Assessment of BT's regulated profitability between FY 2006 and 2015

A REPORT PREPARED FOR VODAFONE

October 2015

Assessment of BT's regulated profitability

Summary

The level of prices for communications services is an important indicator of the effectiveness of the overall regulatory framework, which needs to balance the consumer benefits of lower prices with the need to provide incentives to invest in networks and operate these networks efficiently. In this report, we analyse data from BT's regulatory financial statements (RFS) since the implementation of the 2005 Ofcom strategic review (of telecommunications) to assess the effectiveness of the regulatory framework in achieving this balance.

This analysis is based on comparing the level of profitability for BT's regulated services, expressed as a return on capital, against Ofcom's estimate of BT's cost of capital. Our analysis shows that over the period April 2006 to March 2015:

- reported returns on BT's regulated services overall were consistently above the rate required to compensate investors, as determined by Ofcom (**Figure 1**). More specifically, in the past 10 years BT made c. £18.9bn profit from regulated services, of this £6.5bn was over and above the determined cost of capital;
- there is no clear trend of a reduction in overall returns, despite a number of actions by Ofcom to constrain prices over the period (**Figure 2**); and
- there have been some changes over time in the composition of the excess returns, with the excess returns concentrated on those services used by competitors to BT as inputs to corporate services in the later part of the period.

Our analysis is based on BT's attribution of costs to services and markets, which Ofcom has recently consulted on. Ofcom's analysis suggests that BT inappropriately attributed costs, which significant overstated the cost base for regulated services and hence understated profitability. For example, for 2013/14 Ofcom suggests that approximately £262m costs were misattributed to regulated services[1]. If BT's costs were reduced to reflect this misattribution, it would further increase BT's return on capital employed from 17% to 19% in 2013/14. Therefore, the level of profitability reported in this report may understate the level of profitability measured using an appropriate cost base.

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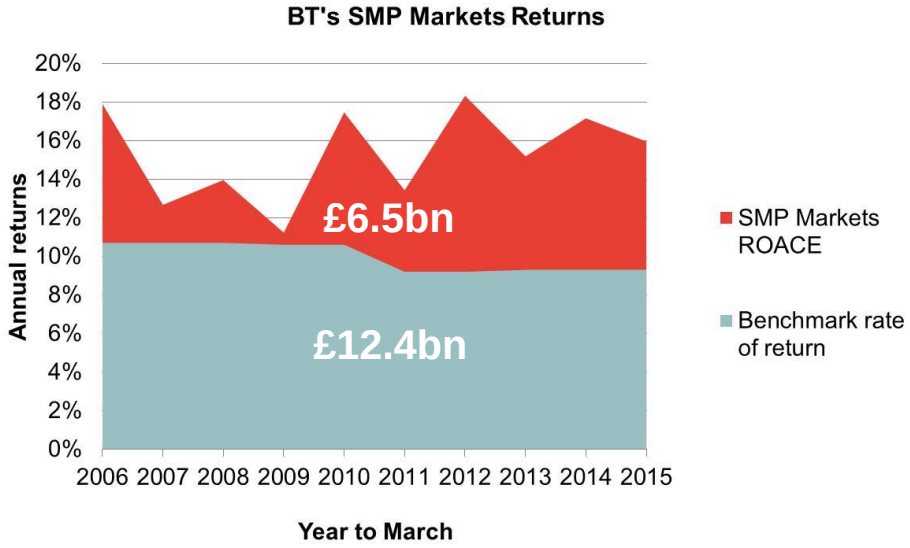
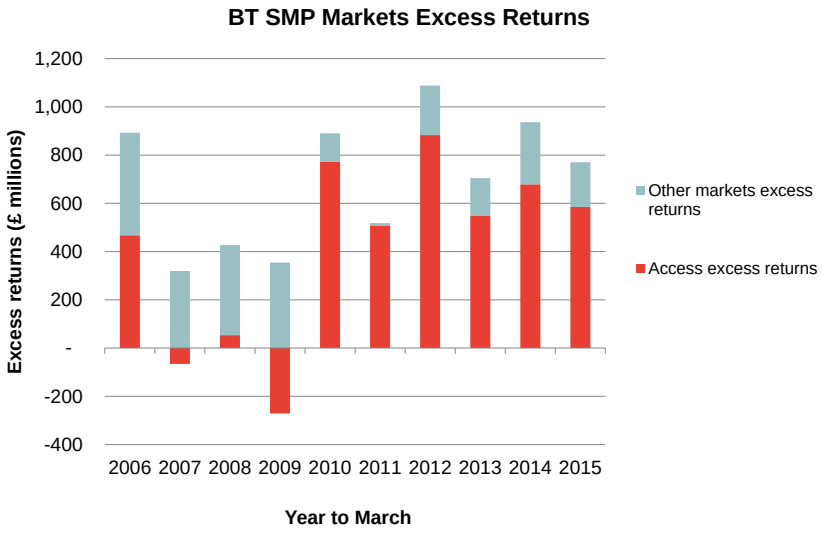
1 Ofcom (2015) Review of BT's cost of attribution methodologies consultation, Table 1.1, page 3

Figure 1. BT's SMP Markets returns[2]



Source: Frontier analysis of BT RFS

Figure 2. BT's excess returns for access and other wholesale markets



Source: Frontier analysis of BT RFS

[2] In our analysis, we use restated RFS data for 2013 and 2014

Structure of this paper

In this paper we present an analysis of publicly available information, to show the returns from BT's regulated services compared to a benchmark cost of capital.

The structure of the paper is as follows:

- we begin by explaining the scope of our study;
- we then present our methodology; and
- we present key results.

Scope of study

SMP Markets

Under the EU electronic communications framework, Ofcom can impose ex ante regulation on operators which have been found to have Significant Market Power (SMP) in defined relevant markets.

In a number of markets where BT operates, Ofcom has found that BT has SMP. As a result, Ofcom has imposed a number of ex ante remedies including price regulation and requirements to produce accounting information on the services within this market[3]. The accounting information is published in BT's RFS.[4] For the purposes of this paper we have defined the scope of BT's regulated services to be those services in markets where BT has been designated to have SMP, for which BT is required to publish information in the RFS. The RFS are published on an annual basis and are primarily intended to provide transparency for its stakeholders (including Ofcom and BT's customers) to provide confidence that BT is complying with its SMP obligations (including cost orientation and non-discrimination obligations).

Table 1 below sets out the latest list of markets where BT faces SMP regulation and the key products which are regulated[5].

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3 In addition to a number of other regulatory obligations such as requirements to provide access, publish reference offers or to notify technical information.

4 See: http://www.btplc.com/thegroup/RegulatoryandPublicaffairs/Financialstatements/index.htm

5 In general, the finding of SMP for BT includes the UK excluding the Kingston upon Hull area.

Table 1. Key SMP Markets

SMP market	Key products
Business connectivity, wholesale – traditional Interface	Traditional interface symmetric broadband origination (TISBO)
Business connectivity, wholesale – alternative Interface	Alternative interface symmetric broadband origination (AISBO)
Narrowband Wholesale analogue / ISDN 2, ISDN 30 exchange lines	Analogue Wholesale Line Rental, ISDN Wholesale Line Rental
Call origination	CPS, indirect access, NTS retail uplift
Geographic call termination	Geographic call termination
Wholesale Local Access	Local Loop Unbundling (LLU) rentals and ancillary services Virtual Unbundled Local Access (VULA)
Wholesale Broadband Access in geographic areas where competitive conditions are not present ("market A")	Bitstream access

Source: Ofcom market review statements

In general, the information published by BT in the RFS should align with the relevant markets where BT has been found to have SMP at the time. As the defined markets and SMP findings change over time this can result in discontinuities in the RFS data over time[6]. However, as this affects both the numerator and denominator, the overall reported returns should still be a reasonable indicator of the effectiveness of the regulatory framework[7].

BT produces the RFS based on its own cost attributions. Ofcom typically applies adjustments to the RFS results when setting charge controls, where it considers the attribution methods used by BT are not appropriate. Ofcom is currently consulting on BT's cost attribution methodologies and is proposing to issue a direction, which would specify changes that BT will be required to make to its cost attribution rules to ensure that the RFS reflects Ofcom's latest decisions.

6 For example the exclusion of WBA services in certain geographic areas or the inclusion of VULA services following the roll out of BT's FTTC network.

7 The changes in SMP have tended to be small relative to overall regulated revenues, with a large proportion by revenues of the services currently within the SMP markets included consistently since 2006 so changes in mix are unlikely to drive the results.

Ofcom estimates that BT inappropriately attributed costs which significant overstated the cost base for regulated services, hence understated profitability. For example, for 2013/14 Ofcom suggests that approximately £262m costs were misattributed to regulated services[8]. If BT's costs were reduced to reflect this misattribution, it would further increase BT's return on capital employed from 17% to 19% in 2013/14. Therefore, the level of profitability reported in this report may understate the level of profitability measured using an appropriate cost base.

Price regulation on SMP markets

Effective price regulation is a key part of the regulation of SMP markets. Absent such regulation there is a risk that BT would be able to set excessive prices to its customers (including wholesale customers) potentially resulting in higher prices for end users and impeding competition in downstream markets. For example, Ofcom noted in its Fixed Access Market Reviews that "*we consider it appropriate to require BT to continue to provide specific forms of network access in each of the wholesale fixed access markets* […] *and that most of these wholesale inputs and certain related services should also be subject to appropriate pricing remedies* ***to ensure that BT does not set excessive prices to its competitors***". [9] [Emphasis added] When assessing whether prices in SMP markets are excessive Ofcom considers whether BT has been able to earn returns in excess of its cost of capital[10].

In price regulating ex ante BT's products and services Ofcom uses a range of tools (often in combination) summarised in **Table 2** below.

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8 Ofcom appointed Cartesian to review BT's cost attribution. Cartesian has identified a number of issues with BT's cost attribution methodologies. Cartesian's findings have informed Ofcom's proposed changes.

9 Ofcom (2014) Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 Statement, Volume 1, paragraph 8.14.

10 For example: "***BT's reported profitability was significantly in excess of its cost of capital***. *We believed that this was prima facie evidence that wholesale charges for ISDN30 might be* ***above the competitive level*** [Emphasis added]". Ofcom (2013) Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 Statement, Volume 1, paragraph 4.7.

Table 2. Ofcom price regulation tools[11]

Regulatory tool	Approach
Multi-year charge control	Prices are capped such that they are below a glide path such that prices are forecast to converge to costs by the end of the charge control
Basis of charges obligations / Cost orientation obligation	BT is obliged to demonstrate that prices reflect costs
Safeguard cap	Price rises are limited (not based on explicitly modelled costs)

In addition to price regulation, there are other types of regulation applied to BT in markets where it has SMP. For example, in relation to the FTTC wholesale local access product – VULA – Ofcom allows BT pricing flexibility, but seeks to protect competition at the retail level by setting out the minimum VULA margin BT must maintain[12].

Our methodology

In order to assess profitability of BT's regulated services we have calculated the Return on Average Capital Employed (ROACE), which is defined as Earnings Before Interest and Tax (EBIT) as a percentage of the mean capital employed:

$$ROACE = \frac{Regulatory\ revenue - Regulatory\ operating\ costs}{Regulatory\ Mean\ Capital\ Employed}$$

We then compared ROACE against BT's cost of capital, which is periodically determined by Ofcom. Returns on Capital Employed above the cost of capital suggest that BT earns excess returns[13].

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11 In addition, BT faces a number of pricing obligations related to the structure of prices which are aimed at preventing it from distorting competition: non-discrimination obligations (which ensure that prices set to BT's downstream operators are the same as those set to its downstream competitors; or "fair and reasonable" obligations (which can prevent discriminatory or predatory pricing practices).

12 Ofcom (2015) "Fixed Access Market Review: Approach to the VULA Margin" Statement

13 More details on our methodology are provided in the Annex

We have included revenues as reported by BT in the respective RFS, which reflect the prices charged by BT when the services were delivered[14]. The treatment of costs and the cost of capital are discussed below.

Measuring regulatory costs

When setting charge controls, Ofcom needs to determine the appropriate level of costs for a given service. For the majority of BT's regulated revenues the charge control is based on BT's own costs. Although in some cases, such as call termination and origination, this cost base is largely set with reference to an independent ("bottom up") model of a hypothetical network.

In order to define the appropriate level of costs for BT, one needs to establish:

- the appropriate method for determining costs for regulated services ("cost base"); and
- the method for attributing costs between services or groups of services.

Cost base

For operational expenditure, Ofcom generally uses BT's reported costs, but applies a forward looking estimate of efficiency gains. To determine the cost base for assets, i.e. depreciation and capital employed, Ofcom generally uses current cost accounting (CCA), but uses a regulatory asset value (RAV) for duct in the local access network[15]. The latest RFS published in July 2015 use a cost base consistent with the regulatory approach. In previous years the RFS did not use a RAV basis and we have applied an adjustment to the data published in the RFS based on Ofcom's 'RAV Adjustment' model.

Benchmark rate of return

Charge controls are set such that over time prices are expected to converge to costs, which is equivalent to the ROACE being equal to the determined cost of capital. Periodically Ofcom determines the appropriate cost of capital for given charge controls as a weighted average cost of capital (WACC). This cost of capital therefore provides a benchmark of the return that BT's shareholders require.

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14 For some markets where BT had cost orientation obligations, BT has been found later to have set prices above a cost oriented level and has been required to make repayments to the purchasing communication providers. The overcharges include £151 million for certain Ethernet services and repayments of £42 million for certain partial private circuit services. We have not adjusted the reported revenues to take account of the subsequent repayment.

15 Ofcom previously also used a RAV for copper cable in the local access network, but this RAV is now equal to the CCA valuation.

The determined costs of capital are found in Ofcom publications on the regulation of BT's SMP services[16]. We have used the determined cost of capital for BT Group as a whole[17]. As Ofcom periodically reviews the cost of capital, the cost of capital has changed over the period. In order to provide a consistent approach for each financial year we have used determined cost of capital at the beginning of each financial year as stated in relevant regulatory decisions.

Key results

We first present information on revenue, costs and mean capital employed, and then present BT's returns on regulated services and excess returns (calculated as the difference between BT's returns and the cost of capital), both in aggregate and by the SMP market. In our analysis, we look separately at 'Access markets', which include business connectivity markets (AISBO, TISBO), ISDN and WLR/WLA as a proxy for the profitability of Openreach's regulated business. Services in other SMP markets (call origination, geographic call termination, etc.) are typically delivered by divisions other than Openreach.

Revenues, costs and mean capital employed

Absolute revenues, costs and capital employed will be affected by changes in market definitions and SMP findings. For example, revenues and costs for 'Access Markets' increased between 2013 and 2014 due to the inclusion of "other WLA", which includes VULA services, in the published RFS.

The absolute level of revenues in non-Access markets published in the RFS has been reduced by the re-designation of some wholesale markets as non-SMP markets in 2010 (local-tandem conveyance and transit market), and in 2011 (WBA market 3)[18]. In 2014, WBA market was further redefined, with Markets 1 and 2 being combined into one market – Market A.

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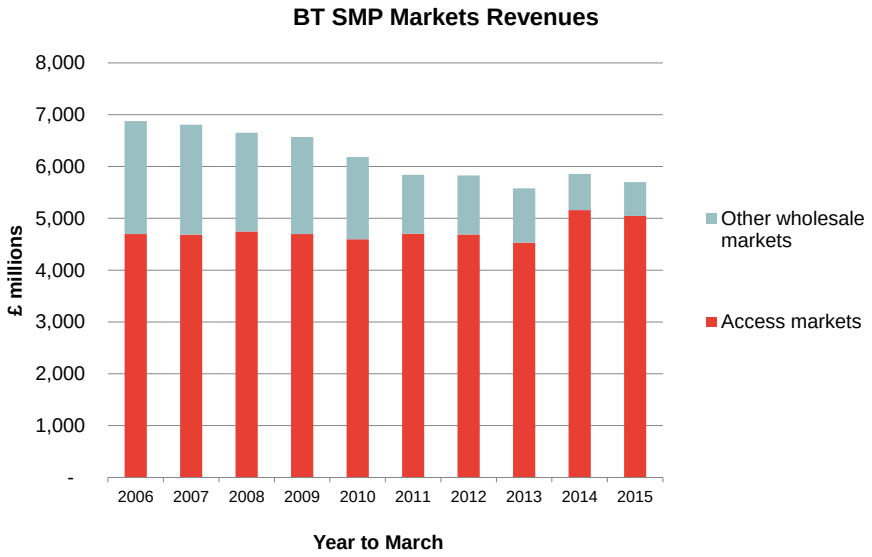
16 Sources: For 2006-2008, Ofcom (Ofcom's approach to risk in the assessment of cost of capital - Final Statement, Ofcom, 18/08/2005. Source: For 2009-2010: A new pricing framework for Openreach, Statement, 20092012: Source for 2011-12: WBA charge control, Statement 2010, Source: For 2013-15: Fixed access market reviews: Approach to setting LLU and WLR Charge Controls Annexes Table A15.1: Estimate of BT WACC, March 2013.

17 Ofcom determines a separate, lower, cost of capital for certain services delivered by BT's Openreach division from other regulated and unregulated services ("rest of BT"). As such the cost of capital across SMP markets would be expected to be somewhat lower than the determined cost of capital for BT Group.

18 See: BT (2012) Primary Accounting Documents page 4

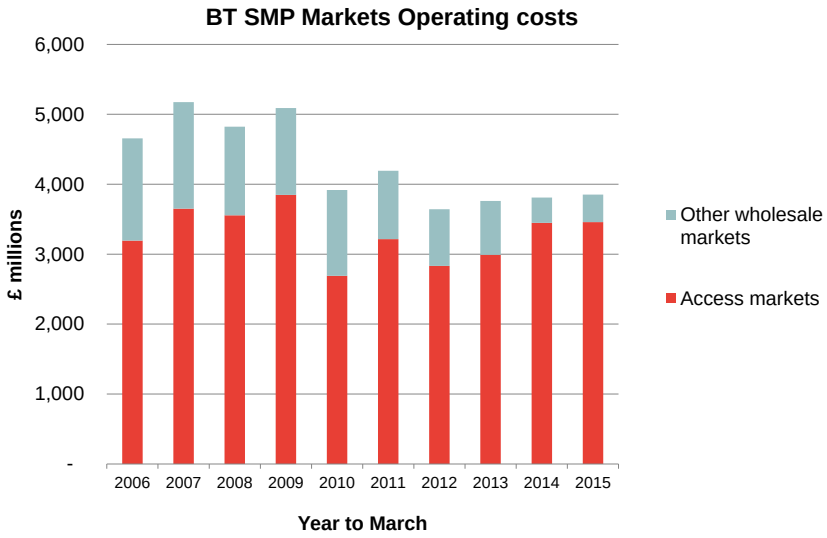
After experiencing a decline between 2006 and 2010, largely in non-access services, revenue was fairly stable between 2011 and 2015 (**Figure 3**).

Figure 3. BT SMP Markets Revenue



Source: Frontier analysis of BT RFS

Figure 4. BT's SMP Markets Operating costs



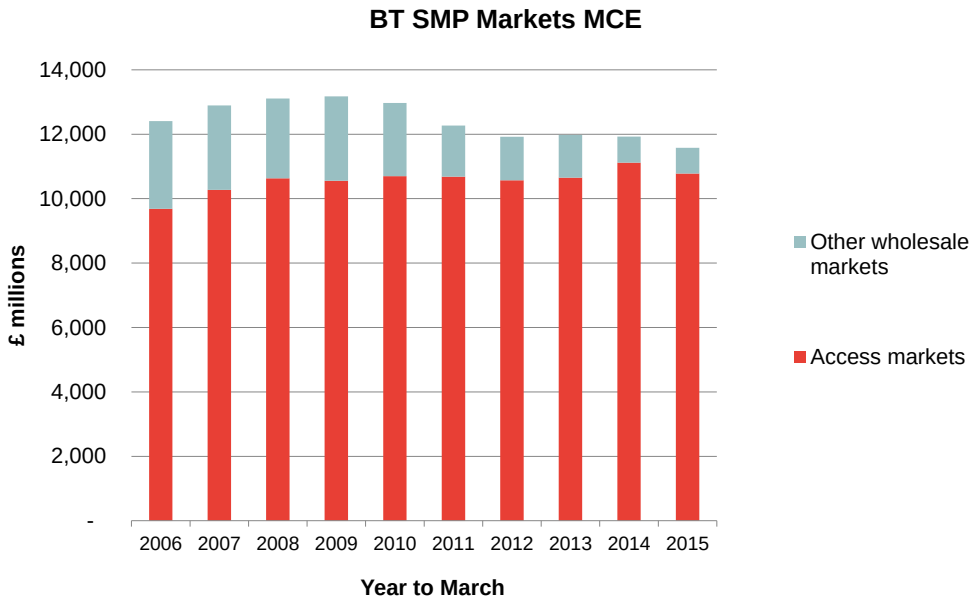
Source: Frontier analysis of BT RFS

Figure 4 presents BT's SMP markets operating costs. In the first part of the period operating costs showed considerable volatility, which was driven by non-

cash capital charges – holding gains and losses which are included in operational costs under CCA. This volatility was driven by a combination of volatility in the input prices used to revalue assets[19] and changes in accounting rules, which led to significant holding gains in 2007 and 2009. Since 2012/13, the valuation methodology for duct and copper has been changed from an absolute basis, reflecting a BT estimate of the replacement cost of the network, to an indexed RPI approach[20]. This has significantly reduced volatility in operating costs in the last four years.

Figure 5 shows BT's SMP Mean Capital Employed. Mean Capital Employed was relatively stable throughout the period, with some volatility in the first part of the period reflecting movements in BT's estimate of replacement costs.

Figure 5. BT's mean capital employed in SMP markets



Source: Frontier analysis of BT RFS

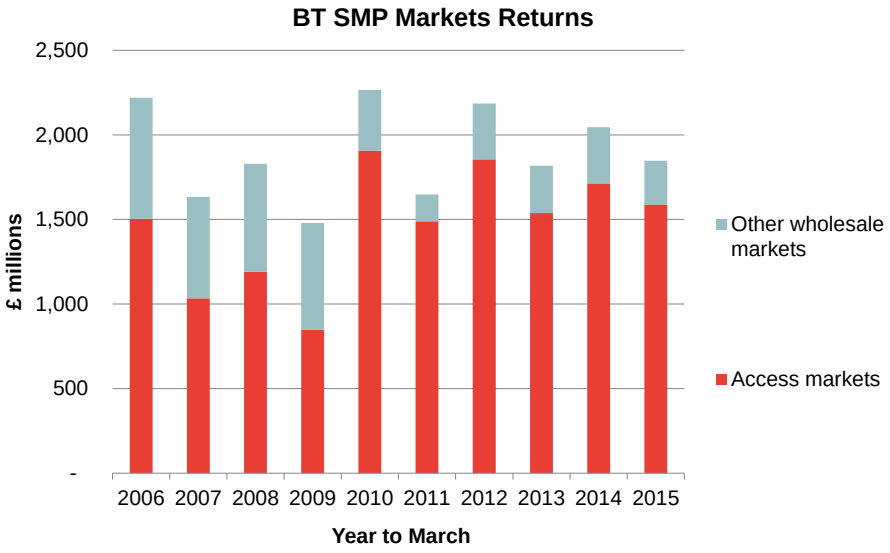
19 In particular copper cable which in turn were reflecting volatility in copper commodity prices

20 RFS 2013, page 11

BT's SMP returns

Figure 6 sets out BT's earnings for the SMP markets in aggregate (i.e. revenue less regulatory operating costs). Volatility in the earlier years in BT's earnings largely reflects volatility in operating costs (as discussed above).

Figure 6. BT's earnings in SMP markets

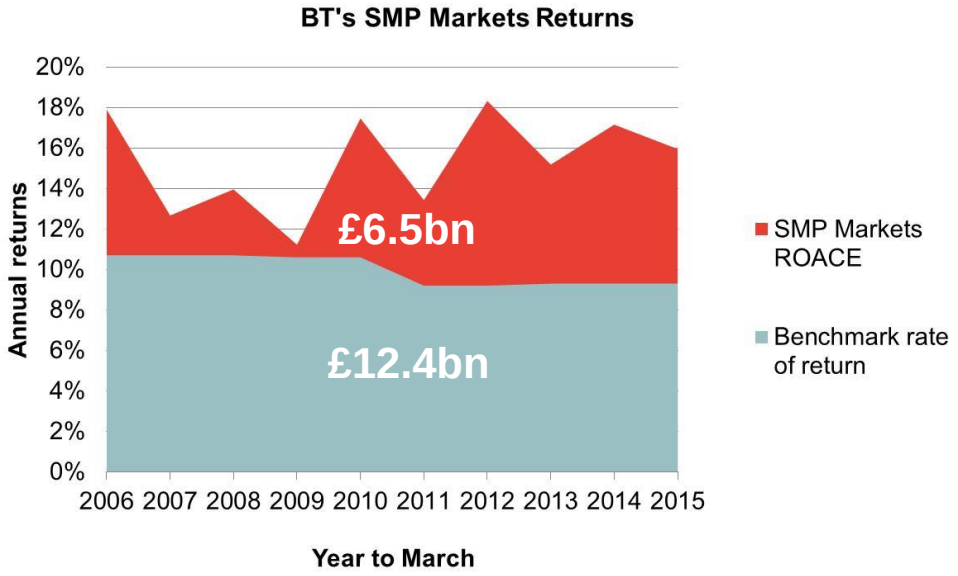


Source: Frontier analysis of BT RFS

Figure 7 compares BT's ROACE for SMP markets with the benchmark cost of capital for the period since 2005/06. This shows that BT's ROACE for SMP markets has been consistently above the benchmark cost of capital. Over the period BT has earned revenues of £6.5 billion more than if its returns on capital were consistent with its WACC.

There is little evidence of a downward trajectory on BT's overall returns which would be expected if charge controls were bringing BT's prices in line with costs.

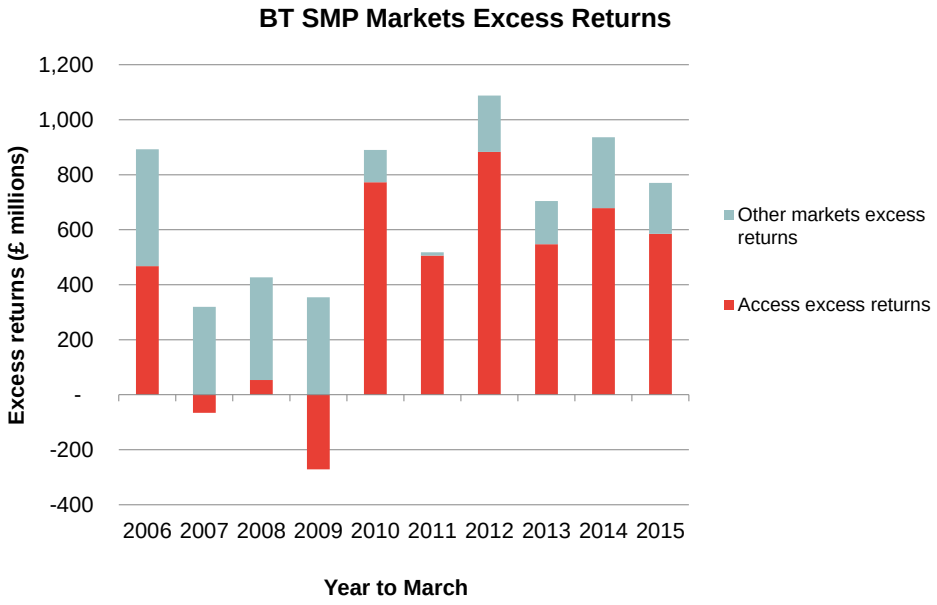
Figure 7. BT's regulatory return on capital compared to the benchmark rate (year to March)



Source: Frontier analysis of BT RFS

Figure 8 shows BT's returns which are in excess of the benchmark cost of capital, split into access markets excess returns and other regulated markets excess returns. Access market returns can be used as a proxy for returns generated by Openreach. The graph shows that in the latter part of the period, excess returns have largely been generated within Openreach.

Figure 8. BT's excess returns for access and other wholesale markets



Source: Frontier analysis of BT RFS

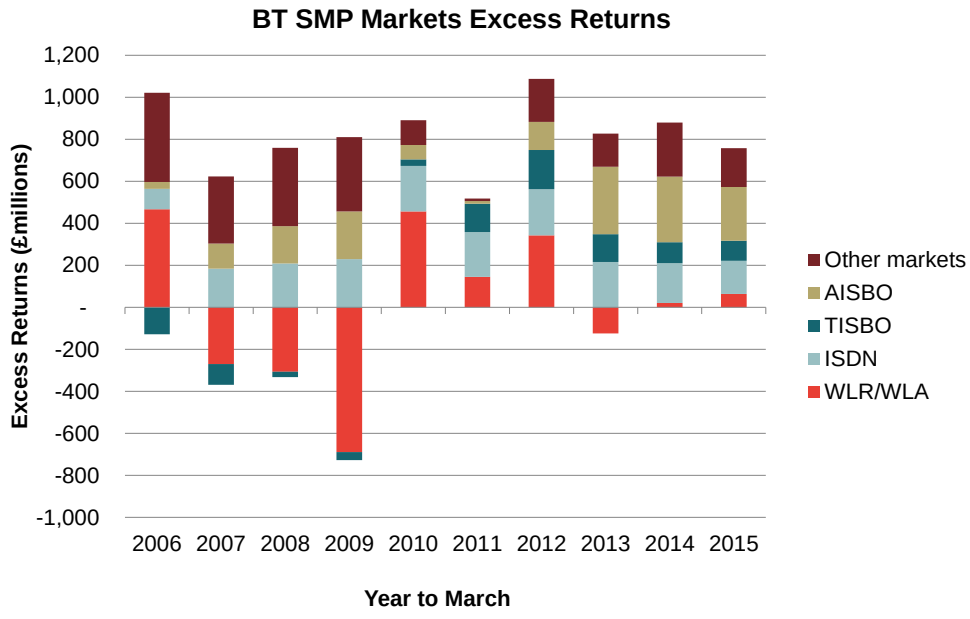
In order to better understand what drives BT's excess profitability in SMP markets we disaggregate BT's excess returns by market type (**Figure 9** and **Table 3**). This shows some markets consistently generated positive excess returns such as ISDN and the business connectivity markets (TISBO and AISBO).

Table 3. Total BT's excess profitability between 2006 and 2015 by market

	Excess profitability (£ billions)
WLR/WLA	0.1
AISBO	1.7
TISBO	0.4
ISDN	1.9
Other markets	2.4
Total excess profitability	6.5

Source: Frontier analysis of BT RFS

Figure 9. Analysis of excess returns in SMP markets by type of market



Source: Frontier analysis of BT RFS

Figure 9 shows that BT's WLA returns were volatile prior to 2010, but became more stable, since the adoption of the indexation approach to valuing duct and copper (discussed above). We note that in the last few years the WLA returns were in line with the benchmark cost of capital suggesting that Ofcom was

successful at regulating the WLA market with charge controls bringing prices into line with costs.

We also note that, despite the inclusion of VULA services in the reported WLA returns in the last two years, this has not resulted in BT being unable to earn a return equal to its cost of capital across the WLA market. This suggests the VULA, which is not currently charge controlled, was not in a period of 'start up losses' where penetration is too low to cover fixed costs.

Figure 10 shows that, while charge controls introduced on the AISBO market, following a period of over-charging by BT initially reduced profitability, in the last four years this market has shown significant excess profits despite successive charge controls. The relatively high level of returns in the latest financial year to March 2015 and limited reduction over the last year, suggests that profits will not converge to a normal level by the end of the current charge control in March 2016.

Figure 10. BT's excess returns for the business connectivity AISBO market

Source: Frontier analysis of BT RFS

This difference in the performance of charge controls may reflect the relative difficult of forecasting a market containing a number of heterogeneous products which all partially recover common costs (such as products in BCMR markets), compared to more commoditised markets such as LLU and WLR. However, while regulated returns on more complex products would be expected to have a higher volatility, due to future demand uncertainty, this does not explain the systematic high returns on these services.

Conclusion

BT's returns for regulated services overall have been consistently above a benchmark rate based on Ofcom's determinations of the return required by investors. This implies that prices overall have been set at a higher level than that required to provide investors in BT with an appropriate rate of return: in other words, prices could have been lower and BT's investors would have still been adequately compensated. We estimate that BT's regulated prices would have been 11% lower on average, had BT's regulated returns been in line it the cost of capital.

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