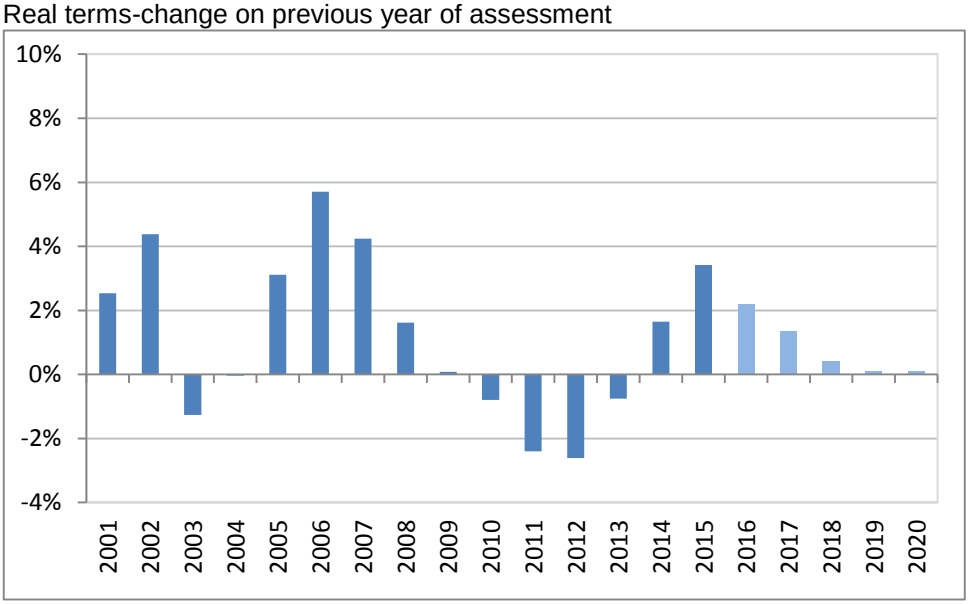
Income tax collected in 2016 was primarily based on personal and corporate income for the year of assessment 2015 (YOA15). On the personal side, the main components of taxable income in YOA15 were employment income (66%), pension income (10%) and income from shareholders (7%)[2]. Corporate tax is predominantly collected from financial services, property development/rental, and utilities. Trends in each of these are considered in more detail below; plus consideration of the recent trends in the yield – i.e. the amount of tax collected for every £1 of taxable income - for corporate and personal.

Income from employment

Employment income has been growing faster than inflation for the last two years, following a period of five years of weak growth. Based on the IFG forecast (after taking into account the review of the forecasting model), employment income growth will start to slow in real terms, as inflation increases. From 2018 onward, employment income is assumed to grow largely in line with the rate of inflation.

[2] Income from shareholders includes distributions, shareholder loans and intermediary service vehicle income.

Figure 23: Taxable employment income
Real terms-change on previous year of assessment

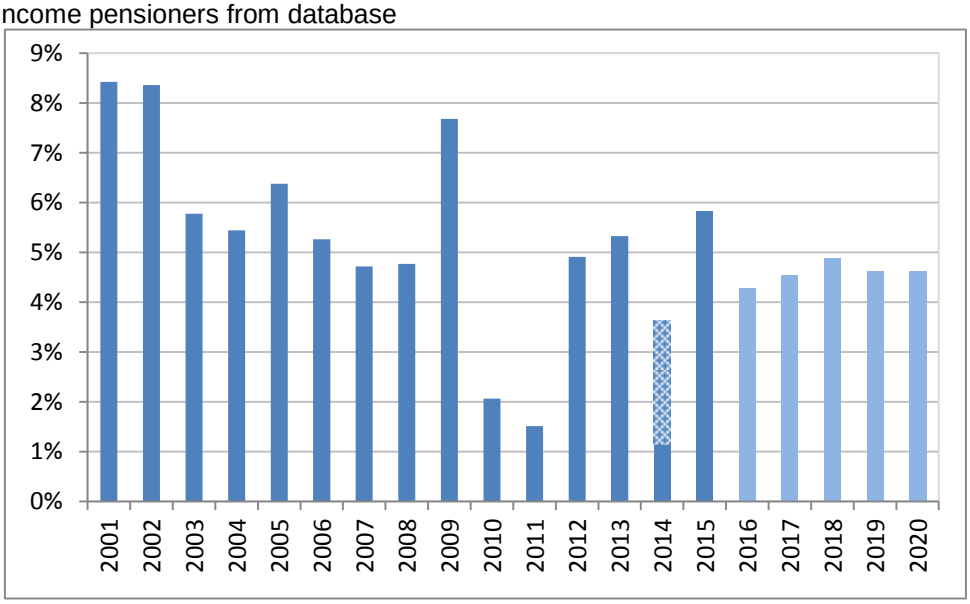


Source: 2001 to 2015 from Taxes Office data, 2016-20 from forecasts

Pension income

In recent years, pension income has generally grown by around 6% per annum, though 2014 saw slower growth due to an exercise undertaken by the Taxes Office at the end of 2013 to remove a number of low-income pensioners from the requirement to complete a tax return.

Figure 24: Annual growth in taxable pension income
Real-terms change on previous year of assessment, 2014 adjusted to take account of removal of low-income pensioners from database



Source: 2001 to 2015 from Taxes Office data, 2016-20 from forecast. 2014 includes adjustment for removal of low income pensioners from the tax database (hatched pattern).

Shareholder income

Since the new distributions regime was introduced in 2013, income has been very volatile – with a 23% increase in 2014 and an 8% fall in 2015. Part of the 2014's increase was due to a number of one-off large distributions which were not expected to be repeated in 2015. Given the short period of time since the new regime was introduced, it is difficult to identify a clear pattern.

Comparison of personal income forecast with UK forecast

The UK's Office for Budget Responsibility (OBR) published its 'Economic and Fiscal Outlook' in March 2016 which sets out the latest fiscal forecast for the UK's public finances, and the economic and market assumptions that underpin the forecast.

The OBR's income tax forecast is driven by assumptions for growth in the total wages and salaries in the UK economy, in nominal terms, which is made up of assumptions for employment growth and average earnings growth. The IFG's forecast for personal income tax is also driven by a similar assumption (changes in employment growth and average earnings growth drive employment income and other earned income changes).

Figure 25 shows the OBR's assumptions for UK employment and average earnings growth compared to the FPP's assumptions for Jersey FTE employment and average earnings growth (including outturns for 2015 and 2016). While Jersey has seen somewhat faster growth in employment in 2016, both Jersey and the UK are anticipated to slow in 2017, before falling to zero growth in Jersey and slow growth of less than ½% per year in the UK. Earnings growth has been similar, and is expected to follow a similar path over the forecast period.

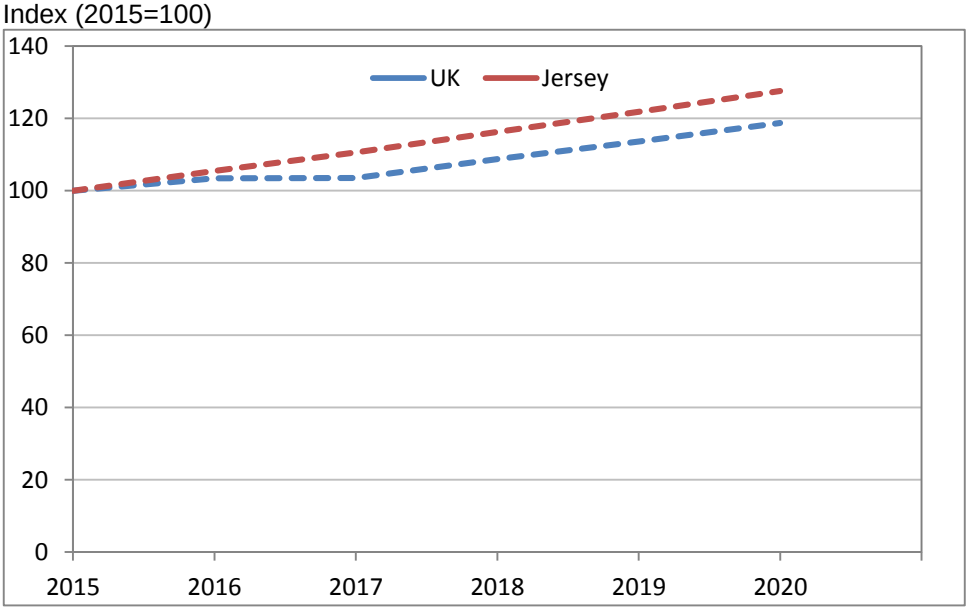
Figure 25: Comparison with OBR forecast for employment and earnings growth
% change from previous year

	2015	2016	2017	2018	2019	2020
UK						
Employment growth	1.8	1.4	0.6	0.4	0.4	0.4
Average earnings growth	1.9	2.2	2.6	2.7	3.0	3.4
Jersey						
Employment growth	2.0	2.0	0.8	0.0	0.0	0.0
Average earnings growth	1.8	2.1	2.9	3.0	3.0	3.0

On the basis of these economic assumptions, the OBR is expecting the UK's personal income tax revenue to grow by around 25% by 2020/21. The growth rate anticipated for Jersey is similar in most years of the forecast – other than 2017/18, where personal tax revenues in the UK are expected to be flat. This is because although tax from pay-as-you-earn (largely employment income) is increasing, this is offset by a £4bn fall in self-assessment income (largely unearned

income) due primarily to changes in the taxation of individual dividend income which have led to some individuals bringing dividend income forward into 2016/17.

Figure 26: UK and Jersey personal income tax forecasts
Index (2015=100)



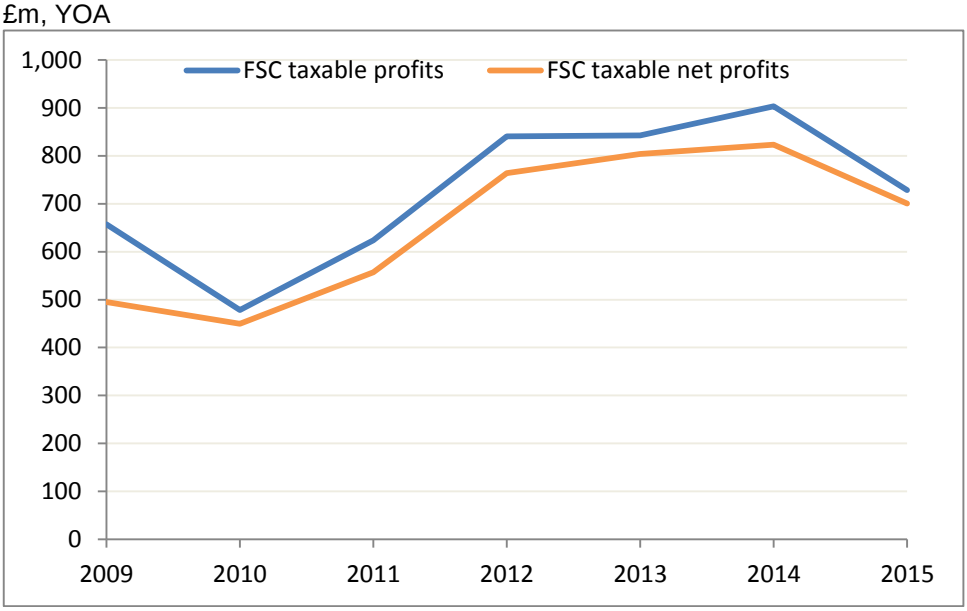
Note: UK personal income tax years run from year beginning 6 April. For the UK line, 2015 = April 2015 to April 2016.
Source: OBR Economic and Fiscal Outlook March 2017.

Company tax

Financial Services

About three quarters of corporate tax comes from financial services. Financial services taxable profits fell by 19% in YOA15, although losses offset against profits also fell, such than the net position was down 15% on the previous year.

Figure 27: Financial services taxable profits
£m, YOA



Property and utilities

Tax on property makes up 20% of corporate tax. Within this, the main component is tax on rental income, which increased by 5% in YOA15. Development income increased more significantly, by more than 30%. Overall taxable net profit for property companies (including a small amount of trading income also taxed at 20%) after allowing for capital allowances and after offsetting losses carried forward was up by around 6%.

Tax on utilities makes up 4% of corporate tax. Trading profits were up 15% in YOA15. However, trading profits in this sector are generally subject to significant capital allowances which grew by 20% in YOA15 such that overall taxable net profit for utilities (including a small amount of rental income) was up by 6%.

Yield trends

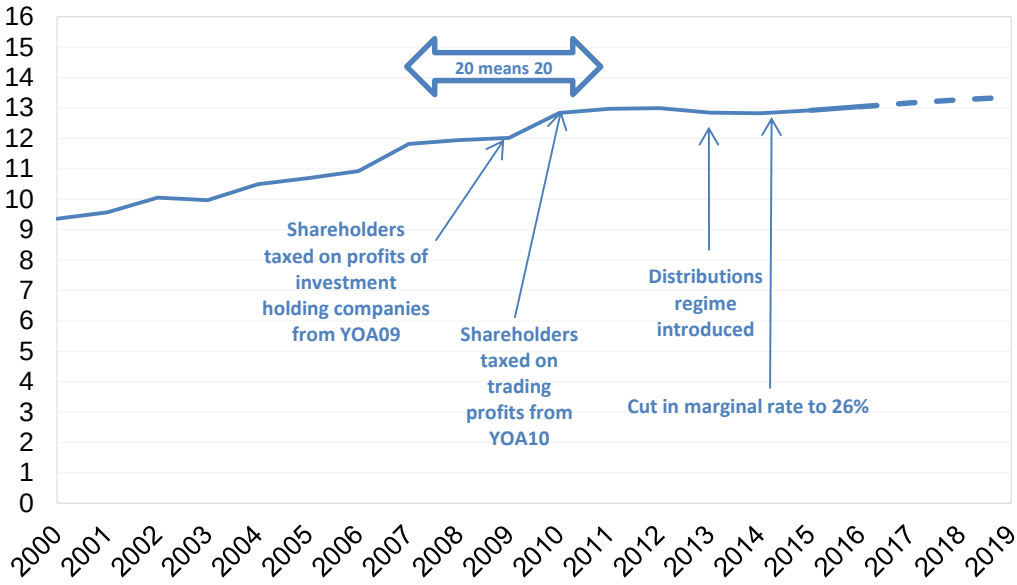
The yield on personal income has increased strongly over the last fifteen years, from approximately 9.5% in YOA00 to 13% in YOA14. There have been a number of factors at work in recent years, in particular the implementation of 20-means-20 which saw the gradual removal of most allowances from standard rate taxpayers between YOA07 and YOA11.

The changes to the tax regime for shareholder income will also have had an impact. Taxation was introduced for shareholders of investment holding companies in YOA09, with shareholders also taxed on trading profits from YOA10. From YOA13, this regime was replaced by the distribution rules.

While the cut in the marginal rate in YOA14 was expected to result in a fall in the yield, the yield in fact held up when compared to the previous year.

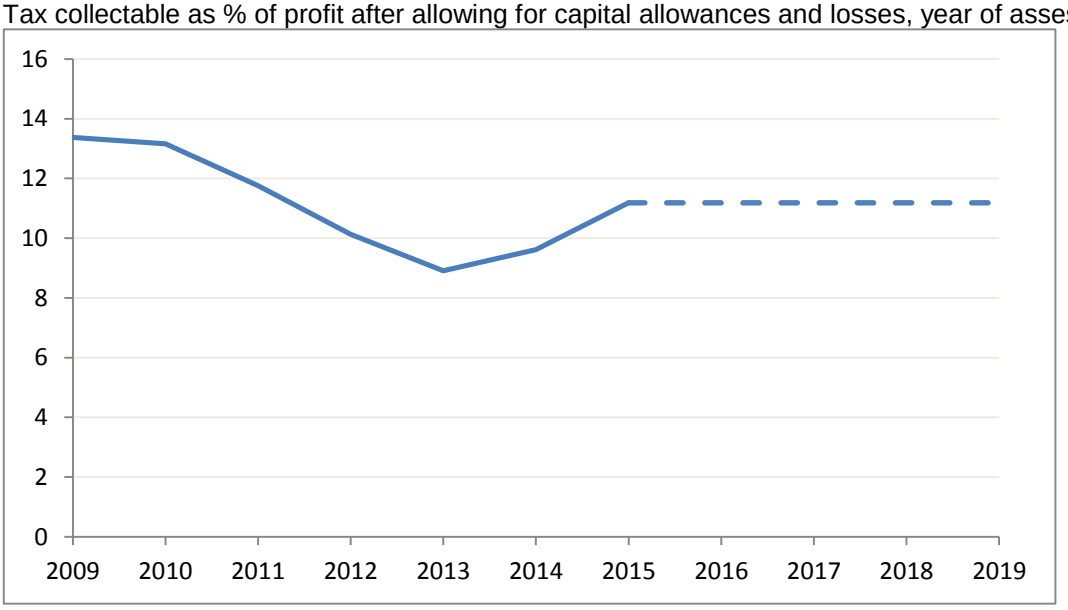
Going forward, the yield is expected to rise gradually as incomes increase faster than the value of allowances which can be offset against that income. The assumption used by the IFG is that allowances for marginal rate taxpayers will grow at their recent trend rate, while allowances for standard rate taxpayers continue to fall.

Figure 28: Trend in yield on personal income
Tax collectable as % of taxable income, year of assessment



Corporate yield has been calculated based on tax collectable as a proportion of the net taxable income, after allowing for capital allowances and losses offset against profits. After a number of years of declining yield, the last two years have seen some improvement. The assumption is that the yield will remain at this level over the forecast period.

Figure 29: Trend in yield on corporate profits
Tax collectable as % of profit after allowing for capital allowances and losses, year of assessment



Appendix E

Income tax forecasting phase one: review of employment income forecast

Note prepared for Government of Jersey

25 April 2017

1 Introduction

This note provides a review of the Government of Jersey's approach to forecasting short-term employment income, which is one of the main inputs into its income tax forecast. As noted in the Terms of Reference, Oxera was commissioned to provide a review of the Government of Jersey's approach to forecasting employment income, which represents about 80% of taxable income. As part of this review, Oxera has been asked to review the current forecasting approach used by the Government of Jersey and consider whether any amendments could be made that might enhance its forecasting performance.

We first outline the current approach to forecasting taxable employment income, including a review of its forecasting performance. The current approach is based on regression analysis. It uses forecasts of changes to compensation of employees (CoE[1]—a national accounts measure of total wages and salaries) to predict future changes in employment income. Our review of the current approach shows that while there is generally a correlation between movements in the two variables, in recent years the relationship has become weaker.

We consider an alternative approach and provide details of this (also based on regression analysis) and a review of its forecasting performance (compared to the current approach).

The alternative approach separates out forecasts of full-time-equivalent employees (FTEs) and average earnings. This is in contrast to using CoE forecasts (per the current approach), which draw on information on FTEs and average earnings.

[1] CoE is a national accounts measure of total employment earnings (i.e. it is an accounting measure of employment income). The forecast of CoE is based on future expected trends in earnings and employment.

We then refine the approach further by distinguishing between the financial and non-financial sectors, and show how this approach changes the forecast and the fit to the historical data.

We recommend that, in the short term, the Government of Jersey considers using a range of forecasts, which could include the current approach and the alternative forecasting approaches considered in this note. In particular, the decomposed alternative approach, could be considered given that this performs better (historically) than the other top-down approaches and generates more intuitive results.

2 Current approach to forecasting employment income

The current approach forecasts employment income as follows:

$$\Delta Employment\ income = \beta_1 + \beta_2 \Delta CoE$$

where:

- $\Delta Employment\ income$ is the annual percentage change in total employment income;
- ΔCoE is the annual percentage change in CoE;
- β_1 is a constant term; and
- β_2 is a coefficient representing the effect that CoE has on employment income.

The current approach therefore uses forecasts of annual changes in CoE to predict annual changes in employment income. The analysis is based on a sample period 2001–15.

The specification of the current forecast formula, based on the results of the regression analysis, is detailed in Table 2.1.

Table 2.1 Current approach: regression results

	Coefficient
Change in CoE coefficient ($\boldsymbol{\beta_2}$)	0.904***
Constant ($\boldsymbol{\beta_1}$)	0.699
Number of observations	15
Adjusted R-squared	0.789

Note: Adjusted R-squared indicates how well observed outcomes are replicated by the regression analysis, while adjusting for the number of predictors so that it is not biased towards equations with more explanatory variables. It indicates the percentage of the variation in the change in total employment income that is explained by the forecast. These results are based on data which does not include updated CoE figures for 2001 and 2002.

* statistically significant at the 10% level, ** statistically significant at the 5% level, ***statistically significant at the 1% level.

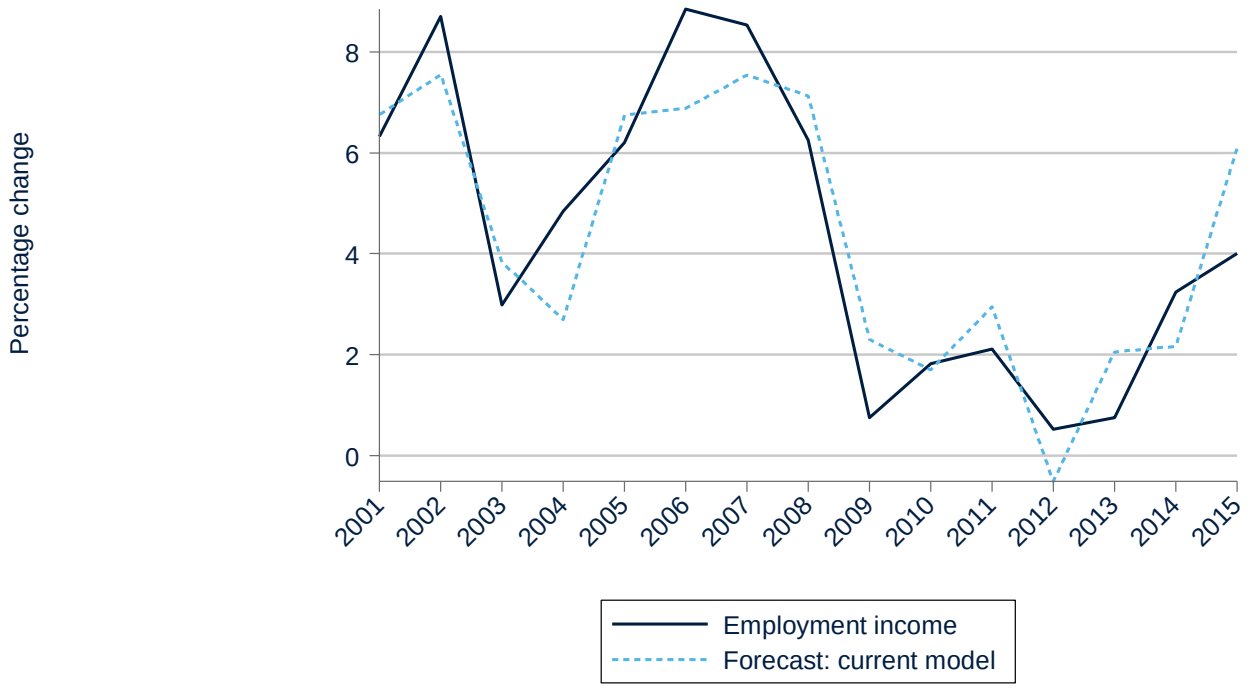
Source: Government of Jersey and Oxera analysis.

The above results show that changes to forecast CoE have almost a proportional impact on changes to employment income—specifically, a 10% increase in the forecast change in CoE will increase the forecast change in employment income by 9%. The adjusted R-squared measure is relatively high, indicating that the regression explains around 79% of the variation in employment income.

2.1 Historical forecast performance

Using actual observed data on changes to employment income and compensation of employees, we can evaluate how this forecast (as specified in Table 2.1) has performed historically. This is shown in Figure 2.1 below.

Figure 2.1 Forecast performance: current approach



Note: This graph is based on actual historical CoE and so does not illustrate how accurate this approach will be at predicting future earnings (or how good a forecast it provided in previous years), as this will also depend on the accuracy of the forecast of CoE used at the time.

Source: Oxera analysis.

Figure 2.1 shows that, in general, the current approach (with CoE as the only explanatory variable) provides a reasonably good fit to historical changes in employment income. Therefore, this approach will have forecast employment income reasonably well if the forecasts of CoE were accurate.

However, in 2015 the performance of the current forecast appears to have weakened, with the difference between the actual and the forecast exceeding 2 percentage points (in absolute terms), as shown in Table 2.2.

Table 2.2 Forecast performance (percentage change): current approach

Year	Forecast: current approach	Actual	Difference
2011	3.0	2.1	0.8
2012	–0.5	0.5	–1.0
2013	2.1	0.8	1.3
2014	2.2	3.2	–1.1
2015	6.1*	4.0	2.1
Average			**1.3**

Note: All units are percentage points. The average figure is based on absolute differences. * In 2016, the actual forecast used by the Income Forecasting Group for 2015 employment income growth was 3.6%—based on data available at the time. The 6.1% figure in the table is based on how the existing approach would have forecast, using the most up to date data.

Source: Oxera analysis.

Table 2.2 above indicates how good a fit the regression is to the actual historical data; it does not show what the actual forecasts were of changes to employment income in those years (because the regression we use in this review now benefits from additional data from recent years and actual figures for the independent variables in all years).

Given these differences, Oxera has conducted further regression analysis using a broader range of explanatory variables to identify an alternative formula for forecasting employment income, with the aim of increasing the predictive accuracy of the model. This is outlined in the next section.

3 Alternative approach

We tested specifications with several additional variables and separated CoE into its two components: FTE employment and average earnings. Doing so allows the econometric regression to determine how the two components in CoE directly affect employment income. Furthermore, given that future forecasts of CoE are based on forecasts of FTE employment and average earnings, these forecasts (FTE employment and average earnings) are available and can be used directly to predict future employment income.[2]

The alternative formula performs marginally better than the current one. However, to produce a forecast that provides a more accurate result than the existing forecast being used by the Government of Jersey, we believe further enhancements could be made, as described in section 4. In section 5 we present analysis using a similar approach but with the explanatory variables broken down into more detail (including by sector).

3.1 Alternative forecast

Our alternative approach uses the formula below to forecast employment income. This is based on the economic intuition that the key drivers will be the number of people working (captured by FTE employment) and changes to wages/bonuses (captured by GVA). In addition, we tested other equations such as regressions including RPI, but found that the equation below generated the best fit to the data and provided the most intuitive results.

[2] In recent years, FTE employment and average earnings have not been good predictors of CoE, which is an additional reason for testing an equation based on FTE employment and average earnings directly.

$$\Delta Employment\ income = \partial_1 + \partial_2 \Delta FTE + \partial_3 \Delta GVA + \partial_4 dummy09$$

where:

- $\Delta Employment\ income$ is the annual percentage change in total employment income;
- ΔFTE is the annual percentage change in FTE employment;
- ΔGVA is the annual percentage change in nominal GVA;
- $dummy09$ is equal to 0 up to 2008 and equal to 1 from 2009 onwards—it is a dummy term used to control for a structural break in the data;[3]
- ∂_1 is a constant term;
- ∂_2 is a coefficient which represents the effect that changes to FTE employment have on employment income;
- ∂_3 is a coefficient which represents the effect that changes to nominal GVA have on employment income;
- ∂_4 is a coefficient which represents the effect of the structural break in the data on annual changes in employment income.[4]

We also tested a regression that included changes in average earnings; however, as the value of the coefficient was negative and close to zero, it was not included in the final formula. The fact that it was negative is likely to be because GVA is partly determined by earnings (and is likely to be correlated with it), and so this term is therefore likely to capture the effect of changes to earnings on employment income. We note that removing the average earnings variable also improved the fit of the forecast to the historical data (represented by a lower adjusted R-squared).

In addition, we tested a formula which included real GVA (no inflation) instead of nominal GVA. However, we found the adjusted R-squared was lower for the regression that included real GVA. This is likely to be because nominal GVA captures the impact of inflation, which will also affect changes to employment income.

[3] A structural break is when a time series abruptly changes at a point in time. In this particular data series, we find that there is a structural break in the nominal GVA variable in 2009. The addition of a dummy variable allows us to change the constant variable over time (so it equals one value before 2009 and another value from 2009 in this particular equation) and to account for a permanent change in the base level of total employment income growth. In the case of this regression, the dummy variable is a relatively large negative value that offsets the large coefficient on the constant term post-2009.

[4] This is because '$dummy09$' is a constant (0 pre-2009 and 1 post-2009). This coefficient is effectively an adjustment to the constant term (∂_1) after 2009.

Table 3.1 Alternative approach: regression results

	Coefficient (alternative formula)	Coefficient (current formula)
Change in CoE ($\boldsymbol{\beta_2}$)		0.904***
Change in FTE employment ($\boldsymbol{\partial_2}$)	0.880**	
Change in GVA (nominal) ($\boldsymbol{\partial_3}$)	0.089	
Structural break dummy variable (2009) ($\boldsymbol{\partial_4}$)	-4.332***	
Constant ($\boldsymbol{\partial_1}$; $\boldsymbol{\beta_1}$)	5.655***	0.699
Observations	15	15
Adjusted R-squared	0.836	0.789

Note: Adjusted R-squared indicates how well observed outcomes are replicated by the regression analysis, while adjusting for the number of predictors so it is not biased towards equations with more explanatory variables. It indicates the percentage of the variation in the change in total employment income that is explained by the forecast.

* statistically significant at the 10% level, ** statistically significant at the 5% level, ***statistically significant at the 1% level.

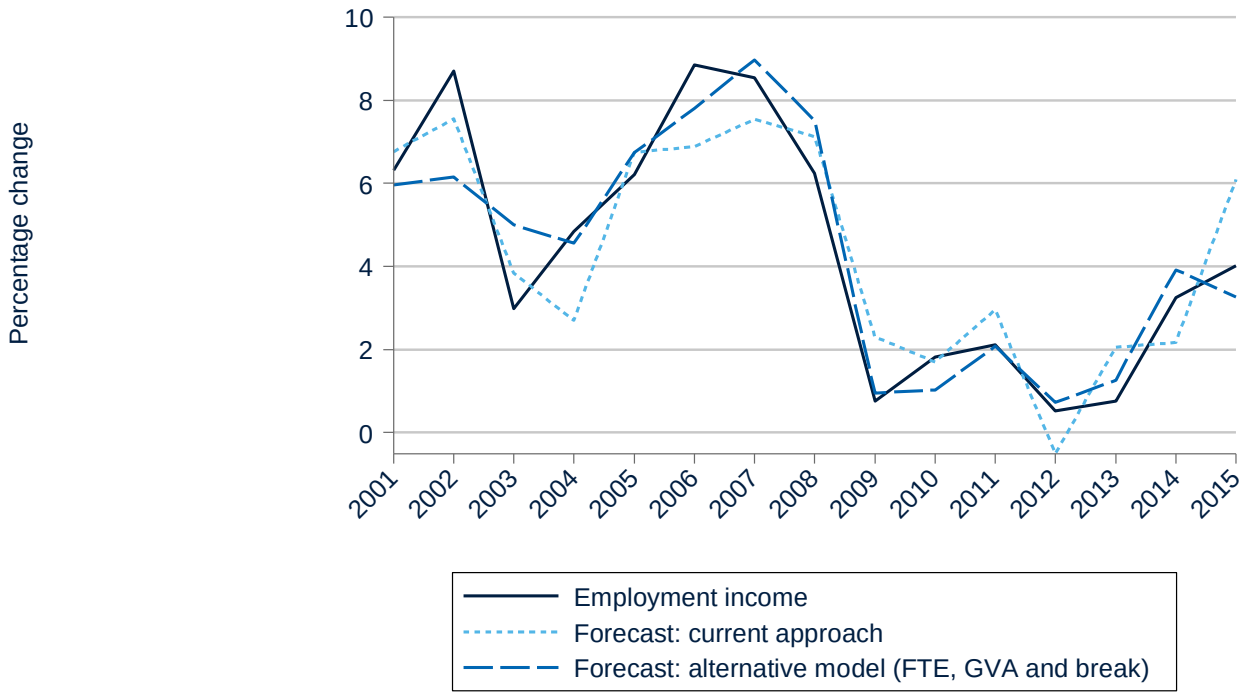
Source: Oxera analysis.

The results of the alternative regression above show that changes in FTE employment have a significant effect on changes in employment income (as shown by the large coefficient). Specifically, this formula predicts that a 10% increase in the change in FTE employment will increase the change in employment income by 8.8%. The adjusted R-squared measure is higher than for the current regression, indicating that changes in the explanatory variables in the alternative regression explain more of the variation in historical changes in employment income (around 84%).

3.2 Forecasting performance

Using actual observed data on changes to employment income and the explanatory variables in Table 3.1, we examine how the predictions of the alternative forecast compare with actual historical data, as illustrated in Figure 3.1.

Figure 3.1 Forecast performance: alternative approach



Source: Oxera analysis.

Figure 3.1 shows that the alternative forecast fits historical data reasonably well, including in 2015.

Table 3.2 Forecast performance: alternative approach

Year	Actual change	Forecast change	Difference (alternative approach)	Difference (current approach)
2011	2.1	2.1	0.0	0.8
2012	0.5	0.7	0.2	–1.0
2013	0.8	1.3	0.5	1.3
2014	3.2	3.9	0.7	–1.1
2015	4.0	3.3	–0.7	2.1
Average			**0.4**	**1.3**

Note: All units are percentage point annual growth. The average figure is based on absolute differences. The final column is drawn from Table 2.2 and is presented for ease of comparison.

Source: Oxera analysis.

As the table shows, the alternative approach predicts recent changes in employment income reasonably well—the average difference (based on absolute values) is 0.4 percentage points compared with 1.3 percentage points when the current forecasting approach is used.

However, we note that while the fit to the historical data is good, the model is not intuitive. In particular, the model predicts that in a scenario with no employment growth and inflation around 3%, real wages will fall, which could be unexpected given historical trends in real wages. We therefore refine the approach further to understand better the underlying relationships between the variables.

4 Refining the approach

Following discussion with the Government of Jersey, we have explored further a more disaggregated version of the alternative approach set out above.

4.1 Refining the top-down approach

The alternative forecast is based on using changes in two explanatory variables: FTE employment and nominal GVA. However, we considered that it may be possible to produce a more nuanced regression based on the factors that determine GVA in particular.

To test this, we have broken down the two main components of GVA: CoE and gross operating surplus (GOS). GOS captures the profits that firms makes. We also split these between the financial services sector and the non-financial services sector, as we expect the impact on employment income from changes in the financial sector to differ materially from changes in other sectors. We then build a regression based on the following equation:

$$\Delta Employment\ income = \partial_1 + \partial_2 \Delta CoE\ (FS) + \partial_3 \Delta GOS(FS) + \partial_4 \Delta CoE\ (non - FS) + \partial_5 dummy09$$

where:

- $\Delta Employment\ income$ is the annual percentage change in total employment income;
- $\Delta CoE\ (FS)$ is the annual percentage change in the nominal CoE in the financial services sector;
- $\Delta GOS\ (FS)$ is the annual percentage change in the nominal GOS in the financial services sector;
- $\Delta CoE\ (non - FS)$ is the annual percentage change in the nominal CoE in the non-financial services sector;
- $dummy09$ is equal to 0 up to 2008 and equal to 1 from 2009 onwards—it is a dummy term used to control for a structural break in the data;
- ∂_1 is a constant term;
- ∂_2, ∂_3, and ∂_4 are coefficients.

We also tested regressions that included separate terms for FTE employment and earnings (where both variables were split by sector). However, the above formula—which included compensation of employees (split by sector)—performed better in terms of explaining the historical variation in changes to employment income.

Furthermore, GOS (non-financial sector) was not included because the variable had a negative coefficient. Furthermore, the motivation for including GOS (financial sector) is that it could be expected to be correlated with bonuses and might therefore affect employment income. While bonuses in the financial services sector may be a significant component of remuneration in that sector, we understand that this is not the case (on average) for other sectors.

The results of this decomposed alternative regression are presented in Table 4.1 below.

Table 4.1 Alternative approach (decomposed): regression results

	Coefficient
Change in CoE (FS) coefficient (∂_2)	0.069
Change in GOS (FS)coefficient (∂_3)	0.107**
Change in CoE (non-FS) coefficient (∂_4)	0.695***
Structural break dummy variable (2009) (∂_5)	-1.287*
Constant (∂_1)	2.071**
Number of observations	13
Adjusted R-squared	0.935

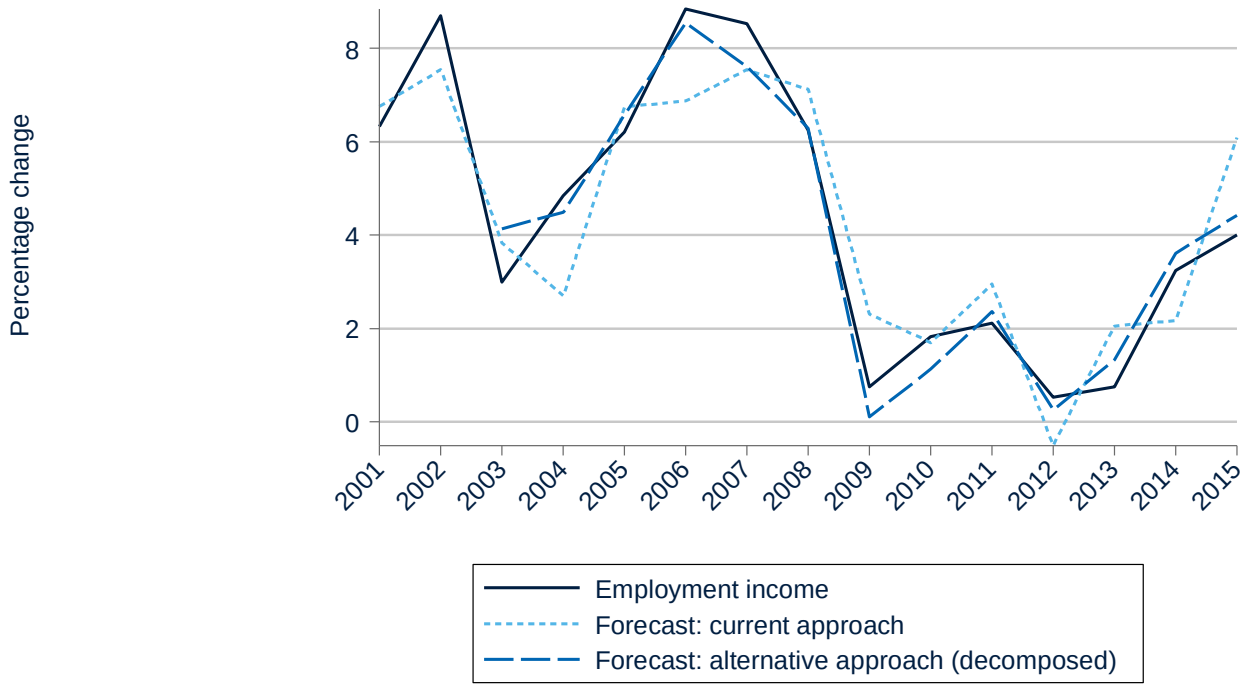
Note: Adjusted R-squared indicates how well observed outcomes are replicated by the regression analysis, while adjusting for the number of predictors so that it is not biased towards equations with more explanatory variables. It indicates the percentage of the variation in the change in total employment income that is explained by the forecast. The number of observations has reduced as there was no consistent data available for 2000 and 2001.

* statistically significant at the 10% level, ** statistically significant at the 5% level, ***statistically significant at the 1% level.

Source: Oxera analysis.

We find that this forecast fits the historical data well, and explains around 94% of the variation in changes in employment income, which is illustrated in Figure 4.1 below. However, whilst the adjusted R-squared is very high, it should be noted that there are additional challenges in forecasting the disaggregated economic fundamentals as they can be volatile.

Figure 4.1 Forecast performance: alternative approach (decomposed)



Note: Forecasts (alternative approach—decomposed) for 2001 and 2002 were not produced owing to data limitations.

Source: Oxera analysis.

As illustrated in the figure above, the alternative decomposed model provides a more accurate fit (to historical data) than the alternative Oxera approach or Jersey's current approach.

4.2 Bottom-up approach

In the longer term, we consider that exploring a more bottom-up approach could help to improve the accuracy of income tax forecasting.

Given the granularity of the newly available data on income at the individual level, using this information could lead to a more robust approach than using a top-down econometric methodology or allowing two approaches to be run in tandem to inform forecasting judgement. This approach would be likely to involve calculating employment income at a lower of level of aggregation—e.g. split by sector and age bands—based on individual or household data.

Forecasts at this more disaggregated level could then be used to estimate how employment income and income tax payable would be likely to change. One of the advantages of such an approach is that it would use tax yields at a lower level of aggregation (which may be easier to forecast forward) and distinguish between marginal and average tax rates. This could help improve the accuracy of the analysis because tax yields tend to differ according to aspects such as sector and age.

5 Conclusion

Oxera's review has identified that while the current approach adopted by the Government of Jersey has forecast reasonably well in the past, the underlying regression appears to have been weaker more recently.

The alternative forecast appears to fit the historical data better than that currently used. The alternative forecast uses a regression derived by testing alternative independent variables that included the determinants of CoE directly, alongside other macroeconomic variables. The further disaggregation of the model improved its performance further, and generated more intuitive results.

We recommend that, in the short term, the Government of Jersey considers using a range of forecasts, which could include the current approach and the alternative forecasting approaches considered in this note. In particular, the decomposed alternative approach, which splits the CoE variable by sector (financial services and non- financial services) could be considered given that this performs better (historically) than the other top-down approaches. In addition, we consider that a bottom-up approach could be investigated in the longer term.

However, the ability of this approach or alternatives to predict future employment income depends on the ability to forecast accurately the relevant explanatory variables. Prior to adopting any additional forecasting approach, it is therefore important to understand whether the explanatory variables can be forecast with a reasonable degree of accuracy in the short to medium term. For example, if the change in FTE employment is forecast to be 2% but in reality is 1%, this will lead to a prediction (all else equal) that the change in employment income will be 1.5%, when it would in fact be more like 0.75%. Therefore, the finding that any approach fits the historical data does not necessarily mean that, in practice, it has the ability to accurately forecast the future.

Appendix F

Income tax forecasting phase two: review of pension income forecast

Note prepared for Government of Jersey

25 April 2017

1 Introduction

This note provides a review of the Government of Jersey's approach to forecasting short-term pension income, one of the inputs into its income tax forecast. The current approach is based on taking the compound annual growth rate (CAGR) in total pension income in previous years and using this rate to project future changes in total pension income.

Oxera has considered whether an alternative forecasting approach which uses underlying drivers of pension income (rather than trend analysis) might be able to generate a more accurate forecast of total pension income in future. The alternative forecasting approach which we have developed is based on the likely determinants of total pension income, and could be used to complement the current high-level approach to forecasting changes in total pension income. After presenting the results of the alternative approach, we provide our conclusions and recommendations for future forecasting approaches.

2 An alternative approach to forecasting changes in total pension income

The current approach is based on rolling forward historical changes in pension income. In particular, it uses the average growth rate in total pension income over the previous five years to predict next year's growth rate. While this might provide a reasonable prediction in some cases, it will be unable to account for future changes to key determinants of pension income that diverge from previous trends because the prediction is purely backward-looking. We have therefore tested an alternative approach based on the drivers of pension income, which will respond to changes in the forecast of the underlying drivers of pension income.

2.1 Drivers of total pension income

To derive the formula used to generate Oxera's alternative forecast, we considered what the determinants of total pension income are likely to be at a high level.

Pension income comes from three primary sources:

1. defined-benefit pension schemes;
2. defined-contribution pension schemes (including private pensions);
3. state pensions.

While each source of pension income will be affected by slightly different factors (and in slightly different ways), we have identified the following factors could be expected to affect total pension income.

- Earnings—year-on-year changes to the Jersey state pension are currently linked to changes in earnings (or RPI, whichever is higher).[1] Long-term real growth in earnings is also likely to affect the profile of average pension income by age, which in turn will affect the change in total pension income each year resulting from a change in the group of pensioners.
- Inflation—defined-benefit pensions tend to be linked to inflation and some private pensions may be too (e.g. indexed-linked annuities). Jersey state pensions are also linked to inflation in the short term if the inflation rate exceeds earnings growth.
- The population (of pensioners)—the number of people claiming a pension—will affect the total change in pension income. This population is influenced by the (historical) birth and death rate, state pension age and average retirement/pension age.
- Level of lump-sum payments—the portion of pension taken upfront as a lump sum will affect the profile of pension income over time.
- Contribution history (new pensioners)—the value of contributions paid into both defined-benefit and defined-contribution schemes will influence the level of income in retirement for new pensioners, and hence the year-on-year change in total pension income.
- Long-term investment performance—historical investment performance (over a working life) is likely to affect the size of the (defined-contribution) pension pot available to a (new) pensioner upon retirement. The forward-looking risk-free rate will have a material impact on the level of annuity that new pensioners can buy with that private pension pot.

Based on our understanding of these drivers of pension income, we have tested the ability of a number of formulae to match historical observations of changes in pension income.

The final two explanatory variables above are unlikely to have a material effect on the year-on-year change in total pension income (e.g. 40 years to 2014 vs 40 years to 2015). Because of this, we have not included these factors in our analysis. The level of lump sum draw down (and the extent to which this is

[1] Government of Jersey (2016), 'Rise in rate of old age pension', August. https://www.gov.je/News/2016/Pages/PensionRateRise.aspx, accessed 31 March 2017.

changing) could be more material, but we do not have data on this and therefore it is not included in the alternative forecast.

2.2 Alternative forecast

2.2.1 Explanatory variables

Having tested a number of formulae, we consider the following to be the most appropriate for forecasting short-term changes in total pension income:

$$\Delta Pension\ income = \beta_1 \Delta Earnings + \beta_2 \Delta Lagged\ earnings + \beta_3 \Delta Over\ 65$$

where:

- $\Delta Pension\ income$ is the annual percentage change in total pension income;
- $\Delta Earnings$ is the annual percentage change in average (nominal) earnings;
- $\Delta Lagged\ Earnings$ is the annual percentage change in average lagged (nominal) earnings (by one year)—e.g. the value in 2014 will be the percentage difference in earnings between 2013 and 2012;
- $\Delta Over\ 65$ is the annual percentage change in the number of people aged 65 or over (based on 2001 and 2011 Census data[2] and the Jersey population projections in the 2016 release report[3]);
- β_1 is a coefficient which represents the effect that annual changes in average earnings has on annual changes in total pension income;
- β_2 is a coefficient which represents the effect that annual changes in average lagged earnings has on annual changes in total pension income;
- β_3 is a coefficient which represents the effect that changes in the number of people over 65 has on changes in pension income;
- β_4 is a constant term.

2.2.2 Alternatives tested

We also tested regressions that included the change in RPI (as a measure of inflation commonly used to index pension income).[4] However, the coefficient was very close to zero and the inclusion of the RPI variable reduced the fit of the forecast to the actual data. This is likely to be because RPI is correlated with nominal earnings and so this explanatory variable is already captured in the forecast. In addition, we tested a formula which included RPI and real earnings (as opposed to nominal earnings), but found that this forecast did not perform as well as the alternative outlined above. We have therefore excluded the RPI variable.

We also tested a formula which combined the earnings and lagged earnings variable with a two-thirds to one-third weighting respectively. The fact that both earnings and lagged earnings are significant in our formula might be a result of the fact that the exact point at which changes in earnings are measured (for the purpose of inflating pension income annually) is likely to differ from the earnings

[2] Analysis based on summary historical census data supplied by the Government of Jersey.
[3] States of Jersey (2016), 'Jersey population projections 2016 release', October, Table 2.2. https://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/R%20Population%20Projections%202016%2020161013%20SU.pdf, accessed 28 March 2017.
[4] We tested both the addition of RPI to the proposed formula, and a version with RPI and real earnings growth (effectively, a decomposition of the current 'earnings' variable).

data we use for our series, which is based on earnings in the middle of the year (June).

Therefore, the formula uses the two variables together to approximate a single impact, being changes in earnings based on an alternative (to our) 12-month period. Given that the regression suggests an approximately two-thirds to one-third weighting between the two, we tested a single variable, which is the weighted average of the two variables. We found that this regression performed as well as our preferred approach and had very similar values for the coefficients—the only difference between the equations is that in the regression with separate earnings variables, we let the regression do the weighting, whereas in the formula with just one earnings variable, we have manually applied the weighting. Therefore, to avoid locking in the weighting (which may change in future), we keep the variables separate, allowing the formula to move if the data suggests that the weighting has changed.

2.2.3 Regression results

Table 2.1 Alternative approach: regression results

	Coefficient
Change in earnings (β_1)	1.342***
Change in lagged earnings (β_2)	0.662***
Change in number of people over 65 (β_3)	0.905**
Constant (β_4)	-0.335
Observations	14
Adjusted R-squared	0.811

Note: Adjusted R-squared indicates how well observed outcomes are replicated by the forecast, whilst adjusting for the number of predictors so that it is not biased toward forecasts with more explanatory variables.

* statistically significant at the 10% level, ** statistically significant at the 5% level, ***statistically significant at the 1% level

Source: Oxera analysis.

The adjusted R-squared measure is high, indicating that this approach to forecasting explains around 81% of the historical variation in changes in actual pension income. The constant term has a negative coefficient that represents downward pressure on taxable pension income year on year and could possibly be due to pensioners moving from defined benefit to defined contributions schemes (which tend to generate a lower level of pension income).

The results for the alternative forecast above show that a change in average earnings has the largest effect in terms of the size of the coefficients of the main three explanatory variables—specifically, a 10% increase in the change in average earnings will increase the change in pension income by about 13%. The equivalent coefficient for the combined earnings and lagged earnings variable is around two. Therefore, if earnings are growing at a constant rate (i.e. lagged earnings and earnings growth are the same), this means that a 3% increase in annual earnings leads to around a 6% increase in pension income—i.e. total pension income is increasing at double the rate of earnings (assuming no change in the number of people over 65).

This result is not intuitive, as it seems unlikely that this would apply at the individual level (average pension income increasing at twice the rate of earnings growth). We believe that what is being picked up by this coefficient is the impact

of turnover in the group of pensioners. Specifically, it is likely that new pensioners are earning a higher average income than pensioners who have been claiming a pension for many years or that pensioners with lower incomes have a lower life expectancy.

This could be the result of real earnings growth over time (where pension income has not kept pace with this). To pick this impact up more directly would require a bottom-up approach that projected pension income at an individual level.[5] The earnings and lagged earnings growth variables are likely to be correlated with this further explanatory variable (i.e. on average they may be correlated with a long-term trend in real earnings growth), and are hence may be picking up this impact. This being the case, the forecast is likely to be vulnerable to shocks in earnings growth (when earnings and lagged earnings are not consistent with the long-term growth rate, e.g. in the case of very low, or negative, earnings growth).

For example, if earnings were flat, the forecast would predict very small changes in total pension income (reflecting only changes in the population over 65), and would fail to account for the turnover of pensioners which we would expect to increase total pension income even in the absence of earnings growth in the last two years.

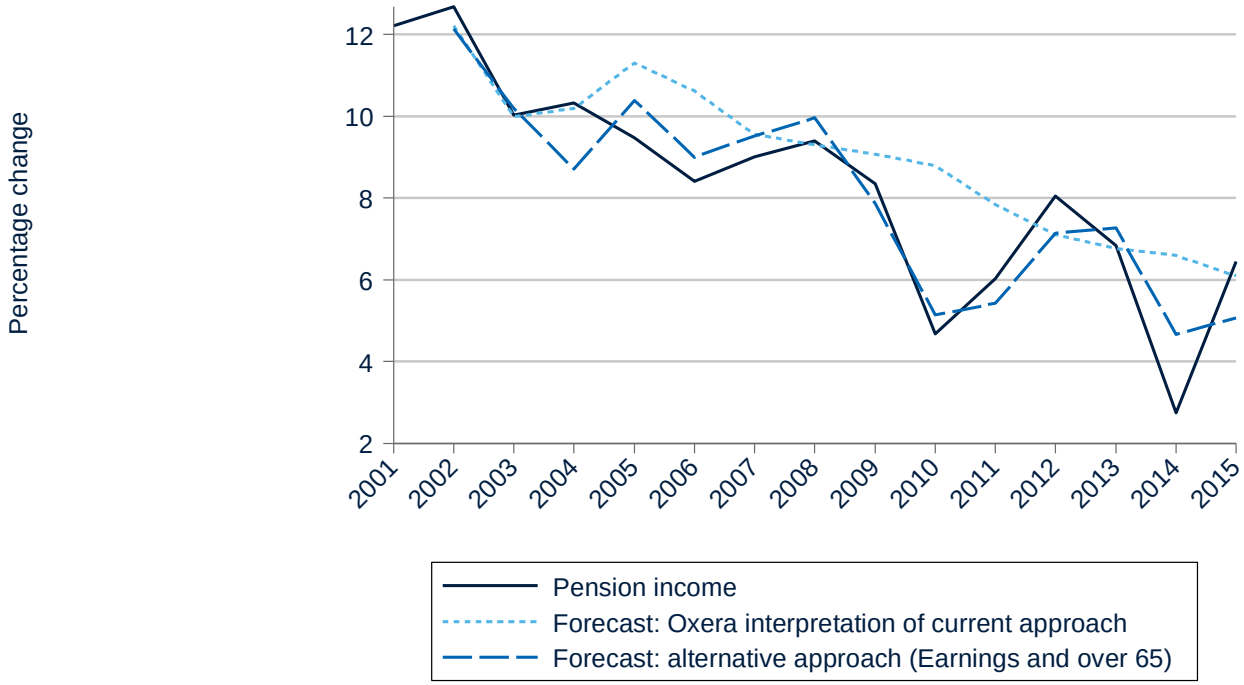
To predict the effect of the profile of pension income by age more accurately, we recommend considering an approach based on individual pension income.

2.3 Forecast performance

Using the results in Table 2.1, we can evaluate how this forecast has performed historically compared with actual values, as illustrated in Figure 2.1.

[5] This would involve making some assumptions about life expectancy and the average pension income of new pensioners.

Figure 2.1 Forecast performance: current approach



Note: The current approach to forecasting changes in pension income is based on the CAGR in pension income over the previous four years—e.g. the 2010 forecast is based on the CAGR between 2005 and 2009. This is Oxera's interpretation of how the Government of Jersey forecasts pension income, although we note that there may be differences from the forecast in this figure compared with what was forecast in practice. An adjustment to the current forecasts for 2014 and 2015 has been made by the Government of Jersey to take account of pensioners being removed from the tax system. We do not have the data required to produce an estimate of the forecasts in 2001.

Source: Oxera analysis.

The figure above shows that the alternative forecast fits historical data on annual changes to total pension income reasonably well. Table 2.2 shows that the average difference between actual and forecast changes in total pension income (based on absolute values) is 0.8 percentage points compared with 1.2 percentage points when the current approach is used.

Table 2.2 Forecast performance: alternative approach

	Change in pension income			Change in pension income	
Year	Actual	Forecast (alternative approach)	Difference (forecast-actual)	Oxera interpretation of current approach	Difference (forecast-actual)
2001	12.2				
2002	12.7	12.1	-0.5	12.2	-0.5
2003	10.0	10.2	0.2	10.0	0.0
2004	10.3	8.7	-1.6	10.2	-0.1
2005	9.5	10.4	0.9	11.3	1.8
2006	8.4	9.0	0.6	10.6	2.2
2007	9.0	9.5	0.5	9.6	0.5
2008	9.4	10.0	0.6	9.3	-0.1
2009	8.4	7.9	-0.5	9.1	0.7

2010	4.7	5.1	0.5	8.8	4.1
2011	6.0	5.4	-0.6	7.8	1.8
2012	8.1	7.1	-0.9	7.1	-1.0
2013	6.8	7.3	0.4	6.8	-0.1
2014	2.7	4.7	1.9	6.6	3.8
2015	6.4	5.1	-1.4	6.1	-0.3
Average			**0.8**		**1.2**

Note: All units are percentage point changes. The average figure is based on absolute differences. We do not have the data required to produce an estimate of the alternative approach in 2001.

Source: Oxera analysis.

3 Refining the forecast

Using the alternative and current approach in tandem is likely to provide the Government of Jersey with a more rounded set of information about how total pension income is likely to evolve in the short term. While the alternative approach set out in this note takes more explicit account of the drivers of changes in pension income, as highlighted above, it is likely to be less resilient than the current approach to movements in earnings growth year-on-year away from the long-term trend, which may reduce the ability of the alternative model to forecast changes in total pension income accurately in future.

We believe that it would be worth exploring a more detailed bottom-up approach (at the individual or demographic group level), as this may enable a more accurate forecast to be generated.

In particular, the impact of pension income by age could be examined in more detail since average pension income may differ by age group (which could be driving the large coefficients on the two earnings variables, as discussed above). This theory could be tested using detailed individual/ household data on pension income, and it may be possible to use this data to predict the difference between the pension income of those entering retirement and the average of the group as a whole. It would also allow changes to the retirement age and life expectancy to be more explicitly incorporated into the analysis.

4 Conclusion

In conclusion, the alternative forecast proposed by Oxera appears to fit the historical data better than the existing approach. However, the alternative approach proposed is likely to be less resilient to significant future changes in earnings growth than the current approach (as described above). We would therefore propose using the two together.

Finally, we note that the ability of any formula to predict future outcomes accurately is dependent on the ability to forecast the explanatory variables used in the formula (in this case, the size of the retired population and earnings growth).

APPENDIX G

INCOME TAX FORECASTING GROUP

CURRENT YEAR BASIS (CYB) TAX PAYERS FORECAST 2017 - 2021

Introduction

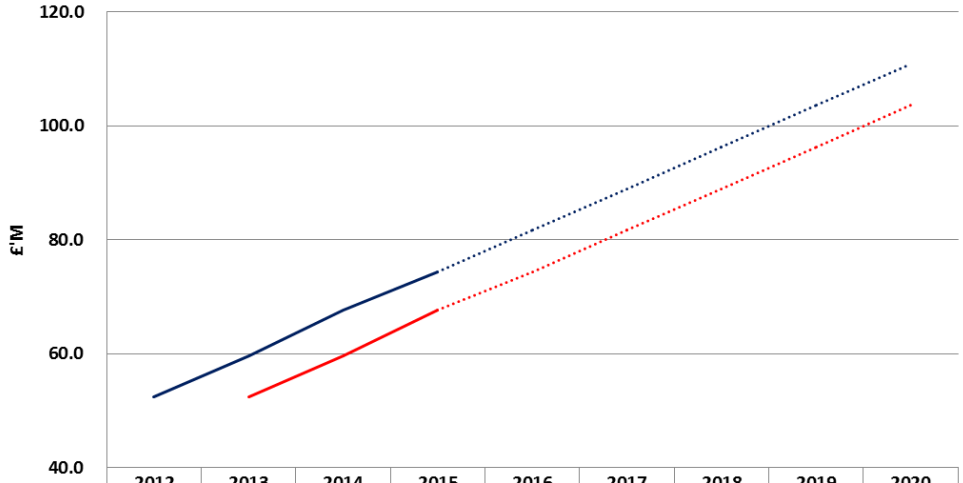
This paper provides a CYB forecast update to 2021 taking into account the year on year increase effected by the policy implemented in 2015 to recognise CYB in the current year as opposed to one year in arrears. It follows the updated paper submitted to IFG in May 2016 following the decision to use ITIS as the measure for CYB estimate 2015 instead of the original 3rd copy basis in which deficiencies were identified.

Background

CYB income as a total proportion of tax payers will increase going forward due to all new and returning tax payers being allocated to CYB. At present the Taxes Office is only able to provide high level indications related to tax payer demography and therefore exact reasons and associated quantum relating to the year on year increase is work in progress.

Initial results in 2015 using the 3rd copy method showed a large increase of £10.4 million between 2015 and 2014 compared to more stable increases of between £6 million and £7 million in previous years. After a deficiency was discovered in the use of the 3rd Copy method to estimate CYB, and following the decision to use ITIS payments as a more reliable method for 2015, the year on year increase reduced to £6.7 million. This was rounded to £7 million to be used as the year on year increase effect of recognising CYB one year earlier (i.e. in the current year). **Figure 1** below shows the forecast 2016 to 2020 extrapolating 2015 outturn using the ITIS method also showing the £7 million effect of recognising CYB in the current year:

Fig 1. New Basis vs Old Basis - Forecast



	2012	2013	2014	2015	2016	2017	2018	2019	2020
New Policy	52.4	59.6	67.7	74.3	81.6	88.9	96.2	103.5	110.8
Old Policy		52.4	59.6	67.7	74.3	81.6	88.9	96.2	103.5

Recommendation

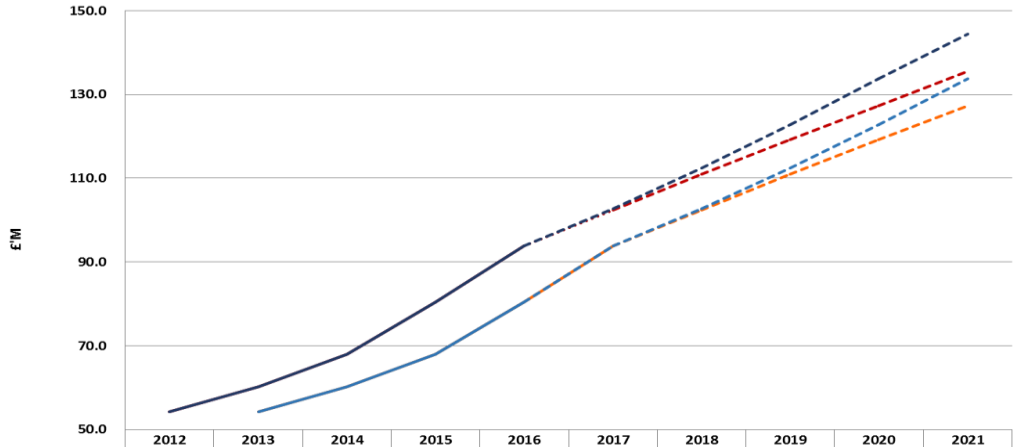
The reporting function creating the 3rd copy has been corrected for 2016 year end and used to establish the CYB estimate outturn of £93.9 million. The final assessment for 2015 CYB income is £80.4 million resulting in a year on year (estimate) increase between 2015 and 2016 of £13.5 million.

Appendix G – Current Year Basis (CYB) Forecast 2017-2021

Annex A provides analysis on CYB income for each year of assessment from its introduction in 2006 through to 2016. It shows that, save for a spike in 2011, the variations in the year on year increase appear to be cyclical in nature rather than constant. When taking this into consideration, and in the absence of further information at this stage, it would be prudent to not assume the £13.5 million variation between 2015 and 2016 is likely to increase further or maintain at that level between 2017 and 2021. Instead, using the historic variations to establish a rolling average is probably better suited as the extrapolation basis to 2021 and effect of recognising CYB in the current year.

To that extent **Figure 2** below shows total final CYB income for 2012 to 2015 (updated), and estimate 2016, projecting to 2021 using a five year (2011-2016) and ten year (2007-2016) rolling average increase:

Fig. 2 Rolling 5 & 10 Yr Average Forecast 2017-21

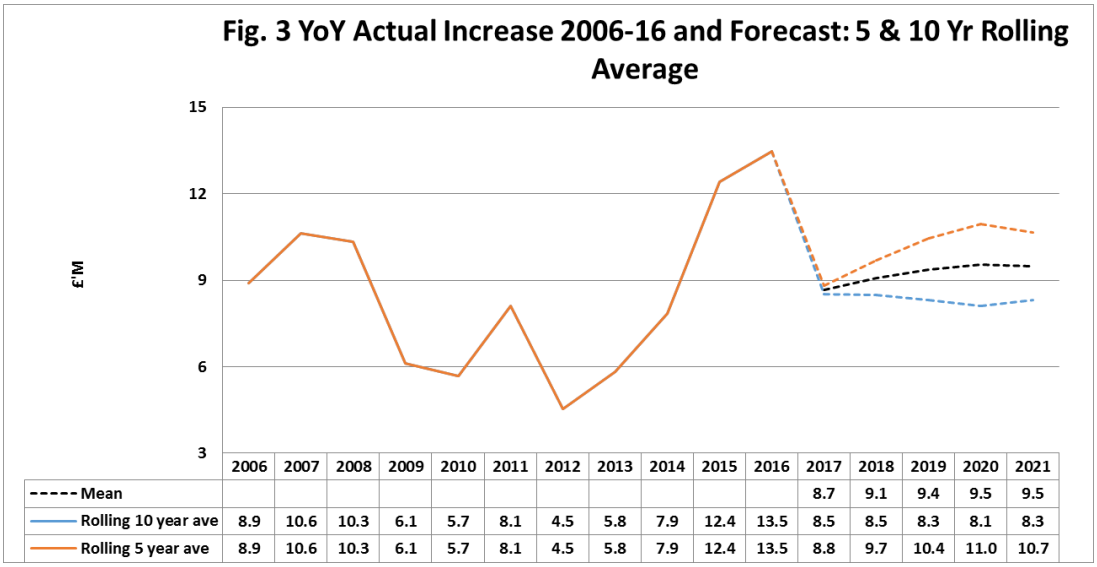


	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
10 Yr New Policy	54.3	60.1	68.0	80.4	93.9	102.4	110.9	119.2	127.3	135.6
10 Yr Old Policy		54.3	60.1	68.0	80.4	93.9	102.4	110.9	119.2	127.3
5 Yr New Policy	54.3	60.1	68.0	80.4	93.9	102.7	112.4	122.8	133.8	144.4
5 Yr Old Policy		54.3	60.1	68.0	80.4	93.9	102.7	112.4	122.8	133.8

Figure 2 shows that from 2017 the two rolling averages used to estimate the forecast begin veer away from one another and in 2021 the forecast using the five year rolling average increase is £8.8 million higher cumulating £20.6 million more in tax 2017 - 2021. This confirms the year on year increases have been greater in recent years than earlier years (see also **Annex A**).

Figure 3 below shows the actual increase year on year 2006-2016 and effects of the different five and ten year rolling averages:

Fig. 3 YoY Actual Increase 2006-16 and Forecast: 5 & 10 Yr Rolling Average



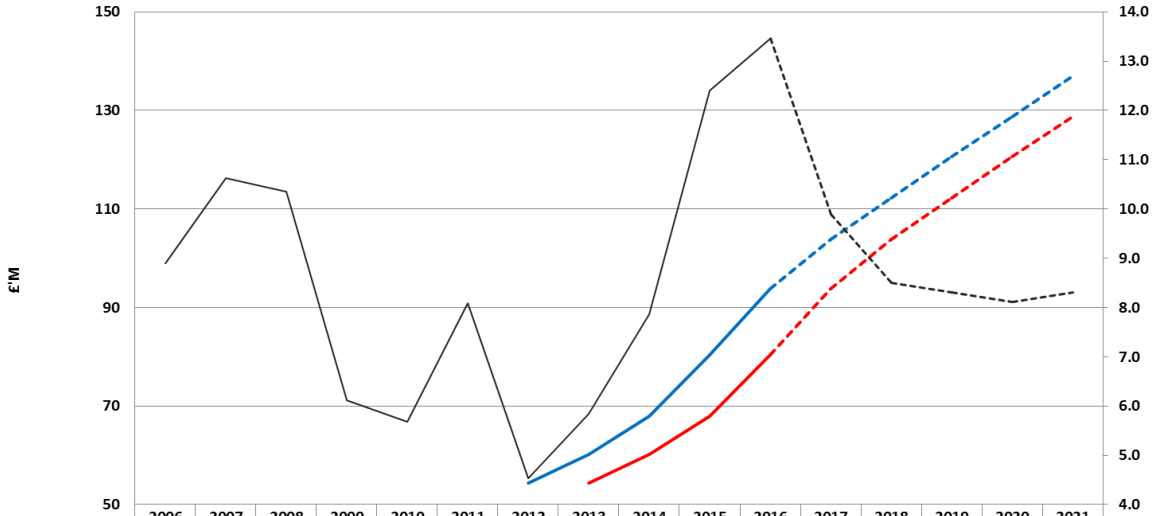
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Mean												8.7	9.1	9.4	9.5	9.5
Rolling 10 year ave	8.9	10.6	10.3	6.1	5.7	8.1	4.5	5.8	7.9	12.4	13.5	8.5	8.5	8.3	8.1	8.3
Rolling 5 year ave	8.9	10.6	10.3	6.1	5.7	8.1	4.5	5.8	7.9	12.4	13.5	8.8	9.7	10.4	11.0	10.7

There remains a high number of variables with potential to effect CYB year on year making the forecast difficult to predict. However, the year on year movements between 2006 and 2016 show good correlation with both real GVA and population growth, and as referred to by FPP, economic assumptions showing real growth of 1.5% for 2016 and 1% for 2017 followed by a long term trend of 0% real GVA 2018 onward.

Therefore the recommendation to IFG is to use the average year on year increase between 2013 and 2016, being years of economic growth for the 2017 forecast (£9.9 million or £10 million rounded) and then to apply the ten year rolling average for 2018 onwards (£8 million rounded).

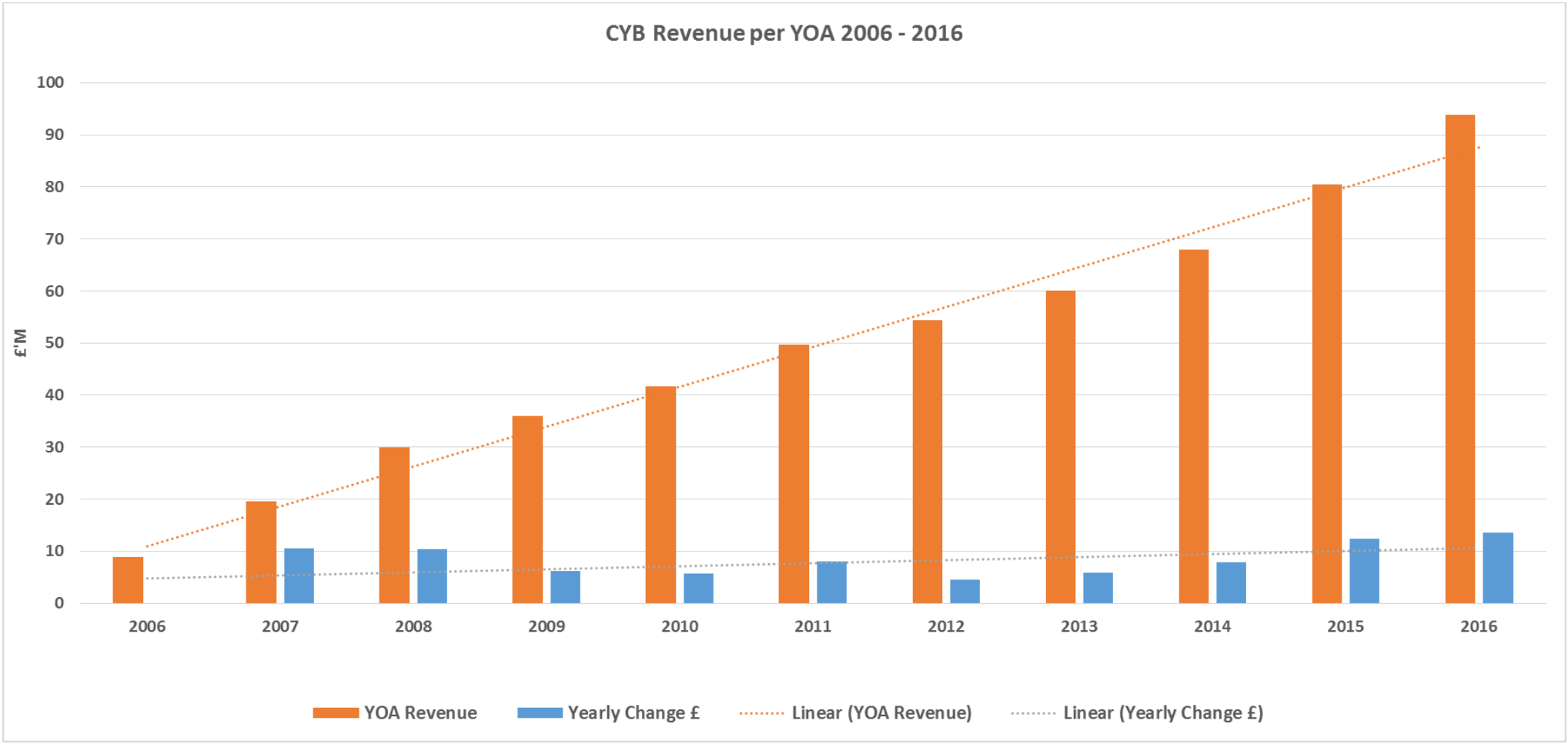
Figure 4 below shows the recommended forecast and year on year effect of current year recognition using the new basis proposed in the paragraph above (note the year on year increase is shown back to 2006 for a trend perspective):

Fig. 4 Recommended Forecast 2017-2021



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
New Policy							54.3	60.1	68.0	80.4	93.9	103.7	112.2	120.6	128.7	137.0
Old Policy								54.3	60.1	68.0	80.4	93.9	103.7	112.2	120.6	128.7
Increase	8.9	10.6	10.3	6.1	5.7	8.1	4.5	5.8	7.9	12.4	13.5	9.9	8.5	8.3	8.1	8.3

ANNEX A


CYB Revenue per YOA 2006 - 2016
£'M
100
90
80
70
60
50
40
30
20
10
0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
YOA Revenue
Yearly Change £
Linear (YOA Revenue)
Linear (Yearly Change £)

Appendix H

Social Security Contributions Quarter D 2016

Executive Summary

The total numbers of contributors have increased by 1.2% compared to QD 2015 to 53,159.

The total amount of contributions collected has increased by 3.3% compared to QD 2015.

Adjusting for contributor numbers, this suggests an increase in underlying earnings of 2.0%. The increase of Average Earnings expected through 2016 is 2.1%.

QD Average Volumes	2015	2016	Increase
Below SEL (receiving Supp)	34,185	34,652	1.4%
Above SEL	11,405	11,629	2.0%
Other	6,915	6,878	-0.5%
Total	52,505	53,159	1.2%
QD Total Contribution Value (£'000)	**2015**	**2016**	**Increase**
Below SEL	48,037	49,554	3.2%
Above SEL	1,800	1,906	5.9%
Total	49,837	51,460	3.3%
QD Total Supplementation Value (£'000)	**2015**	**2016**	**Increase**
Supplementation	18,844	19,574	3.9%
Total	18,844	19,574	3.9%