21 November 2013 | 44 pages

Pharmaceuticals
Western Europe | United Kingdom

AstraZeneca PLC (AZN.L)

Looking For A Deal, Waiting For The Pipeline. NEUTRAL

- **Consensus earnings post '16 look materially too low (7-27%)…** we maintain our NEUTRAL rating, although our in-depth early pipeline analysis lifts our DCF-derived intrinsic value from £37 to £49 (the greatest discount to NPV in our universe). Our target price remains unchanged (£35, 12% ETR) and is based on c.12x 2014E core earnings. The market ascribes minimal value to the potential of AZN's extensive and growing cancer pipeline and the longer-term potential of Brilinta (cardiovascular). Despite the DCF support, ahead of maturing pipeline data we continue to prefer BUY rated Roche, Novartis and Bayer in EU and BMY and PFE among US majors.
- **…but near/mid-term EPS still face downward pressure and few catalysts.** Our new estimates are c.2% below consensus for 2014-2015 EPS. Dividend yield rather than capital appreciation prospects will likely remain the determinant of the share price until AZN discloses pipeline data 4Q 2014/2015.
- **Restructuring of BMY diabetes JV and Actelion deal or similar could provide c.24% EPS accretion**. We have previously outlined our belief that a restructured diabetes JV for BMY/AZN would be mutually beneficial, potentially accreting AZN's EBIT by c.7%. (*AZN Could Seek Increased Ownership Of Diabetes JV*). Acquisition of "long runway" assets like Actelion could provide c.12% EBIT accretion without jeopardizing the dividend.
- **AZN's unappreciated $7bn pa cancer pipeline —** AZN is building the broadest portfolio of cancer immunotherapies (IO), outside BMY and Roche (*Immunotherapy – The Beginning of the End for Cancer*). AZN has multiple checkpoint inhibitors/ co-stimulators, armed antibodies, antisense inhibitors and a plethora of high potential novel small molecules. First phase II data due 4Q 2014 for immunotherapy agents, with first novel oral launches anticipated in 2014/2015.
- **Likely positive PEGASUS data in ACS set to make Brilinta a >$3bn drug —** The direct and indirect effect of positive Brilinta data from PEGASUS should fuel increased uptake in the primary ACS (Acute Coronary Syndrome) and help extend treatment duration (data due 1Q 2015). We are unperturbed by the planned investigation into the PLATO registration trial (*DOJ Investigation Into Brilinta/PLATO Trial Integrity Likely Immaterial. PEGASUS Is Key For Transforming Brilinta Outlook*)

Neutral	2
Price (20 Nov 13)	£32.97
Target price	£35.00
Expected share price return	6.2%
Expected dividend yield	5.8%
Expected total return	**11.9%**
Market Cap	£41,322M
	US$66,616M

Price Performance
(RIC: AZN.L, BB: AZN LN)

AstraZeneca PLC (USD)

Year to 31 Dec	2011A	2012A	2013E	2014E	2015E
Sales ($M)	33,591.0	27,973.0	25,834.4	24,871.4	24,296.7
Profit Before Tax ($M)	12,739.0	10,729.0	8,154.1	7,488.7	7,515.9
Diluted EPS ($)	7.28	6.87	5.01	4.56	4.54
Diluted EPS (Old) ($)	7.28	6.87	5.09	4.58	4.25
PE (x)	7.3	7.7	10.6	11.6	11.7
EV/EBITDA (x)	4.7	5.4	6.9	7.2	7.0
DPS ($)	2.80	2.80	2.80	2.80	2.80
Net Div Yield (%)	5.3	5.3	5.3	5.3	5.3

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AZN.L: Fiscal year end 31-Dec — **Price: £32.97; TP: £35.00; Market Cap: £41,322m; Recomm: Neutral**

Profit & Loss (US$m)	2011	2012	2013E	2014E	2015E
Sales revenue	33,591	27,973	25,834	24,871	24,297
Cost of sales	-6,026	-5,393	-5,235	-5,124	-5,139
Gross profit	27,565	22,580	20,599	19,747	19,157
Gross Margin (%)	82.1	80.7	79.7	79.4	78.8
EBITDA (Adj)	**14,627**	**13,086**	**10,210**	**9,616**	**9,738**
EBITDA Margin (Adj) (%)	43.5	46.8	39.5	38.7	40.1
Depreciation	-1,639	-1,222	-1,056	-1,091	-1,128
Amortisation	-911	-1,296	-1,562	-1,624	-1,684
EBIT (Adj)	**13,167**	**11,159**	**8,523**	**7,833**	**7,857**
EBIT Margin (Adj) (%)	39.2	39.9	33.0	31.5	32.3
Net interest	-428	-430	-369	-344	-341
Associates	0	0	0	0	0
Non-op/Except	0	0	0	0	0
Pre-tax profit	**12,367**	**7,718**	**5,306**	**5,489**	**5,541**
Tax	-2,351	-1,391	-1,221	-1,208	-1,219
Extraord./Min.Int./Pref.div.	-33	-30	-21	-21	-21
Reported net profit	**9,983**	**6,297**	**4,065**	**4,260**	**4,300**
Net Margin (%)	29.7	22.5	15.7	17.1	17.7
Core NPAT	9,909	8,666	6,283	5,773	5,795

Per share data	2011	2012	2013E	2014E	2015E
Reported EPS ($)	7.33	4.99	3.24	3.37	3.37
Core EPS ($)	7.28	6.87	5.01	4.56	4.54
DPS ($)	2.80	2.80	2.80	2.80	2.80
CFPS ($)	5.87	5.62	6.02	5.45	5.34
FCFPS ($)	5.25	5.09	5.39	4.78	4.65
BVPS ($)	17.99	19.04	19.58	20.23	20.88
Wtd avg ord shares (m)	1,361	1,261	1,253	1,265	1,277
Wtd avg diluted shares (m)	1,361	1,261	1,253	1,265	1,277

Growth rates	2011	2012	2013E	2014E	2015E
Sales revenue (%)	1.0	-16.7	-7.6	-3.7	-2.3
EBIT (Adj) (%)	-3.2	-15.3	-23.6	-8.1	0.3
Core NPAT (%)	2.6	-12.5	-27.5	-8.1	0.4
Core EPS (%)	8.4	-5.6	-27.0	-9.0	-0.6

Balance Sheet (US$m)	2011	2012	2013E	2014E	2015E
Cash & cash equiv.	7,571	7,701	9,273	10,117	10,813
Accounts receivables	6,630	5,696	5,379	5,042	4,926
Inventory	1,852	2,061	1,936	1,895	1,901
Net fixed & other tangibles	7,939	7,200	6,944	6,693	6,448
Goodwill & intangibles	20,842	26,346	26,784	27,160	27,476
Financial & other assets	7,996	4,530	4,382	4,316	4,276
Total assets	**52,830**	**53,534**	**54,699**	**55,224**	**55,840**
Accounts payable	2,155	2,449	2,366	2,316	2,323
Short-term debt	1,990	901	901	901	901
Long-term debt	7,338	9,409	9,409	9,409	9,409
Provisions & other liab	17,875	16,823	17,160	16,664	16,198
Total liabilities	**29,358**	**29,582**	**29,837**	**29,290**	**28,831**
Shareholders' equity	23,246	23,737	24,647	25,719	26,796
Minority interests	226	215	215	215	213
Total equity	**23,472**	**23,952**	**24,862**	**25,933**	**27,009**
Net debt	**1,757**	**2,609**	**1,037**	**193**	**-503**
Net debt to equity (%)	7.5	10.9	4.2	0.7	-1.9

Valuation ratios	2011	2012	2013E	2014E	2015E
PE (x)	7.3	7.7	10.6	11.6	11.7
PB (x)	3.0	2.8	2.7	2.6	2.5
EV/EBITDA (x)	4.7	5.4	6.9	7.2	7.0
FCF yield (%)	9.9	9.6	10.1	9.0	8.8
Dividend yield (%)	5.3	5.3	5.3	5.3	5.3
Payout ratio (%)	38	41	56	61	62
ROE (%)	43.0	26.8	16.8	16.9	16.4

Cashflow (US$m)	2011	2012	2013E	2014E	2015E
EBITDA	15,345	10,666	8,293	8,547	8,694
Working capital	-897	-706	826	-124	-332
Other	-6,456	-2,867	-1,572	-1,529	-1,537
Operating cashflow	**7,992**	**7,093**	**7,548**	**6,894**	**6,825**
Capex	-839	-672	-800	-840	-882
Net acq/disposals	1,863	196	0	0	0
Other	-3,201	-321	-2,000	-2,000	-2,000
Investing cashflow	**-2,177**	**-797**	**-2,800**	**-2,840**	**-2,882**
Dividends paid	-3,780	-3,685	-3,537	-3,572	-3,608
Financing cashflow	**-9,337**	**-4,943**	**-3,175**	**-3,210**	**-3,246**
Net change in cash	**-3,547**	**1,349**	**1,572**	**844**	**696**
Free cashflow to s/holders	**7,153**	**6,421**	**6,748**	**6,054**	**5,943**

For definitions of the items in this table, please click here.

Contents

Favoured Names and Profiles

Figure 1. We continue to prefer BMY, Novartis, Roche and PFE but significant value potential in AZN is increasingly apparent

	Rating	Price Target	Investment Thesis	Cancer Immuno-therapy	"Shrink, Smarten, Spin"	Biologics	Vaccines	Diagnostics	Consumer Health	Emerging Markets	Generics	Animal Health
Most Favoured												
Bristol Myers-Squibb	Buy	$55.00	Pipeline, Dividend	✓✓✓	✓✓✓	✓✓✓				✓		
Novartis	Buy	CHF 83.00	Innovations vs Generics	✓✓	✓	✓	✓	✓	✓	✓	✓✓✓	✓
Roche	Buy	CHF 280.00	Innovation, pertuzumab	✓✓✓	✓✓	✓✓✓		✓✓✓		✓✓		
Shire	Buy	£32.00	Rare diseases innovation		✓✓	✓✓				✓		
Bayer	Buy	€90.00	Xarelto, Emerging Markets		✓	✓✓		✓	✓✓✓	✓✓	✓	✓
Pfizer	Buy	$31.00	Cost, WC De-equitisation		✓✓✓	✓✓	✓✓			✓✓	✓	✓✓✓
Novo Nordisk	Buy	DKK 1150.00	Emerging market, diabetes		✓	✓✓✓				✓✓		
Sanofi	Buy	€101.00	Return to sustainable growth		✓✓✓	✓	✓✓✓		✓✓✓	✓✓✓	✓	✓✓✓
Eli Lilly	Buy	$60.00	Pipeline base incl. Alimta, EM		✓✓✓	✓✓✓				✓		✓✓
AstraZeneca	Neutral	£35.00	Shrink research. De-equitisation growth drivers	✓✓✓	✓✓	✓	✓			✓		
GlaxoSmithKline	Neutral	£18.10	Pharma 2.0 diversification	✓	✓✓✓	✓	✓✓✓		✓✓✓	✓✓		
Merck KGaA	Neutral	€122.00	Cost cutting, business development		✓	✓✓	✓	✓	✓	✓		
Merck & Co	Neutral	$44.00	Cost, WC reduction pipeline	✓		✓✓	✓✓✓		✓	✓		✓✓✓

Source: Citi Research

Figure 2. Large-Cap Pharma Valuation

Company	RIC	Analysts		Current Price	Market Cap ($bn)	Rating/ Risk	Target Price	Target % Upside	Target ETR	2014E Multiple PE	2014E Multiple EV/EBITDA	2014-19E CAGR Sales	2014-19E CAGR EPS	2014E Div Yield
US Large Cap Pharma														
AbbVie	ABBV.N	Not Rated	USD	48.3	76.8	Not Rated	NR	NR	NR	15.1	9.9	NA	NA	3.4%
Bristol Myers	BMY.N	Andrew S Baum	USD	51.6	85.0	Buy	55.0	7%	9%	24.7	19.9	9.1%	17.9%	2.8%
Eli Lilly	LLY.N	Andrew S Baum	USD	50.8	57.2	Buy	60.0	18%	22%	18.4	9.1	4.5%	15.5%	3.9%
Johnson & Johnson	JNJ.N	Matthew J Dodds	USD	94.8	267.6	Buy	102.0	8%	10%	16.3	10.2	NA	NA	2.8%
Merck	MRK.N	Andrew S Baum	USD	48.0	140.1	Neutral	44.0	-8%	-5%	14.0	9.6	0.9%	5.1%	3.7%
Pfizer	PFE.N	Andrew S Baum	USD	31.9	206.4	Buy	31.0	-3%	0%	13.9	7.8	2.2%	7.9%	3.2%
US Large-cap Pharma (mkt-cap wt avg)										***16.2***	***10.4***	***3.3%***	***9.7%***	***3.2%***
European Large Cap Pharma														
AstraZeneca	AZN.L	Andrew S Baum	GBP	33.0	66.6	Neutral	35.0	6%	11%	11.6	7.9	2.1%	6.7%	5.3%
Bayer	BAYGN.DE	Andrew S Baum	EUR	94.7	106.0	Buy	90.0	-5%	-3%	14.5	10.0	4.3%	7.4%	2.5%
GlaxoSmithKline	GSK.L	Andrew S Baum	GBP	1,636.0	128.2	Neutral	1810.0	11%	15%	13.7	11.5	2.9%	7.8%	5.1%
Novartis	NOVN.VX	Andrew S Baum	CHF	71.7	212.8	Buy	83.0	16%	19%	13.8	12.6	3.3%	10.9%	3.1%
Novo-Nordisk	NOVOB.CO	Joanne Jerman	DKK	961.0	94.0	Buy	1150.0	20%	21%	17.9	13.2	8.4%	14.4%	2.5%
Roche	ROG.VX	Andrew S Baum	CHF	253.9	239.8	Buy	280.0	10%	13%	15.0	11.0	5.6%	8.9%	3.6%
Sanofi	SASY.PA	Andrew S Baum	EUR	78.5	141.0	Buy	101.0	29%	32%	12.7	7.6	5.2%	9.8%	4.0%
EU Large-cap Pharma (mkt-cap wt avg)										***14.2***	***10.8***	***4.6%***	***9.5%***	***3.6%***
Global Large-cap Pharma (mkt-cap wt avg)										***15.1***	***10.6***	***4.0%***	***9.6%***	***3.4%***

Source: Citi Research. Nov 20th

What's changed?

Figure 3. Summary of changes to our model.

$ mlns		2012A	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Revenues	new	27,973	25,834	24,871	24,297	24,456	23,694	25,774	27,625	29,441
	old	27,973	25,844	24,747	24,127	23,892	22,672	23,440	24,054	24,718
	Δ	0.0%	0.0%	0.5%	0.7%	2.4%	4.5%	10.0%	14.8%	19.1%
Consensus			*25,899*	*24,908*	*24,422*	*23,579*	*22,278*	*22,392*		
Citi vs. cons	*Δ*		*-0.2%*	*-0.1%*	*-0.5%*	*3.7%*	*6.4%*	*15.1%*		
Core COGS	new	(4,932)	(4,633)	(4,601)	(4,616)	(4,647)	(4,383)	(4,639)	(4,834)	(5,005)
	old	(4,661)	(4,578)	(4,584)	(4,898)	(4,648)	(4,805)	(4,931)	(5,067)	(5,114)
	Δ	5.8%	1.2%	0.4%	-5.7%	0.0%	-8.8%	-5.9%	-4.6%	-2.1%
Consensus			*(5,189)*	*(4,910)*	*(4,744)*	*(4,591)*	*(4,364)*	*(4,329)*		
Citi vs. cons	*Δ (bps)*		*-10.7%*	*-6.3%*	*-2.7%*	*1.2%*	*0.5%*	*7.2%*		
Core R&D	new	(4,241)	(4,308)	(4,307)	(4,305)	(4,303)	(4,301)	(4,300)	(4,298)	(4,296)
	old	(4,241)	(4,282)	(4,418)	(4,515)	(4,570)	(4,625)	(4,681)	(4,737)	(4,795)
	Δ	0.0%	0.6%	-2.5%	-4.7%	-5.8%	-7.0%	-8.1%	-9.3%	-10.4%
Consensus			*(4,253)*	*(4,277)*	*(4,256)*	*(4,255)*	*(4,207)*	*(4,092)*		
Citi vs. cons	*Δ*		*1.3%*	*0.7%*	*1.2%*	*1.1%*	*2.2%*	*5.1%*		
Core SG&A	new	(8,389)	(8,762)	(8,587)	(7,986)	(7,746)	(7,746)	(7,746)	(7,979)	(8,218)
	old	(8,389)	(8,639)	(8,466)	(8,297)	(7,882)	(7,882)	(7,882)	(7,882)	(7,882)
	Δ	0.0%	1.4%	1.4%	-3.7%	-1.7%	-1.7%	-1.7%	1.2%	4.3%
Consensus			*(8,656)*	*(8,510)*	*(8,375)*	*(8,058)*	*(7,656)*	*(7,733)*		
Citi vs. cons	*Δ*		*1.2%*	*0.9%*	*-4.6%*	*-3.9%*	*1.2%*	*0.2%*		
Core EBIT	new	11,159	8,523	7,833	7,857	8,231	7,748	9,557	10,968	12,362
	old	11,159	8,635	7,701	7,171	6,998	5,994	6,537	6,968	7,426
	Δ	0.0%	-1.3%	1.7%	9.6%	17.6%	29.3%	46.2%	57.4%	66.5%
Consensus			*8,665*	*7,840*	*7,606*	*7,263*	*6,643*	*6,809*		
Citi vs. cons	*Δ*		*-1.6%*	*-0.1%*	*3.3%*	*13.3%*	*16.6%*	*40.4%*		
Core EPS	new	6.87	5.01	4.56	4.54	4.73	4.42	5.50	6.31	7.13
	old	6.87	5.09	4.58	4.25	4.18	3.56	3.90	4.13	4.39
	Δ	0.0%	-1.4%	-0.5%	6.8%	13.2%	24.0%	41.2%	52.9%	62.2%
Consensus			*5.12*	*4.66*	*4.59*	*4.44*	*4.13*	*4.32*		
Citi vs. cons	*Δ*		*-2.1%*	*-2.1%*	*-1.1%*	*6.4%*	*7.1%*	*27.2%*		
DPS	new	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
	old	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
	Δ	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Consensus			*2.83*	*2.85*	*2.88*	*2.87*	*2.89*	*2.91*		
Citi vs. cons	*Δ*		*-1.0%*	*-1.7%*	*-2.8%*	*-2.3%*	*-3.1%*	*-3.7%*		

Source: Citi Research, Consensus from company

Mapping A Pathway To Value Creation

Significant value potential but still too early to buy given continued earnings pressure and distant catalysts

Lots of value potential…for the patient. Over the next 6-12 months, we envisage other key BUY rated names Novartis, Roche and Bayer (EU) and BMY and PFE (US) will benefit from either upward EPS momentum, capital reallocation and/or positive late stage pipeline catalysts. Until AZN's high potential and unvalued oncology pipeline matures, AZN's main valuation support will likely continue to be its c.£1.8 per share dividend (currently 5.3% dividend yield). In a rising equity market, prematurely large positions in AZN may negatively impact near term performance. Predicting when the equity market will begin to price in AZN's early stage pipeline is challenging. However we believe that investors can afford to wait a little longer before increasing exposure to the name. We would look to revisit our investment thesis on AZN in 2014. We prefer BUY-rated Novartis, Roche and Bayer in EU and BUY rated BMY and PFE in the US.

Potential acquisition of Actelion and restructuring of BMY diabetes JV could accrete Core EPS by up to 24% with no risk to dividend

Focus moving to material M&A in 2014 as early pipeline matures. We believe that AZN has assembled a very significant and much under-appreciated early stage pipeline through its frenetic business development activity in its core areas of oncology and respiratory medicine. We anticipate that the CEO's attention in 2014 will move towards M&A to offset the impact of the anticipated genericisations over the next three years. AZN has the balance sheet to accrete Core EPS by c.24% while sustaining the £1.8 per share dividend within the 1.5 times trough dividend cover. Creative corporate finance such as a restructuring of the existing diabetes joint venture with BMY, coupled with "long runway" acquisitions such as Actelion[1] could provide a useful bridge to organically fuelled growth.

Near-term downgrades to consensus EPS likely. But a significant bolus of catalysts starting 4Q 2014, both Ph2 oncology data readouts as well as the key PEGASUS CV data for Brilinta

Why not a BUY now? The continued likely downgrades to consensus Core EPS forecasts (generic EU Symbicort, Breo competition) over the next 3 years, continued need for high OPEX investment, coupled with the heavy income centric current investor base (unwilling to price in early stage albeit high potential pipeline assets), makes us continue to prefer our key BUY rated names (BMY, PFE, Novartis, Roche and AZN). We anticipate a significant bolus of catalysts in 4Q 2014/2015 including phase II oncology data and PEGASUS phase III data with Brilinta that will eventually drive a re-rating, we believe.

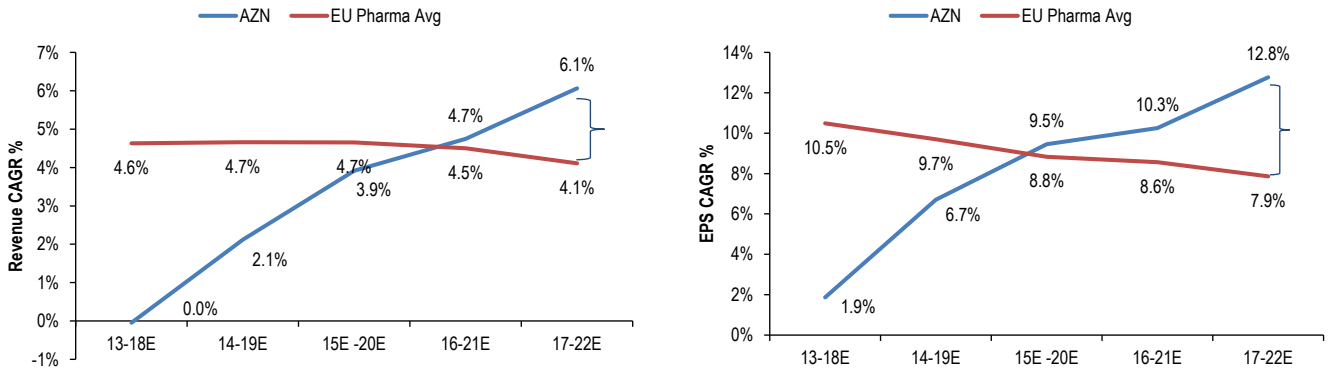
Figure 4. We are modestly below cons for 2013-15e, but significantly ahead beyond 2016/17

	2013E	2014E	2015E	2016E	2017E	2018E
Revenues	25,834	24,871	24,297	24,456	23,694	25,774
Consensus	25,899	24,908	24,422	23,579	22,278	22,392
Delta	***(0.2%)***	***(0.1%)***	***(0.5%)***	***3.7%***	***6.4%***	***15.1%***
Core EPS	5.01	4.56	4.54	4.73	4.42	5.50
Consensus	5.12	4.66	4.59	4.44	4.13	4.32
Delta	***(2.1%)***	***(2.1%)***	***(1.1%)***	***6.4%***	***7.1%***	***27.2%***

Source: Citi Research, Consensus from Company

[1] http://firstwordpharma.com/node/1057295 and http://www.fiercebiotech.com/story/bullish-actelion-once-again-hots-possible-takeover-target/2013-10-28

Figure 5. AZN revenue and EPS CAGR will likely lead the sector post 2016. We see 6% revenues and 13% earnings growth post 2017.



Source: Citi Research

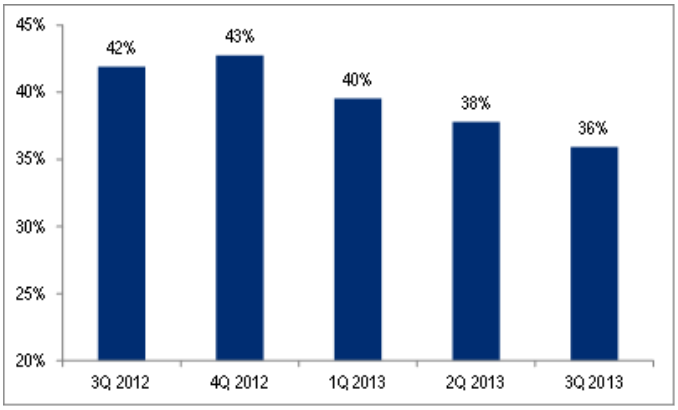
This report provides an in-depth analysis of AZN's:

(i) **Potential M&A opportunities** including ex-US part of diabetes JV with BMS (see: *AZN Could Seek Increased Ownership Of Diabetes JV.*) and Actelion or similar could provide up to 24% EPS accretion without jeopardising the £1.8 per share dividend. *See page 9 onwards.*

(ii) **Very significant oncology franchise** – both immune-oncology and small-molecule. We assess AZN's multiple checkpoint/ stimulatory agents (anti-CTLA, PDL1, OX40 etc), their antibody drug conjugates (from Spirogen), their antisense inhibitor (from ISIS). In addition we highlight the >$3bn pa potential of AZN's small molecule cancer agents (olaparib-ovarian/breast, AZD9291-lung, AZD4547-lung+ and even cediranib) *See page 15 onwards.*

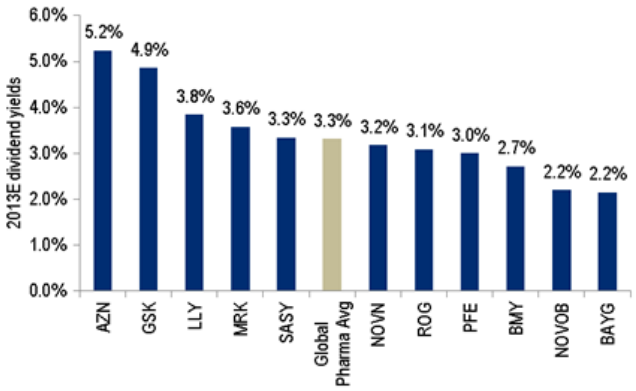
(iii) **Ongoing PEGASUS trial with Brilinta** for secondary prevention of heart attacks. The direct and indirect effect of positive Brilinta data from PEGASUS should fuel increased uptake in the primary ACS indication (acute coronary syndrome) and help extend treatment duration well beyond 12 months. *See page 27 onwards.*

Figure 6. Although declining, 36% of AZN's institutional investor base still UK-domiciled and largely income-centric…



Source: Citi Research, Factset

Figure 7. … which means that near term AZN's dividend should largely determine valuation support



Source: Citi Research, *Note: 2013e dividend yields, priced as of 19th Nov. Global Avg is market-cap weighted.*

Mind The Gap. Deals Ahead For 2014

Accretive bolt-on deals could help AZN smooth out the earnings trajectory over the medium term, given strong FCF generation and low gearing currently.

Core EPS-accretive bolt-on deals would increase dividend cover and, compress the interim multiple as AZN faces loss of exclusivity on key brands. We anticipate that AZN will look to accrete near term EBIT through at least two strategic mid-sized transactions given its minimal net debt ($1.6bn year end 2014e) and anticipated $4-5bn per annum FCF generation over the medium term. Income investor confidence in the sustainability of the dividend will likely improve given the increase in dividend cover and the likely absence/lower risk of a major transaction that could put the dividend at risk.

BMY's plan to exit discovery research in diabetes could lead to AZN buying out the ex-US part of their diabetes JV. This could provide up to 6-7% EBIT accretion.

Figure 8 shows the estimated impact on core EBIT following potential acquisition of BMY's stake in the ex-US diabetes JV. We have previously described our expectations that AZN will acquire the ex-US share of its diabetes joint venture with Bristol Myers Squibb. (*AZN Could Seek Increased Ownership Of Diabetes JV*). BMY have announced that they plan to cease their discovery efforts in diabetes as they focus their business around their core focus areas of oncology, inflammatory, virology, heart failure and fibrotic disease.

Figure 8. A potential acquisition of BMS share of ex-US diabetes JV could provide up to 7% accretion to AZN cons EBIT, even with no synergies

	2013e	2014e	2015e	2016e	2017e
AZN consensus core EBIT (standalone)	8,665	7,840	7,606	7,263	6,643
Add: Accretion from EU DM JV (50% acquisition)	47	188	334	439	522
Less: Financing costs	(146)	(146)	(146)	(146)	(146)
AZN proforma core EBIT (EU DM JV included)	8,566	7,882	7,794	7,555	7,019
% accretion		***1%***	***2%***	***4%***	***6%***

Source: Citi Research, Company Reports.
Note: we estimate c.$6bn transaction value using 4x 2016e ex-US sales and a 2.5% mid-term cost of financing

AZN's search for "long runway assets". Potential target: Actelion, UCB. Could provide up to 12% EBIT accretion.

Actelion is an intriguing potential target for AZN. Potential acquisition of Actelion could provide 12% EBIT accretion through (i) potential pipeline driven revenue growth (ii) OPEX reduction. AZN's CEO has previously indicated that they are looking for "long runway assets". It was reported that AZN was a late stage bidder for Onyx (subsequently acquired by Amgen for c.$10bn). We note the ongoing reports of M&A speculation around Actelion which shares a similar market capitalization to Onyx[2]. An acquisition of Actelion could also facilitate material cost synergies via reduction of Actelion's SFr400-450m R&D expense and would complement AZN's stated growth platforms (cardiovascular, respiratory). An additional consideration is the extent from which AZN could benefit from Actelion's 15% effective tax rate (compared with AZN's 23%). AZN could potentially use a CVR (contingent value right) to deal with the unknown outcome of the GRIPHON study for oral selective IP receptor agonist selexipag (data due in mid-2014), similar to Sanofi's acquisition of the US biotech company Genzyme in 2010. A number of other companies have been identified in press reports as potential bid targets. UCB and Hospira among others offer a similar "long runway" profile to Actelion[3].

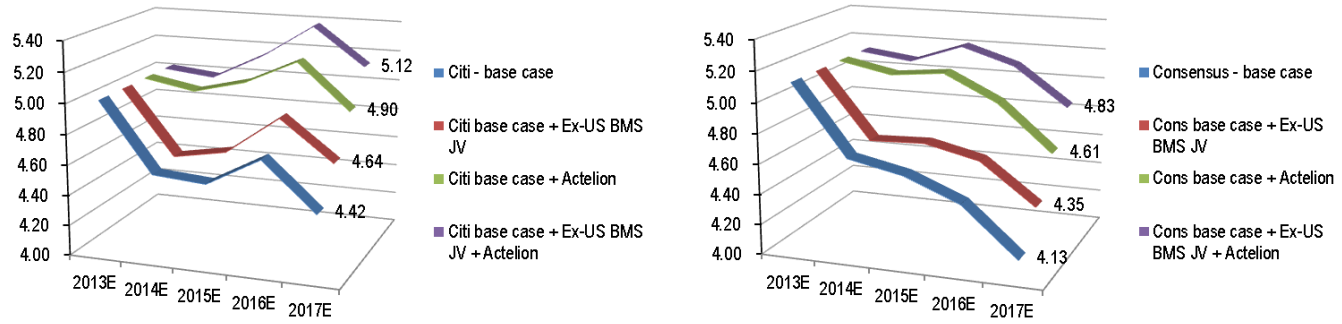
[3] http://www.fiercepharma.com/story/hospira-primed-takeover/2013-02-06 and http://www.reuters.com/article/2010/08/31/us-amgen-idUSTRE67U4HA20100831

Figure 9. A potential acquisition of Actelion could provide up to 12% accretion to AZN cons EBIT given potential for significant cost synergies.

	2013e	2014e	2015e	2016e	2017e
AZN consensus core EBIT (standalone)	8,665	7,840	7,606	7,263	6,643
Add: Accretion from Actelion		632	700	662	679
Add: Synergies (20% SGA/60% R&D 2015 onwards)		291	411	410	412
Less: Financing costs		(296)	(296)	(296)	(296)
AZN proforma core EBIT (Actelion included)		8,468	8,422	8,039	7,438
% EBIT accretion		***8%***	***11%***	***11%***	***12%***

Source: Citi Research, Company reports, Consensus from Factset & Vara Research.
Note: we estimate 25% cost synergies in SG&A and 75% in R&D once major late-stage trials for selexipag have concluded. We have modelled a 25% premium to current stock price, implying a take-out price of $11.8bn after factoring in $600m of net cash. We estimate a 2.5% mid-term financing cost for the transaction.

Figure 10. Potential M&A could improve core EPS profile without jeopardising dividend. Even on more pessimistic consensus estimates, EPS trajectory looks to be significantly flattened post M&A



Source: Citi Research, Consensus from Company.

Figure 11. Potential acquisition of both BMY share of ex-US diabetes JV and Actelion could accrete core EPS by c.24%

	2013e	2014e	2015e	2016e	2017e
Revenues (Standalone)	25,834	24,871	24,297	24,456	23,694
Proforma Revenues (Ex-US BMS JV + Actelion)		27,183	26,851	27,030	26,452
Consensus	25,899	24,908	24,422	23,579	22,278
Delta - Proforma Revenues vs Consensus		***9%***	***10%***	***15%***	***19%***
Core EPS (Standalone)	5.01	4.56	4.54	4.73	4.42
Proforma Core EPS (Ex-US BMS JV + Actelion)		4.98	5.15	5.38	5.12
Consensus	5.12	4.66	4.59	4.44	4.13
Delta - Proforma Core EPS vs Consensus		***7%***	***12%***	***21%***	***24%***

Source: Citi Research, Company data. Consensus from company.

Figure 12. Scenario Analysis: Potential M&A could drive Core EPS accretion and optically increase relative attractiveness

	EPS CAGR		PE		Div Yield
	2014-19E	2015-20E	2014E	2015E	2014E
AZN	6.7%	9.5%	11.6	11.7	5.3%
AZN + BMY ex-US JV	7.3%	9.6%	11.6	11.4	
AZN + Actelion proforma	6.5%	8.6%	10.7	10.6	
AZN + BMY ex-US JV + Actelion	7.1%	8.7%	10.7	10.3	
EU sector average (ex-AZN)	**9.7%**	**8.8%**	**14.3**	**12.7**	**3.2%**
US sector average	**9.7%**	**11.0%**	**16.4**	**15.5**	**3.3%**

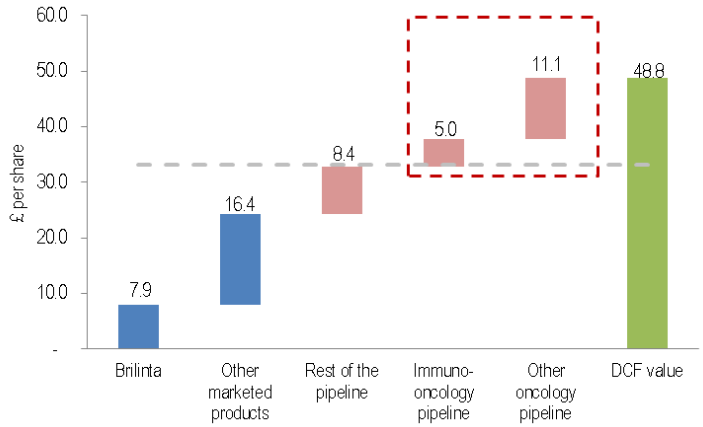
Source: Citi Research

AZN's $7bn pa Cancer Pipeline Absent From Market Forecasts

AZN's immunotherapy franchise, albeit early, appears materially undervalued. We expect $2.3bn in 2022 sales for the three most advanced assets, namely anti PD-L1, anti-CTLA4 and anti-OX40

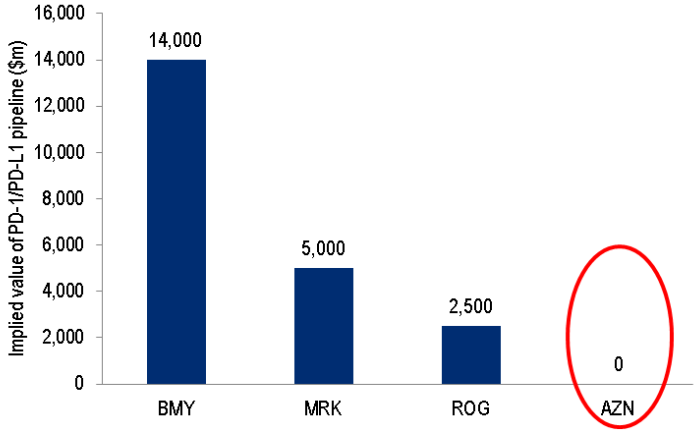
Market valuation of class and AZN's IO assets set to materially increase in late 2014/early 2015. We have previously highlighted the $35bn commercial potential of the emergent class of immunotherapeutics in cancer (*Immunotherapy – The Beginning of the End for Cancer*). The market continues to focus myopically on a much smaller c.$10bn market opportunity. We anticipate that the market assessment of the commercial potential of the class of checkpoint agents will expand dramatically during 2014. We anticipate supportive data in NSCLC and renal cancer from both PD-L1 mono-therapies, the combination of anti-CTLA4 and anti-PDL1 immunotherapies as well as combinations of anti-PDL1 with chemo, VEGF and anti-TGFβ directed therapies. We also anticipate the first clinical data from active immunotherapies in hematologic cancers (blood cancer). We anticipate the first phase II data for AZN's immune-oncology assets in 2014/2015. We conservatively estimate risk adjusted sales of $2.3bn for AZN's suite of three immune oncology assets in phase III, with first likely approval in 2015/2016.

Figure 13. AZN's developing oncology pipeline not captured in the stock price.



Source: Citi Research, Company reports.

Figure 14. A back of the envelope calculation suggests current stock price pricing in significant peak sales potential for PD/PD-L1 targeted therapies for BMY/MRK, but appear to be largely ignored in AZN's current stock price.



Source: Citi Research, Company data.

AZN's portfolio of oral cancer drugs also remains materially under-recognised. Key assets include cediranib, olaparib, AZD9291 and AZD4547 each with a peak sales potential of $1bn per annum

AZN has a similarly underappreciated portfolio of oral cancer drugs including cediranib (specific and potential oral anti-VEGF TKI, ovarian cancer), olaparib (PARP inhibitor, BRCA1/2 ovarian cancer), AZD9291 (selective third-generation EGFR inhibitor, NSCLC) and AZD4547 (FGFR inhibitor). Cediranib, olaparib and AZD9291 could all receive regulatory approvals between 2014-2017. We anticipate that the commercial potential of each small molecule is c.$1bn, with a very high contribution margin. The value of oncology portfolio will be further enhanced through combination strategies and strategic co-development deals. The evidence for the ability of immune-therapeutics to enhance the response of small molecules continues to increase. For example, we anticipate AZN to explore cediranib/anti-PDL1 combination in solid tumours. AZN's rich portfolio of potent small molecules and IO make it's the best positioned company after Roche/Genentech. Additionally, we anticipate AZN to aggressively seek co-development opportunities to add further optionality to its pipeline.

Figure 15. AZN has an attractive, yet underappreciated portfolio of oral cancer drugs. Four drugs highlighted below have cumulative peak sales potential of $3bn

	2014	2015	2016	2017	2018	2019	2020	2021	2022
olaparib	108	270	432	583	745	885	982	1,047	1,079
cediranib	-	70	176	281	379	484	576	639	681
AZD4547	-	-	-	54	135	216	292	373	443
AZN 9291	-	-	-	54	135	216	292	373	443
	108	**340**	**607**	**971**	**1,394**	**1,801**	**2,141**	**2,431**	**2,646**

Source: Citi Research, *Note: these are risk-adjusted estimates, with risk adjustment varying between 54% and 83%*

Positive PEGASUS remains key to drive peak Brilinta sales to $3bn per annum

Positive PEGASUS data will likely transform commercial potential of Brilinta. We anticipate Brilinta sales of $1.9bn in 2018e compared with consensus of $1.6bn. We anticipate that PEGASUS will show a net positive benefit for Brilinta in secondary prevention making it unique among ADP receptor inhibitors. Positive data would increase treatment duration from 12 months currently to potentially life long. PEGASUS should also minimize residual safety concerns in the US over Brilinta's safety compared with Plavix. The combination of unique efficacy and bolstered safety in the US should allow Brilinta to become the dominant ADP receptor blocker in the acute coronary syndrome (ACS) indication, currently dominated by generic clopidogrel (Plavix). We have previously mentioned the lack

of significance of planned DoJ/EMA investigation into the trial integrity of the PLATO registration trial (*DOJ Investigation Into Brilinta/PLATO Trial Integrity Likely Immaterial. PEGASUS Is Key For Transforming Brilinta Outlook*)

Figure 16. Our Brilinta revenues are up to 20% ahead of consensus

Brilinta Revenues	2013E	2014E	2015E	2016E	2017E	2018E
Citi	287	613	864	1,174	1,530	1,894
Consensus	288	525	767	1,040	1,298	1,581
Delta	*(0.3%)*	*16.8%*	*12.6%*	*12.8%*	*17.9%*	*19.8%*

Source: Citi Research, Company Consensus

Cancer Franchise to Generate > $7bn pa

The market grossly undervalues AZN oncology pipeline. AZN likely has the third broadest and advanced clinical pipeline for immunotherapeutics after BMY and Roche, a position further strengthened by the recent acquisition of Amplimmune and Spirogen and licensing from ISIS. In addition, AZN has at least three high probability small molecules, each with potential in excess of $500m-1bn dollars. We expect the market to ascribe more value to these assets as clinical data develops through 2014/2015. We anticipate that in 12-18 months, AZN will be preparing the first phase III transitions for 6 novel high potential oncology agents (anti-PDL1, anti-CTLA4, anti-OX40, STAT3 antisense, T790M-EGFR inhibitor and FGFR inhibitor), with AZN's PARP inhibitor olaparib and oral VEGF inhibitor cediranib already approved. We estimate risk adjusted oncology sales of $5.4bn in 2020e, reflecting c.33% of group EBIT in that year.

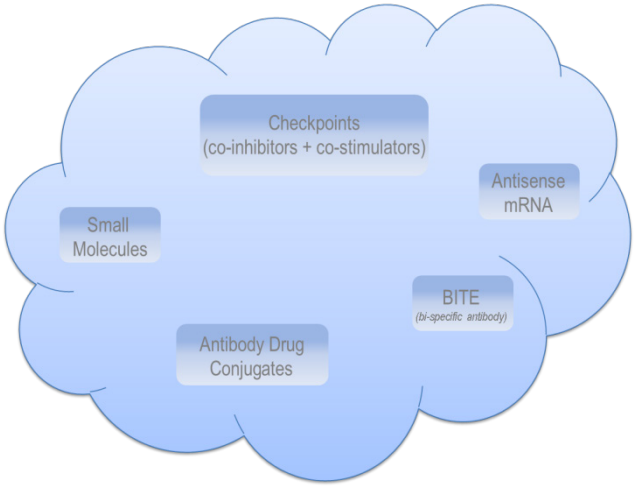
Despite poor more recent track record in oncology, AZN has strong historic discovery and development expertise in oncology

AstraZeneca has institutional competence in novel oncology drug discovery. While AZN's recent oncology pipeline delivery has been woeful, we note AstraZeneca's strong historic discovery and development track record for oncology drugs. Pivotal historic assets include tamoxifen (Nolvadex), Arimidex, Casodex, Zoladex and more recently Iressa. While oncology development track record at AstraZeneca has been very poor, we credit AZN for the approval of the first EGFR inhibitor (Iressa) and the acquisition of kuDOS to gain access to one of the first PARP inhibitors (olaparib).

AZN's broad oncology portfolio spans immunotherapy, antibody drug conjugates and novel small molecules, allowing potential for testing multiple combinations

The breadth and diversity of AZN's oncology portfolio gives it a potential competitive advantage. AZN has deliberately augmented its oral oncology portfolio with multiple novel treatment modalities including: co-inhibitory and co-stimulatory immunotherapy agents (including anti-PD-L1, CTLA-4 and OX40 plus pre-clinical molecules through the recent Amplimmune acquisition), novel small molecules (cediranib, olaparib, AZD9291, AZD4547), antibody drug conjugates (through recent Spirogen / ADC Therapeutics acquisition) and antisense therapy against STAT3 (AZD9150, licensed from Isis)-outlined in Figure 18 and Figure 19. We believe that this portfolio breadth gives AZN a competitive edge given our belief that immunotherapy for cancer will be dominated by multiple combination therapies in order to maximize immune response through multiple mechanisms (T-reg depletion, CD8 activation, T cell trafficking, epitope spreading etc.)

Figure 17. AstraZeneca has a broad range of immunomodulatory technologies in its late pre-clinical/clinical pipeline.



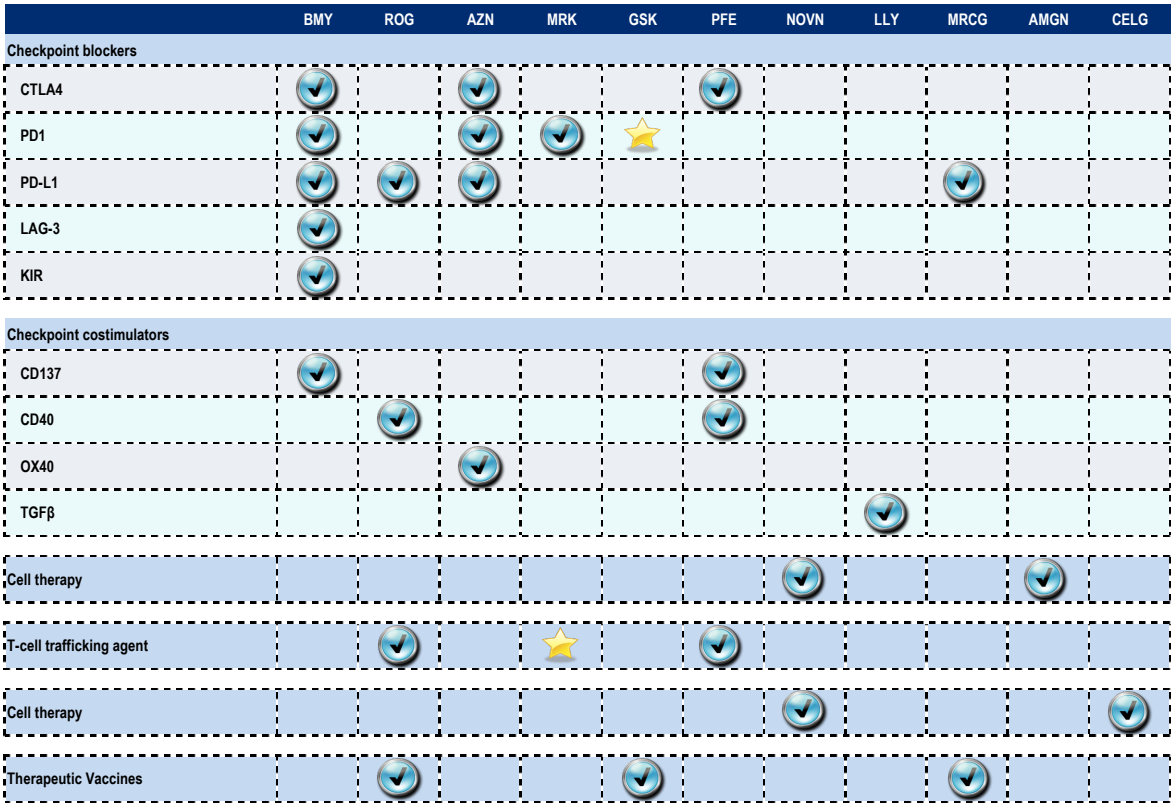
Source: Citi Research.

Figure 18. Astra's broad, albeit early stage, has multi billion revenue potential

Drug	Indication	Risk-adj peak sales	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
olaparib	BRCA ovarian	1,079	108	270	432	583	745	885	982	1,047	1,079
cediranib	Solid Tumours (ovarian)	702	-	70	176	281	379	484	576	639	681
Moxetumomab pasudotox	Hairy Cell Leukemia	270	-	27	68	108	146	186	221	246	262
selumetinib (AZD6244)	Solid Tumours	675	-	-	68	169	270	365	466	554	614
AZD4547	Solid Tumours (FGFR TKI)	540	-	-	-	54	135	216	292	373	443
MEDI-573	met breast cancer (anti-CD19 mab)	330	-	-	-	33	83	132	178	228	271
MEDI-551	haematological tumours (anti-IGF)	176	-	-	-	18	44	70	95	121	144
Tremelimumab (anti-CTLA4)	Solid Tumours	1,080	-	-	108	270	432	583	745	886	983
AZN 9291 (EGFR inhibitor)	Solid Tumours	540	-	-	-	54	135	216	292	373	443
MEDI-4736 (anti-PDL1)	Solid Tumours	1,080	-	-	-	270	432	583	745	886	983
MEDI-6469 (anti-OX40)	Solid Tumours	330	-	-	-	83	132	178	228	271	300
MEDI-3617 (anti-ANG2)	Solid Tumours	150	-	-	-	-	15	38	60	81	104
MEDI-565 (anti CEA BiTE)	Solid Tumours	150	-	-	-	-	15	38	60	81	104
MEDI-0639 (anti-DLL-4 mab)	Solid Tumours	150	-	-	-	-	15	38	60	81	104
AZD1208 (PIM kinase inhibitor)	Hematological tumours	150	-	-	-	-	15	38	60	81	104
AZD2014 (TOR kinase inhibitor)	Solid Tumours	150	-	-	-	-	15	38	60	81	104
AZD5363 (AKT inhibitor)	Solid Tumours	150	-	-	-	-	15	38	60	81	104
AZD8186 (PI3 kinase inhibitor)	Solid Tumours	150	-	-	-	-	15	38	60	81	104
AZD9150 (STAT3 inhibitor)	Hematological tumours	150	-	-	-	-	15	38	60	81	104
volitinib (MET inhibitor)	Solid Tumours	150	-	-	-	-	15	38	60	81	104
AMP-514	Solid Tumours (PD-1)	150	-	-	-	-	15	38	60	81	104
Total		**8,302**	**108**	**367**	**851**	**1,921**	**3,082**	**4,274**	**5,419**	**6,431**	**7,238**

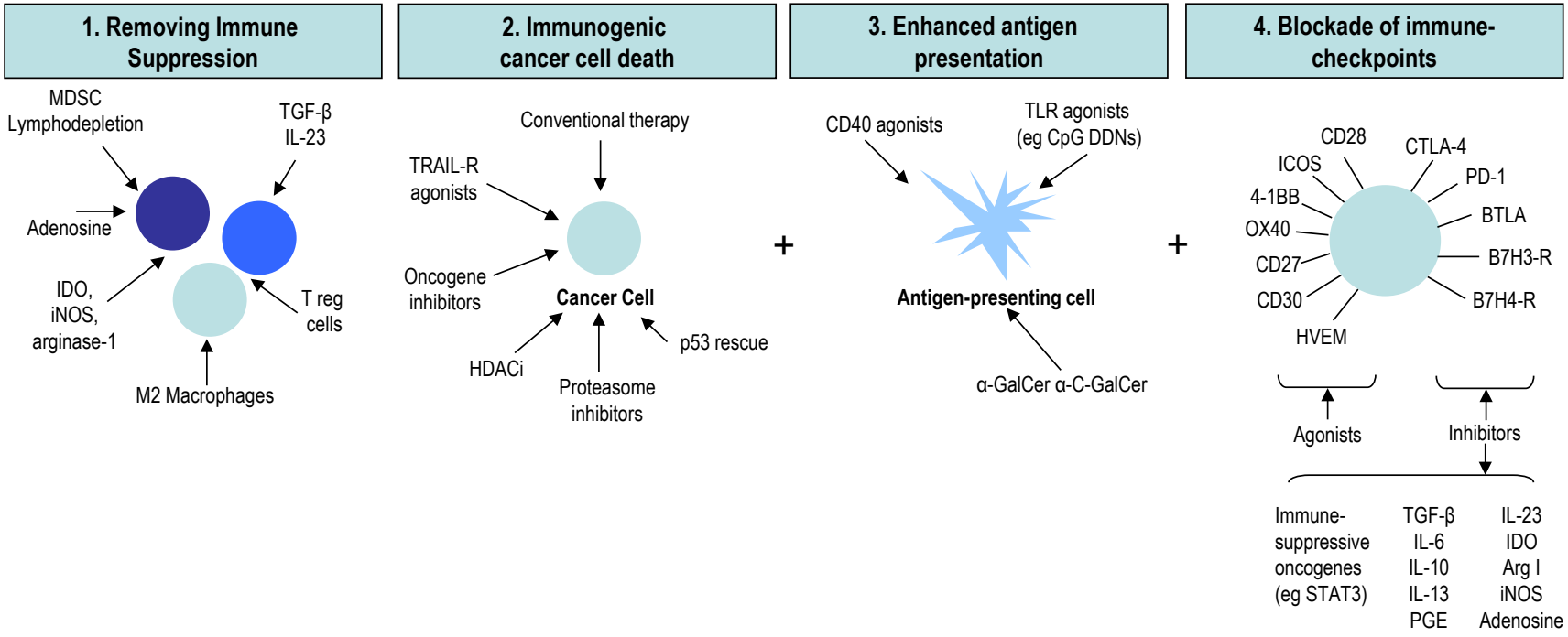
Source: Citi Research, Company data. *Note: we risk-adjust our estimates using 15-83% risk adjustment percentages depending on stage of development*

Figure 19. AZN has the broadest breadth of immune-oncology portfolio in clinical development, after BMY and Roche.



Source: Citi Research, Company reports. Star indicates uncertain stage of development. Note: this includes only disclosed assets that have entered clinical development. There are multiple assets in pre-clinical development that are not included in this list.

Figure 20. Immunotherapy combinations can be assembled from four buckets



Source: Citi Research. Full note can be found here: *Immunotherapy – The Beginning of the End for Cancer*

Amplimmune and Spirogen acquisitions augment portfolio.

Amplimmune aquisition adds an anti-PD1 (clinic in 2014) and at least three other pre-clinical co-inhibitory/ stimulatory agents

Importantly AZN recently expanded the breadth of their co-stimulatory and co-inhibitory agents with the recent acquisition of Amplimmune whose founding scientists included several of the world's pre-eminent immune oncologists (Lieping Chen, Drew Pardoll, Charles Drake-although no longer affiliated to the company). Aside from the anti-PD1 collaboration with GSK, Amplimmune has no assets in clinical development for cancer. However, the company and/or its scientists have sought intellectual property or published on a variety of novel agents among others targeting B7-H4, anti-CD137, B7-H1 and PD1, PDL2. We anticipate that these agents will likely enter the clinic over the next 1-3 years.

Spirogen acquisition added armed antibodies. First agent to enter clinical development late 2014.

Separately, we note the October 2013 announcement regarding the acquisition of private UK biotech company Spirogen and an investment in ADC therapeutics to acquire access to antibody drug conjugate technology. We anticipate that the earliest conjugate is likely at least 6 years away from market. While ADC have direct efficacy as monotherapy as evidenced by Roche's Kadcyla, the ADC platform potentially also offers AZN the potential to selectively precipitate maximal immunogenicity in the tumor micro-environment providing an optimal environment for subsequent administration of active immunotherapeutic agents.

Aside from AZN's historic expertise, we highlight the increasingly rapid time to market for novel oncology assets. We anticipate many of AZN's oncology pipeline agents to move direct from Phase I to Phase III registration programs materially impacting both EPS and potentially valuation.

Tremelimumab (anti-CTLA4). Active but likely less potent than Yervoy

Tremelimumab is the only other anti-CTLA4 agent in clinical development aside from BMY's Yervoy. Relative differences remain hard to elucidate.

AstraZeneca's access to tremelimumab gives it the potential to compete with BMY's Yervoy+nivolumab combination using AZN/Medimmune anti-PDL1 as a combination therapy. AZN has indicated it plans to initiate combination trials in late 2013. We anticipate approval of AZN's anti-PDL1 and tremelimumab as a combination in the first indications in 2017. While AZN may consider developing tremelimumab in combination with other anti-PD-1/PDL1s, a partnership with third party seems unlikely, we believe.

The comparative efficacy of tremelimumab vs. ipilumumab is unclear. AstraZeneca has argued that the deficiencies in the pivotal Pfizer designed phase III trial minimized tremelimumab's efficacy. Issues cited include once-in-three months dosing frequency and 14% cross over to Yervoy seen in the DTIC comparator arm, mainly in North American sites. Adjusted for the crossover, we note that tremelimumab would have shown a statistically significant improvement in OS. The efficacy of tremelimumab is supported by the recent encouraging phase I/II data in mesothelioma, a disease that is typically highly resistant to treatment (see *Encouraging tremelimumab activity in mesothelioma shows deep value in immunotherapy pipeline.*).

Tremelimumab showed a 31% partial response rate and a >6 month median PFS benefit as monotherapy in previously treated advanced mesothelioma, a highly treatment resistant disease. There is no standard of care in the second-line setting.This is the first trial supporting activity of CTLA4 blockade in mesothelioma and is distinctly reminiscent of activity of these agents in melanoma with low response rates, but durable responses when reported. AZN has initiated a potentially registrational Ph2 placebo-controlled randomized trial earlier this year in 2nd / 3rd line mesothelioma with a data readout in mid-2015.

We anticipate that tremelimumab will have modestly inferior efficacy to Yervoy as mono-therapy but may have lower toxicity

We anticipate that tremelimumab will have modestly inferior efficacy to Yervoy as mono-therapy but may have lower toxicity. Unlike Yervoy, tremelimumab is an IgG2 isotype engineered to remove its effector function and eliminate ADCC. Increasingly the dominant mechanism of anti-CTLA4 activity is thought to be the inactivation of the T-reg immune suppressor cells. Assuming this to be the dominant efficacy mechanism, tremelimumab's minimal effector activity when bound to T-regs could result in a lesser inhibitory effect compared with Yervoy, explaining the apparent lack of efficacy. However, potentially lower efficacy for tremelimumab could be offset by greater tolerability than Yervoy. A more tolerable anti-CTLA4 agent would represent an important potential advance for any combination regimen given the reported 53% grade 3-5 adverse events seen with Yervoy in combination with nivolumab (anti-PD1), including several immune-related adverse events.

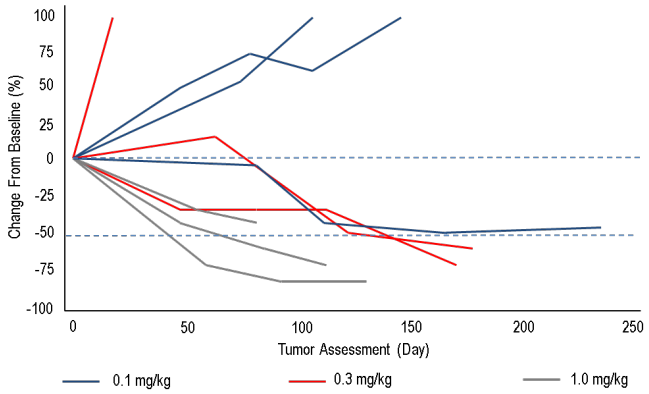
MEDI-4736 (anti-PDL1). Late to market but key component of combinations

MEDI-4736 is likely the fourth PD1/PDL1 targeting agent to market, but looks potent and can be differentiated through combination with other agents in AZN's portfolio

Early phase I dose ranging monotherapy data for MEDI-4736 and IgG1 isotype monoclonal antibody demonstrates similar response rates compared with Roche's MPDL3280A and BMY's anti-PD1 nivolumab. Notable is that MEDI-3476 generates significant responses at the very low dose of 1.0mg/kg compared with competitor data where responses were typically seen at much higher dosages (10mg/kg for Roche's anti-PDL1). We anticipate that the higher potency conferred with MEDI-3476 may be related to the lower levels of neutralizing antibodies compared with that seen with Roche's anti-PDL1. We suspect that the higher levels of neutralizing antibodies seen with the Roche mAb is likely related to the engineering of the Fc end of that molecule designed to reduce its effector function.

AstraZeneca has indicated its intention to initiate an extensive phase I/II program with MEDI4736 in monotherapy and in combination with a variety of immunoactive and non immunoactive partners. We anticipate the first presentation of data on novel patient sets in 4Q 2014.

Figure 21. Change in tumor size (NSCLC) over time seen with MEDI4736 (anti PD-L1).



Source: Citi Research, Company Data. *Data as of 19th Aug 2013.*

Figure 22. AZN's anti-PDL1 looks remarkably potent given low dosages compared with other anti-PD1/PD-L1 agents under development

MEDI4736 Dose Level	Patient	Tumour Type	Number of Doses Received	Best Response (irRC)	%Change in Tumour Burden
0.1 mg/kg Q2W	1056201004*	NSCLC	22+	SD	-47.6%
0.1 mg/kg Q2W	1056201005	NSCLC	11	PD	+50.3%
0.1 mg/kg Q2W	1245501002	NSCLC	3	NE	NE
0.1 mg/kg Q2W	1245501003	Melanoma	8	PD	+55.8%
0.3 mg/kg Q2W	1094801002	CRC	5	PD	+>100%
0.3 mg/kg Q2W	1245501005	NSCLC	15+	uPR	-60.1%
0.3 mg/kg Q2W	1351901002	NSCLC	1	NE	NE
0.3 mg/kg Q2W	1351901004	NSCLC	14+	PR	-71.2%
1.0 mg/kg Q2W	1056201009	NSCLC	11+	SD	+42.2%
1.0 mg/kg Q2W	1094801003	NSCLC	10+	PR	-83.1%
1.0 mg/kg Q2W	1351901007	Melanoma	10+	PR	-69.1%

*Patient received prophylactic steroids prior to dosing

Source: Citi Research, Company Data.

AstraZeneca's anti-OX40 is closest to market.

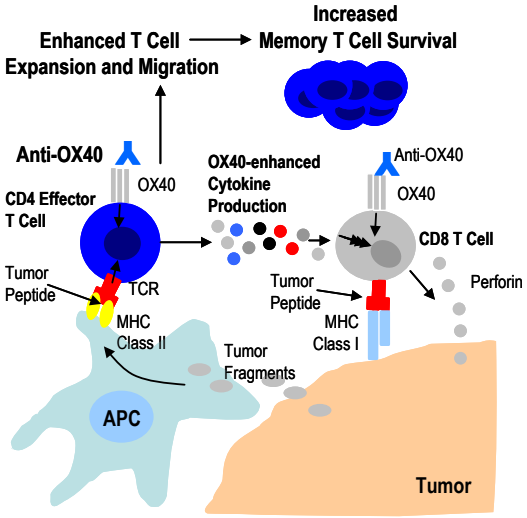
AZN's anti-OX40 co-stimulatory mAb is closest to market and has significant potential in combination with multiple treatment modalities across a range of indications

AZN is running pilot phase I/II trials with its murine OX40 stimulatory agonist Mab in metastatic breast and prostate cancer in combination with radio/chemotherapy. AstraZenenca has humanized OX40 antibodies and fusion proteins in pre-clinical development which will shortly enter clinical trials. AstraZeneca is set to report the first clinical data with an OX40 antibody in prostate cancer in combination with cyclophosphamide and radiation in 4Q 2014. We anticipate the first phaseI/II data in mBC in 1Q 2015.

OX40 is a promising co-stimulatory target in immune-oncology

As described in our in-depth report (*Immunotherapy – The Beginning of the End for Cancer*), we believe that OX40 and 4-1BB represent two of the most promising co-stimulatory targets for immune-oncology agents. We understand that AstraZeneca has a dominant position on the IP on the OX40 target, precluding or at least materially hindering competitive development. Anti-OX40 putative therapeutic activity is believed to be achieved through a direct impact on CD4 and CD8 potentiation and survival. Anti-OX40 also has a depleting impact on T-regs.

Figure 23. Modified schematic showing anti-OX40 mechanism of action

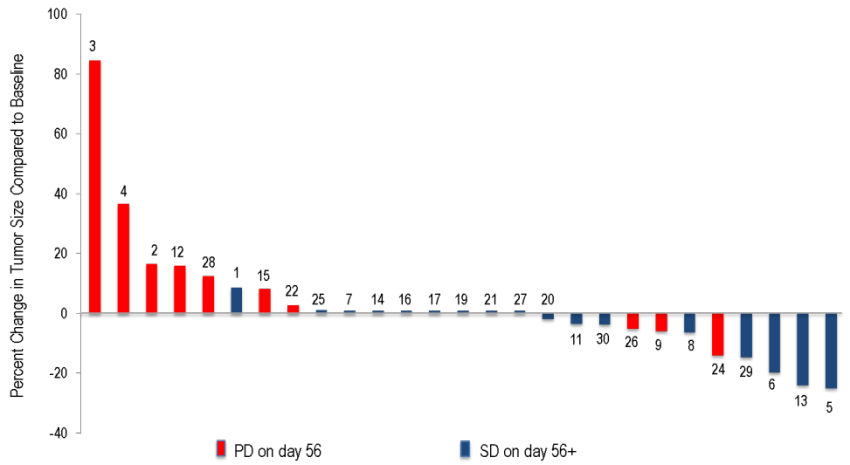


Source: Citi Research, Company data

Transient OX40 expression on activated T-cells means that anti-OX40 is an ideal agent for use in combinations.

Anti-OX40- an ideal agent for combination treatment. The transient nature of OX40 expression on activated T cells means that anti-OX40 needs to be (i) a part of a combination strategy; (ii) carefully scheduled. Anti-OX40 has shown limited efficacy against poorly immunogenic tumors in animal models and its only 30-odd patient phase I clinical trial. We anticipate that AstraZeneneca will initiate trials of their anti-OX40 in combination with tremelimumab, radiotherapy and chemotherapeutic agents.

Figure 24. Promising activity of anti-ox40 in early clinical trials.



Source: Citi Research, Company data

STAT3 inhibition could potentiate anti-OX40 activity. AZN recently licensed AZD9150 from ISIS with potential in monotherapy in refractory B cell cancers and combination with anti-OX40 in multiple solid and hematologic tumors.

AZN set to explore combination of anti-OX40 with STAT3 inhibitors. Exploratory preclinical data indicates that anti-OX40 activity is potentiated by the inhibition of STAT3. We note that AstraZeneca recently in-licensed the anti-sense STAT3 inhibitor AZD9150 from Isis. We anticipate active development on both these compounds to continue, both as monotherapy and in combination with AstraZeneca's anti-OX40 to begin shortly. Recently presented phase I data with AZD9150 indicates low grade III toxicity, single agent activity in refractory B cell malignancies but no evidence of activity in solid tumors as monotherapy. We note that AZN have a Ph1 trial underway testing anti-tumour activity of AZD9150. AZN has indicated that its murine anti-OX40 will not be developed beyond initial phase I trials. Instead the company will replace the current murine anti-OX40 with either a humanized version or a fusion protein before entering phase II

Increased thrombo-embolic disease is a risk for anti-OX40 therapies

Anti-OX40 immune related adverse events remain a long term concern. We anticipate that the therapeutic use of anti-OX40 mediated combinations will likely significantly increase the rate of thromboembolic disease. Mouse models have demonstrated that antagonizing the OX40L-OX40 pathway results in atherosclerotic regression. We therefore assume that activation of that pathway through an anti-OX40 antibody will likely increase vascular inflammation and therefore thromboembolic risk. We note that 1/30 patients in the phase 1 (30-patient) pilot trial experienced multiple thrombo-emboli, potentially associated with the drug.

TGF-Beta (Still in pre-clinical development, but high profile target)

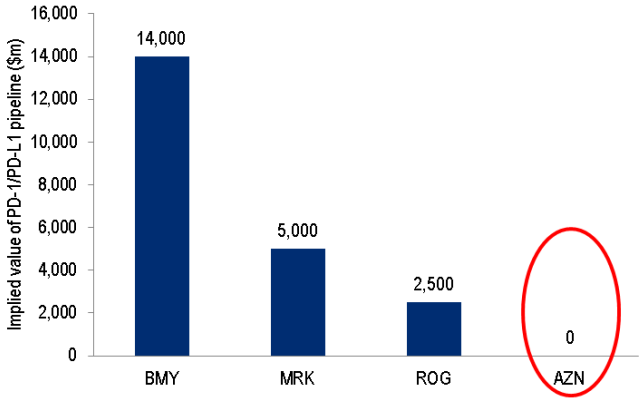
AZN has a potent mAb to αvβ6 integrin that inhibits TGF-Beta expression, an important immune-inhibitory molecule that could be complementary to its other immunomodulatory assets

We also note that AZN has agents targeting Transforming Growth Factor β (TGFβ), an immunoregulatory cytokine that may have profound synergies with AZN's IO monoclonal antibodies as well as with radiotherapy. TGFβ is key in the regulation of post-radiation changes suggesting potential for significant synergy of TGFβ targeted agents with radiotherapy. AZN has an anti-integrin αvβ6 (264RAD) which prevents integrin mediated activation of TGF-Beta and has demonstrated anti-tumour activity in animal models.

Predicting the long-term commercial potential of immunotherapy is challenging given the intense competition in the area and the rapid speed of development.

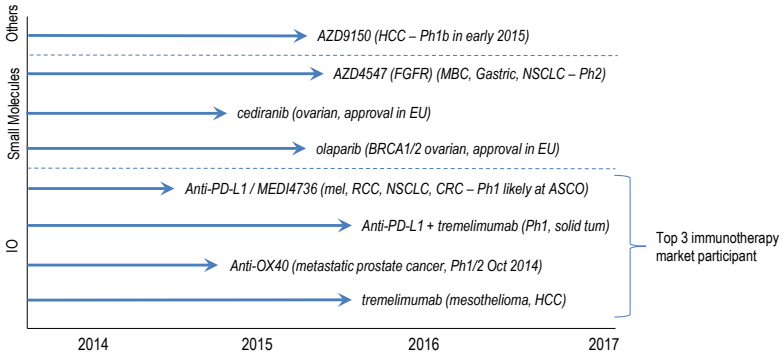
Predicting the long-term commercial potential of immunotherapeutic assets is challenging given the intense competition in the area and the rapid speed of development. The expanding modalities of immunotherapeutics, especially as combinations, coupled with ever intensifying therapeutic density necessitate a high risk reduction around estimates for this class. Nonetheless, AZN pipeline breadth and oncology expertise bode well in developing rational combinations in multiple cancers. Importantly, the current valuation indicates that the market is according no value to these assets. This is in sharp contrast to AZN's peers BMY, MRK and Roche as shown in Figure 26.

Figure 25. AZN's oncology portfolio remains largely discounted at current levels.



Source: Citi Research, Company data.

Figure 26. Significant newsflow for AZN's oncology pipeline over next 18 months.



Source: Company Data and Citi Research.

AZN's small molecule oncology portfolio – Peak sales potential >$3bn

AZN's small molecule portfolio in aggregate could exceed $3bn in peak sales. We expect AZN to explore the role of combination, thereby increasing the potential opportunity.

Four small molecules with aggregate peak sales potential in excess of $3bn. cediranib (specific and potential oral anti-VEGF TKI, ovarian cancer), olaparib (PARP inhibitor, BRCA1/2 ovarian cancer), AZD9291 (selective third-generation EGFR inhibitor, NSCLC) and AZD4547 (FGFR inhibitor). Cediranib and olaparib could receive earliest regulatory approval in 2014/2015.

Figure 27. AZN has an attractive, yet underappreciated portfolio of oral cancer drug. Four drugs highlighted below have cumulative peak sales potential of $3bn

	2014	2015	2016	2017	2018	2019	2020	2021	2022
olaparib	108	270	432	583	745	885	982	1,047	1,079
cediranib	-	70	176	281	379	484	576	639	681
AZD4547	-	-	-	54	135	216	292	373	443
AZN 9291	-	-	-	54	135	216	292	373	443
	108	**340**	**607**	**971**	**1,394**	**1,801**	**2,141**	**2,431**	**2,646**

Source: Citi Research, *Note: there are risk-adjusted estimates, with risk adjustment varying between 54% and 83%*

Cediranib (anti-VEGF). Resurrected and potential adjunct to IO

Clinically meaningful PFS/OS benefit second-line platinum-sensitive ovarian cancer should support an imminent cediranib filing. Potential for AZN to explore combinations with immunotherapy

Cediranib recently showed significant and clinically material PFS and OS benefit in the maintenance setting in second line platinum-sensitive ovarian cancer in the recently presented ICON6 trial. We expect cediranib to be filed shortly in this highly refractory setting. While second-line ovarian cancer maintenance is likely a limited commercial opportunity (c.$1.5bn peak sales), we see the potential for AZN to explore combinations of cediranib with their anti-PDL1. Roche and BMY are exploring whether the pre-clinical synergies of concomitant anti-PDL1 and anti-VEGF therapy translate into clinical practice.

Figure 28. Maintenance treatment with cediranib showed a 2.7 month OS benefit over placebo arm(both on top of chemo)

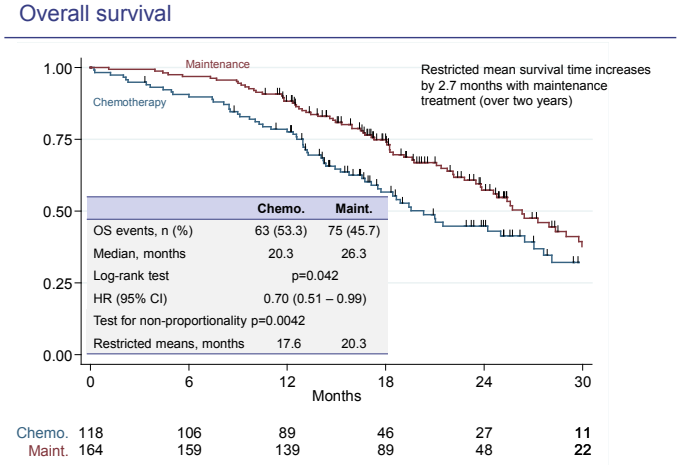
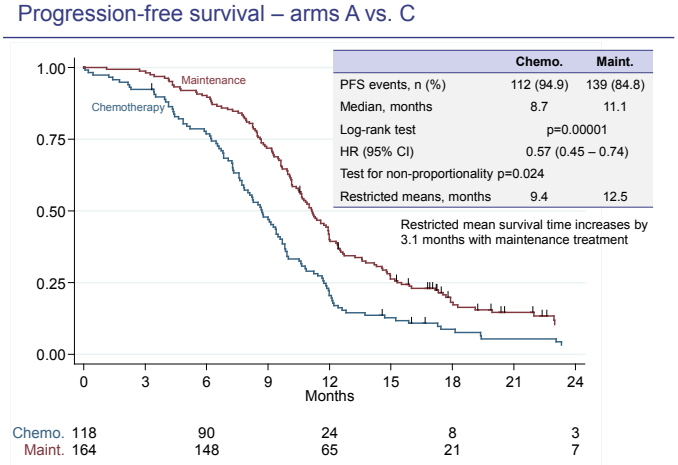


Figure 29. Maintenance treatment with cediranib showed a 3.1 month PFS benefit over placebo arm(both on top of chemo)



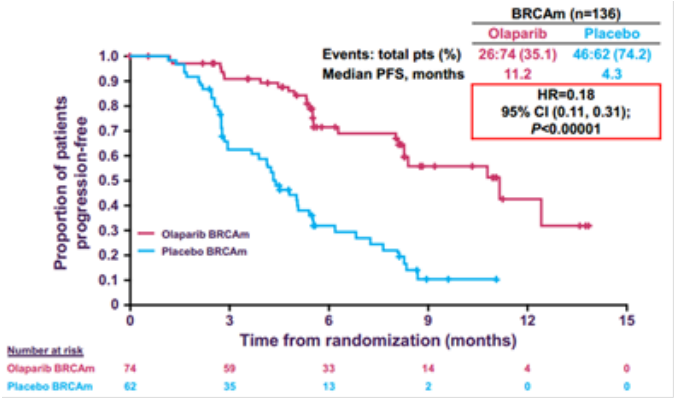
Source: Citi Research, ECCO-ESMO presentation. Note: survival data presented use restricted means to compare the two arms. Cediranib showed an improvement in median OS and median PFS by 6 months and 2.4 months respectively

Olaparib (PARP inhibitor). $1bn potential across multiple indications

Potential approval in 2014 for maintenance treatment of BRCA mutated platinum-sensitive replased ovarian cancer following recent strong data

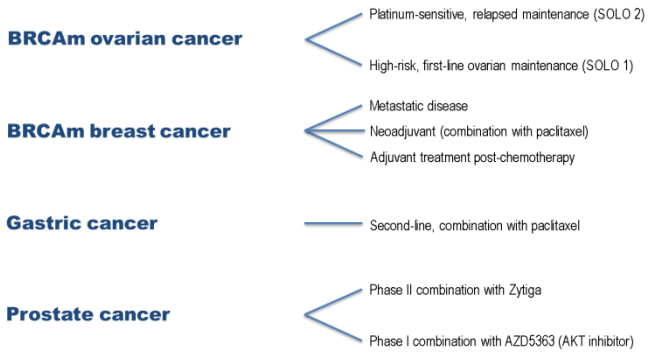
AZN has filed olaparib with the EMA in Europe for maintenance use in BRCA1/2 mutated platinum sensitive relapsed serous ovarian cancer patients on the back of highly supportive phase II data showing a c.7 month median PFS benefit. The company is currently running phase III trials in the 1st line and 2nd line maintenance BRCA mutated ovarian populations, trials in multiple lines in BRCA mutated breast cancer as well as combination trial with Taxol for gastric cancer. AZN's olaparib will compete with PARP agents from Biomarin, Clovis and Tesaro at similar stages of development. Here again, we note there is considerable potential for combining olaparib with AZN emergent immunotherapy pipeline, dependent on acceptable toxicities.

Figure 30. Olaparib showed a c.7 month median PFS benefit in BRCAm patients



Citi Research, Company Data

Figure 31. AZN has an extensive development plan for olaparib across multiple cancer types



Source: Citi Research, Company Data

Figure 32. Key indications being evaluated for various PARP inhibitors

Company	AZN	Biomarin	Clovis	Tesaro
Drug	**olaparib**	**BMN-673**	**rucaparib**	**niraparib**
Key Indications	BRCA+ ovarian metastatic breast metastatic gastric	metastatic breast neoadjuvant breast	metastatic ovarian	metastatic ovarian metastatic breast

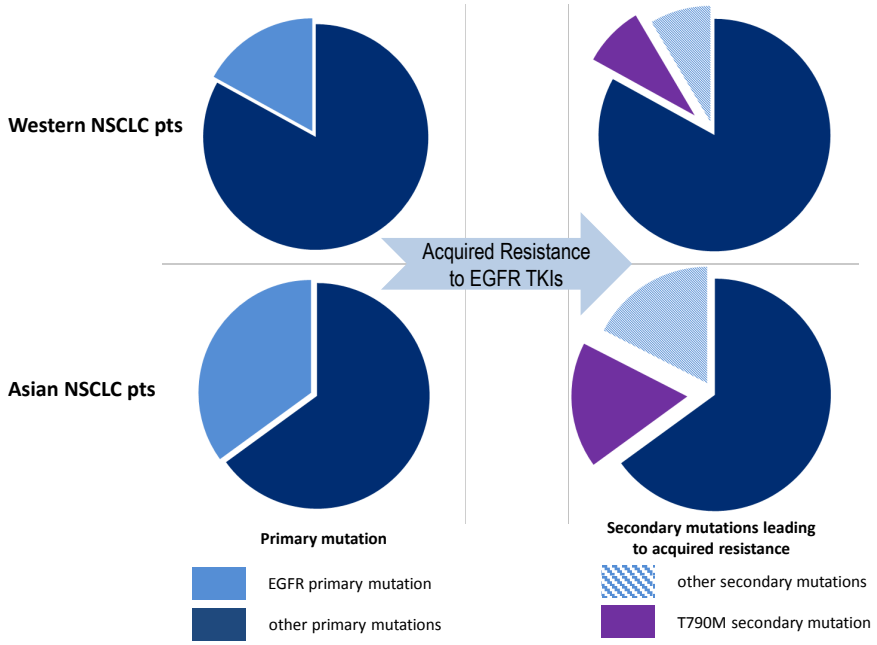
Source: Citi Research, Company data

AZD9291 (irreversible EGFR inhibitor). Likely 1st line agent

AZD9291 has shown activity against T790M mutations that is seen in 50% of patients on 1st line EGFR inhibitors.

AZD9291 is an irreversible EGFR inhibitor with activity against the T790M mutation in NSCLC patients who are non-responsive to currently approved EGFR inhibitors. Most patients on 1st generation EGFR inhibitors develop resistance to the drugs in 10-11 months. T790M mutations account for c.50% of resistance to 1st generation EGFR inhibitors. In the US/EU, 8% of all patients with NSCLC will have a T790M mutation; prevalence of this mutation is much higher in Asian patients with NSCLC in whom the prevalence is almost 17%.

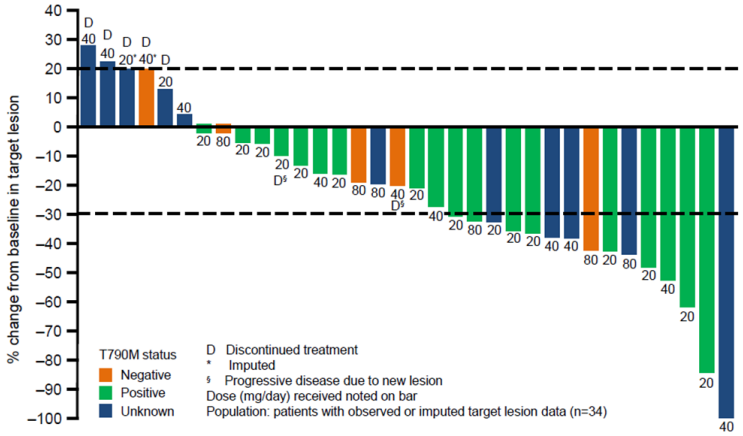
Figure 33. T790M mutations account for 50% of acquired resistance to 1st generation EGFR inhibitors



Source: Citi Research

Early phase I data from the AURA trial showed a response rate of 43%, with 9 out of 18 patients with T790M+ tumors achieving a partial response, with largely mild rash and diarrhea being the most common adverse events.

Figure 34. Best % change from baseline in target lesions, n=34



15/35 patients evaluated had a partial response (confirmed and unconfirmed)
9/18 patients with T790M+ tumours achieved a partial response (confirmed and unconfirmed)

Source: Citi Research, Company Data

$1bn sales potential supported by 13,000 T790M mutation patients in US/EU.

In the US, we estimate there are 8k NSCLC patients with the T790M mutation eligible for treatment with these agents. In the EU, we estimate there 5k patients with the T790M mutation. While we do not include Asian patients, given the demographics, this is a substantial upside opportunity. Assuming a price of $90000 per annum, we calculate peak market sales in EGFR refractory patients of over

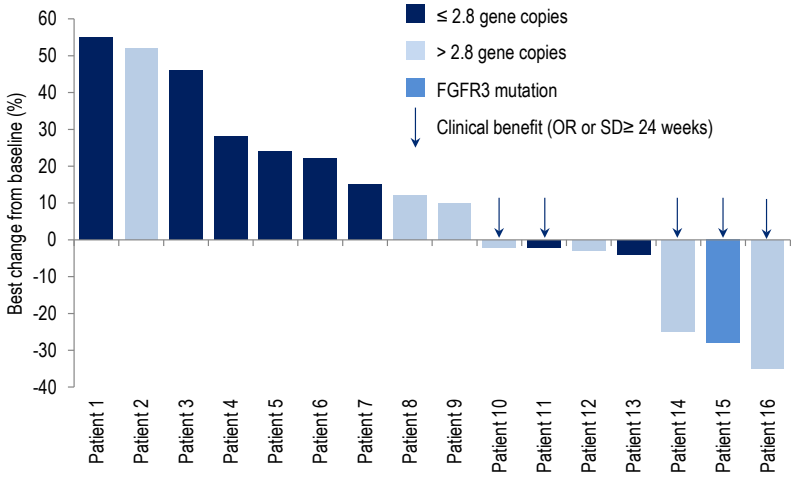
$1bn per annum globally. We note other 3rd generation EGFRs from Clovis also in development for the T790M patient population. While it is tough to discern differences in activity, we believe there is scope for multiple agents to be used in this setting.

AZD4547 (FGFR1,2,3 inhibitor). Early but potential across indications

AZD4547, a FGFR1/2/3 inhibitor has shown promising activity in early stage trials. Initial opportunity is in FGFR amplified gastric cancer patients but with potential utility across a variety of solid tumours

AZD4547 is an oral inhibitor of FGFR1,2 and 3. Early phase I data has demonstrated efficacy in NSCLC, bladder and renal cancer with FGFR amplification. The company is exploring the utility of the drug in lung, breast and gastric cancers. We estimate that 13-22% of squamous NSCLC have FGFR mutation or amplification and is associated with a poorer prognosis. We do not anticipate commercialization until at least 2016 but the breadth of FGFR overexpression makes the commercial potential substantial.

Figure 35. Promising activity of FGFR inhibitors in early trials.



Source: Citi Research, Company data

AZN has multiple studies ongoing, with Ph2 gastric cancer study readout in 2014. There are 6000 patients in G7 with FGFR amplified gastric cancer. Earlier stage trials are ongoing in breast and squamous NSCLC.

PEGASUS Trial Key To Transforming Brilinta Outlook To A $3bn Dollar Drug

Our >$3bn sales outlook underpinned by positive expectations on data from ongoing PEGASUS trial; we ascribe a high probability of success.

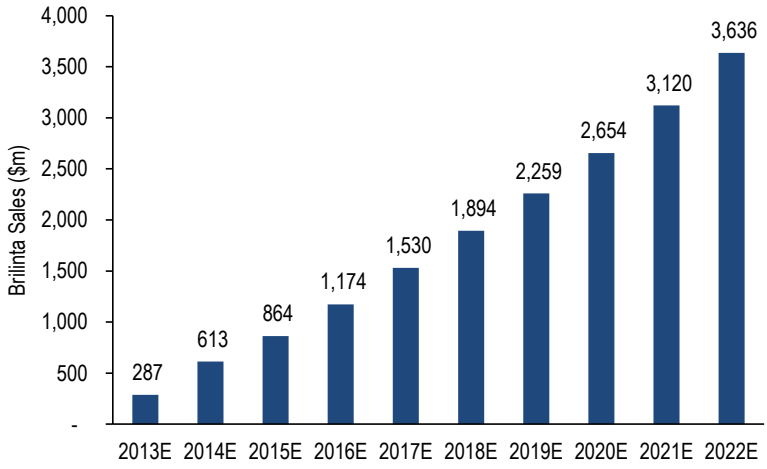
We anticipate that Brilinta will generate >$3bn per annum by 2021, by leveraging the likely positive data from the forthcoming PEGASUS trial (data due early 2015). We ascribe a high probability of success for this trial and think this will be key to driving sales not only in the post ACS indication, but also by reassuring US cardiologists about the drug's safety should lead to greater traction in the incident ACS indication.

Figure 36. Our Brilinta sales estimates are up to 20% ahead of consensus

Brilinta Revenues	2013E	2014E	2015E	2016E	2017E	2018E
Citi	287	613	864	1,174	1,530	1,894
Consensus	288	525	767	1,040	1,298	1,581
Delta	*(0.3%)*	*16.8%*	*12.6%*	*12.8%*	*17.9%*	*19.8%*

Source: Citi Research, Company data

Figure 37. Positive PEGASUS data could transform Brilinta outlook; we est. >$3bn sales potential



Source: Citi Research, Company Data

Disappointing commercial launch of Brilinta was a function of both internal and external market dynamics

Brilinta's commercial disappointment since launch is a function of both internal and external dynamics. On the internal side, AZN was complacent and under resourced with marketing believing the positive PLATO mortality data would ensure rapid uptake among providers and clinicians, an error compounded by the company's attempts to minimize the drug related shortness of breath found in c.20% patients on initiating therapy. On the external side, the widespread availability of generic Plavix and the deficiencies in the Brilinta US database provided a material commercial hurdle in the US. This was further compounded by the recent revision of hospital formularies to include Lilly's Effient.

Relaunch always a challenge; PEGASUS could help transform sales potential of Brilinta

Despite AZN attempts to reboot its marketing effort and some evidence of improved script trends in EU markets, it remains challenging to relaunch a drug following an initial poor market introduction. The PEGASUS trial provides a chance to both expand the patient population and alter provider and physician perception of Brilinta versus generic Plavix

PEGASUS is a re-do of the failed CHARISMA trial with Plavix, with key learnings incorporated, increasing probability of its success

PEGASUS is a 21,000 patient trial anticipated to report in mid-2014. The trial is effectively a redo of the failed CHARISMA trial with Plavix for second prevention of MI in high risk patients. Aspirin is the only approved anti-platelet agent for secondary MI prevention. While CHARISMA failed to show a benefit on top of aspirin for the primary endpoint, the trial showed a 23% relative risk reduction in the 47% of patients in the trial who had had a previous MI.

CHARISMA showed a positive signal in patients who had had a previous heart attacks; PEGASUS only includes patients with a prior history of heart attacks

The trial sponsors have taken the learnings from the failed CHARISMA trial and applied it to the trial design of PEGASUS in order to increase the probability of a highly significant primary endpoint. The key modifications include the inclusion in PEGASUS of only patients who have had a previous myocardial infarction. CHARISMA's more generous inclusion criteria included patients without a history of MI but with diabetes and risk factors. The powering of PEGASUS has also been increased given the total patient population of 21,000 compared with 4441 pts with a previous MI in CHARISMA (out of a total of 9,478 pts).

AZN has attempted to account for the increased bleeding rate in the drug arms through the inclusion of two dosages similar to the Pradaxa RE-LY registration trial, the 90mg BID dose as approved for the ACS indication and a lower 60mg BID dose.

A clinically meaningful reduction in MIs could help reassure US docs about the net clinical benefit of Brilinta as well as lead to a halo effect in the incident ACS indication

The PEGASUS trial has several potential benefits to AZN.

1. Assuming the trial demonstrates an aggregate 12-15% reduction in MI without a significant increase in major bleeds, we anticipate a significant contribution in the secondary prevention indication (where Plavix is not approved).
2. The PEGASUS trial gives AZN the opportunity to demonstrate that Brilinta is associated with net treatment benefit in the US population (on top of low dose aspirin). Supportive data for the US cohort would allow AZN to minimize residual safety concerns among US clinicians.
3. Evidence of a net benefit in PEGASUS that continues and increases with time would significantly increase the duration of therapy in Brilinta treated ACS patients

AZN's efforts at physician/patient education have helped stabilize trial recruitment despite initial higher dropouts due to breathlessness

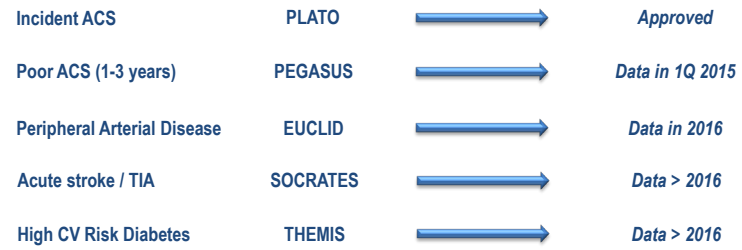
We understand that the initial drop-out rate from the Brilinta treated arms of PEGASUS was much higher than PLATO, predominately due to a 15-20% dyspnea rate. Asymptomatic patients are less tolerant of intensified shortness of breath. However, we understand that the dropout rate has normalized to anticipated levels given intensified efforts at physician / patient education by AZN.

PEGASUS should drive Brilinta revenues in three dimensions

The bulk of the anticipated positive commercial impact should come from a halo effect in the incident ACS indication driven by reassurance on safety and differentiated positioning vs. generic Plavix.

We assume that the bulk of revenue growth from Brilinta post PEGASUS will be driven by the ACS indications. We doubt that may treatment naive patients post ACS will likely initiate Brilinta in the non-acute setting. Instead, we see the majority of the volume growth coming from increased market share in the incident ACS segment due to allayed safety concerns and heightened differentiation compared with generic Plavix. In addition, we anticipate that the majority of ACS patients who can tolerate the increase in minor bleeding will likely remain on therapy considerably longer than the current 12 months period. We note that AZN has three additional Brilinta trials listed below that offer additional potential upside, dependent on outcome.

Figure 38. Brilinta PARTHENON clinical trial program involving >80,000 patients.



Source: Citi Research, Company Data

Key Catalysts

Figure 39. AstraZeneca Key Catalysts

Date	Product	Event Category	Event Sub-type	Comment
4Q 2013	CXL104	Clinical	Data Release	Completion of Ph2 dose-ranging study and Ph3 Go/No-Go of beta lactamase inhibitor (NXL-104) / ceftaroline combination in patients with complicated urinary tract infections in 2013
4Q 2013	tralokinumab	Clinical	Data Release	Ph2 data with anti-IL-13 Mab in severe uncontrolled asthma
4Q 2013	AZD5423	Clinical	Data Release	Ph2 results for non-steroidal Selective Glucocorticoid Receptor Modulator (SGRM)
4Q 2013	sifalimumab	Clinical	Data Release	Ph2 results with IFNa mAB in SLE
11-Jan-14	Forxiga	Regulatory	US PDUFA / Action Date	Potential FDA approval of resubmitted NDA for type II diabetes - late 2013 / early 2014
16 May 2014	benralizumab (anti-IL-5R)	Clinical	Data Release	Ph2b results for anti-IL-5R Mab in asthma (eosinophil positive patients) at ATS, 16-21 May 2014
2Q 2014	AZD5069	Clinical	Data Release	Ph2 data with CXCR2 antagonist in severe asthma
1H 2014	MEDI-546	Clinical	Data Release	Ph2 results with IFNaR mAB in SLE
1H 2014	CAZ-AVI	Clinical	Data Release	Results of 5 Ph3 trials of ceftazidime and avibactam (NXL104) combo started in Oct-11 testing patients with complicated IAI/ or complicated UTI gram negative infections
1H 2014	lesinurad	Clinical	Data Release	Topline data possible from Ph3 trials of lesinurad in gout (CLEAR-1/2)
1H 2014	Symbicort	Regulatory	Competitor Activity	Potential approval of Orion's budesonide-formoterol generic (de-centralised procedure)
1H 2014	Symbicort	Regulatory	Competitor Activity	Potential approval of Teva's Symbicort MAA, filed Jan 2013 (DPI)
3Q 2014	Brilinta	Clinical	Data Release	Data from the Ph3 PEGASUS TIMI-54 study in CV prevention on top of aspirin (3 yrs treatment) in mid-14
2H 2014	brodalumab (AMG 827)	Clinical	Data Release	Ph3 data for brodalumab in moderate to severe psoriasis (3 studies vs ustekinumab and/or placebo)
4Q 2016	moxetumomab pasudotox	Clinical	Trial Initiation	Ph3 results from anti-CD22 recombinant imunotoxin in hairy cell leukaemia (FDA orphan designation)
2016	Brilinta	Clinical	Data Release	Data from the EUCLID trial in patients with PAD
2017	Bydureon	Clinical	Data Release	Bydureon EXSCEL CV outcomes study results

Source: Company Data and Citi Research

Companies mentioned:

AbbVie (ABBV.N; US$48.30; Not Rated); Amgen Inc (AMGN.O; US$115.36; 1); Actelion Ltd (ATLN.VX; SFr74.50; 2); AstraZeneca PLC (AZN.L; £33.05; 2); Bayer AG (BAYGn.DE; €94.70; 1); Bristol Myers Squibb (BMY.N; US$51.60; 1); Celgene Corp (CELG.O; US$154.87; 1); GlaxoSmithKline PLC (GSK.L; £16.34; 2); Hospira (HSP.N; US$38.56; 3); Johnson & Johnson Inc (JNJ.N; US$94.84; 1); Eli Lilly (LLY.N; US$50.80; 1); Merck KGaA (MRCG.DE; €125.10; 2); Merck & Co (MRK.N; US$47.95; 2); Novartis AG (NOVN.VX; SFr71.65; 1); Novo Nordisk A/S (NOVOb.CO; Dkr961.00; 1); Pfizer (PFE.N; US$31.85; 1); Roche Holding AG (ROG.VX; SFr253.90; 1); Sanofi SA (SASY.PA; €79.06; 1); Shire Pharmaceuticals (SHP.L; £27.93; 1); UCB SA (UCB.BR; €48.85; 2)

Financials

Figure 40. AstraZeneca Annual Sales Model

$ mlns	FY11A	FY12A	FY13E	FY14E	FY15E	FY16E	FY17E	FY18E	FY19E	FY20E	FY21E	FY22E
Nexium	4,429	3,944	3,883	2,925	1,878	1,923	1,989	2,029	2,057	2,083	2,103	2,113
Losec	946	710	471	325	241	180	152	136	122	109	98	88
Others	161	198	228	226	224	223	221	220	219	218	217	217
Gastro-Intestinal	**5,536**	**4,852**	**4,582**	**3,476**	**2,343**	**2,326**	**2,363**	**2,385**	**2,398**	**2,410**	**2,418**	**2,418**
% Growth (reported)	**-9.1%**	**-12.4%**	**-5.6%**	**-24.1%**	**-32.6%**	**-0.7%**	**1.6%**	**0.9%**	**0.6%**	**0.5%**	**0.3%**	**0.0%**
Crestor	6,622	6,253	5,633	5,356	5,155	4,057	1,861	1,575	1,458	1,413	1,436	1,470
Seloken/Toprol-XL	986	918	821	808	808	812	830	845	861	883	910	942
Atacand	1,450	1,009	616	451	358	300	260	225	196	171	150	132
Tenormin	270	229	198	185	169	158	150	143	135	129	122	116
Zestril	144	129	117	112	108	104	100	95	85	77	69	62
Plendil	256	252	250	271	289	300	313	326	340	323	292	240
Brilinta	21	89	287	613	864	1,174	1,530	1,894	2,259	2,654	3,120	3,636
Onglyza	211	323	399	487	586	727	887	1,019	1,147	1,252	585	428
Forxiga	-	-	40	113	185	267	369	456	487	502	512	508
Byetta	-	74	212	251	201	80	40	42	44	47	49	51
Bydureon	-	37	167	290	449	593	741	874	1,005	1,106	1,161	1,219
Symlin	-	19	45	43	45	51	53	56	59	62	65	68
Metreleptin	-	-	-	30	41	51	61	73	84	92	101	112
Others	252	199	191	182	175	170	166	163	162	151	141	132
Cardiovascular	**10,212**	**9,531**	**8,976**	**9,193**	**9,432**	**8,844**	**7,361**	**7,786**	**8,322**	**8,861**	**8,714**	**9,117**
% Growth (reported)	**8.6%**	**-6.7%**	**-5.8%**	**2.4%**	**2.6%**	**-6.2%**	**-16.8%**	**5.8%**	**6.9%**	**6.5%**	**-1.7%**	**4.6%**
Symbicort	3,148	3,194	3,465	3,543	3,526	3,391	3,124	2,890	2,671	2,478	2,281	2,079
Pulmicort	892	866	865	885	897	902	919	941	945	954	966	983
Rhinocort	212	177	161	153	146	143	141	135	126	117	106	92
Others	216	178	165	162	160	158	156	154	152	147	143	139
Respiratory	**4,468**	**4,415**	**4,657**	**4,743**	**4,729**	**4,595**	**4,340**	**4,120**	**3,894**	**3,696**	**3,496**	**3,293**
% Growth (reported)	**9.0%**	**-1.2%**	**5.5%**	**1.8%**	**-0.3%**	**-2.8%**	**-5.5%**	**-5.1%**	**-5.5%**	**-5.1%**	**-5.4%**	**-5.8%**
Arimidex	756	543	345	258	206	189	160	137	116	98	84	72
Casodex	550	454	369	320	286	256	227	202	180	108	69	48
Zoladex	1,179	1,093	987	971	963	959	960	962	963	963	938	886
Iressa	554	611	659	719	734	736	736	747	641	483	365	275
Zactima	5	15	28	48	51	55	60	64	70	75	81	88
Others	659	773	795	800	801	789	778	768	758	748	739	731
Oncology	**3,703**	**3,489**	**3,183**	**3,117**	**3,042**	**2,984**	**2,922**	**2,880**	**2,727**	**2,476**	**2,276**	**2,100**
% Growth (reported)	**-8.5%**	**-5.8%**	**-8.8%**	**-2.1%**	**-2.4%**	**-1.9%**	**-2.1%**	**-1.4%**	**-5.3%**	**-9.2%**	**-8.1%**	**-7.7%**
Seroquel	5,828	2,803	1,742	1,537	1,422	1,333	687	622	462	384	346	344
Local Anaesthetics	602	540	508	494	483	455	432	411	394	380	369	360
Zomig	413	182	133	115	100	88	77	69	62	55	50	46
Diprivan	294	291	251	268	277	281	286	291	287	283	268	243
Vimovo	34	65	94	115	131	146	157	166	177	188	200	213
Others	33	42	69	72	75	79	82	87	92	97	104	111
Neuroscience	**7,204**	**3,923**	**2,796**	**2,600**	**2,488**	**2,381**	**1,721**	**1,646**	**1,473**	**1,387**	**1,336**	**1,316**
% Growth (reported)	**7.5%**	**-45.5%**	**-28.7%**	**-7.0%**	**-4.3%**	**-4.3%**	**-27.7%**	**-4.4%**	**-10.5%**	**-5.8%**	**-3.6%**	**-1.5%**
Synagis	975	1,038	1,073	1,111	1,151	1,165	1,180	1,194	1,024	881	760	658
Pandemic Flu	-	-	-	-	-	-	-	-	-	-	-	-
Merrem	583	396	312	297	297	301	284	267	252	237	224	211
FluMist	161	181	228	322	343	361	379	398	419	440	462	486
Other	139	100	101	95	89	84	79	75	72	68	65	63
Infection and Other	**1,858**	**1,715**	**1,714**	**1,825**	**1,881**	**1,911**	**1,922**	**1,935**	**1,766**	**1,626**	**1,511**	**1,417**
% Growth (reported)	**-14.8%**	**-7.7%**	**-0.1%**	**6.5%**	**3.0%**	**1.6%**	**0.6%**	**0.7%**	**-8.8%**	**-7.9%**	**-7.1%**	**-6.2%**
Aptium Oncology	224	48	-	-	-	-	-	-	-	-	-	-
Astra Tech	386	-	-	-	-	-	-	-	-	-	-	-
Pipeline Products	-	-	-	183	640	1,506	2,888	4,630	6,428	8,121	9,643	10,868
Other/Phase I/in-licensed	-	-	-	-	-	165	412	576	823	1,070	1,646	1,482
EU HC Reform Impact	-	-	(74)	(265)	(258)	(257)	(235)	(184)	(206)	(206)	(206)	(206)
Reported Revenues	**33,591**	**27,973**	**25,834**	**24,871**	**24,297**	**24,456**	**23,694**	**25,774**	**27,625**	**29,441**	**30,834**	**31,804**
% Growth (reported)	**0.9%**	**-16.7%**	**-7.6%**	**-3.7%**	**-2.3%**	**0.7%**	**-3.1%**	**8.8%**	**7.2%**	**6.6%**	**4.7%**	**3.1%**

Source: Company Data and Citi Research

Figure 41. AstraZeneca Pipeline ($m)

Product	Preclin	I	II	III	Filed	Peak Sales	Risk Adj Peak Sales8	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
Oncology / Infection																	
olaparib						1,300	1,079	-	108	270	432	583	745	885	982	1,047	1,079
cediranib						1,300	702	-	-	70	176	281	379	484	576	639	681
Moxetumomab pasudotox						500	270	-	-	27	68	108	146	186	221	246	262
selumetinib (AZD6244)						1,250	675	-	-	-	68	169	270	365	466	554	614
AZD4547						1,000	540	-	-	-	-	54	135	16	292	373	443
MEDI-573						1,500	330	-	-	-	-	33	83	132	178	228	271
MEDI-551						800	176	-	-	-	-	18	44	70	95	121	144
Tremelimumab (anti-CTLA4)						2,000	1,080	-	-	-	108	270	432	583	745	886	983
AZN 9291 (EGFR inhibitor)						1,000	540	-	-	-	-	54	135	216	292	373	443
MEDI-4736 (anti-PDL1)						2,000	1,080	-	-	-	-	270	432	583	745	886	983
MEDI-6469 (anti-OX40)						1,500	330	-	-	-	-	83	132	178	228	271	300
MEDI-3617 (anti-ANG2)						1,000	150	-	-	-	-	-	15	38	60	81	104
MEDI-565 (anti CEA BiTE)						1,000	150	-	-	-	-	-	15	38	60	81	104
MEDI-0639 (anti-DLL-4 mab)						1,000	150	-	-	-	-	-	15	38	60	81	104
AZD1208 (PIM kinase inhibitor)						1,000	150	-	-	-	-	-	15	38	60	81	104
AZD2014 (TOR kinase inhibitor)						1,000	150	-	-	-	-	-	15	38	60	81	104
AZD5363 (AKT inhibitor)						1,000	150	-	-	-	-	-	15	38	60	81	104
AZD8186 (PI3 kinase inhibitor)						1,000	150	-	-	-	-	-	15	38	60	81	104
AZD9150 (STAT3 inhibitor)						1,000	150	-	-	-	-	-	15	38	60	81	104
volitinib (MET inhibitor)						1,000	150	-	-	-	-	-	15	38	60	81	104
AMP-514						1,000	150	-	-	-	-	-	15	38	60	81	104
Infection						**2,050**	**541**	**-**	**-**	**27**	**72**	**127**	**198**	**278**	**353**	**416**	**469**
CAZ-AVI / CAZ104						250	135	-	-	14	34	54	73	93	111	123	131
Zinforo						250	135	-	-	14	34	54	73	93	111	123	131
AZD5847						350	77	-	-	-	-	8	19	31	42	53	63
CXL 104 (CEF104)						200	44	-	-	-	4	11	18	24	30	36	40
ATM AVI						250	38	-	-	-	-	-	4	9	15	20	26
MEDI-4893						250	38	-	-	-	-	-	4	9	15	20	26
MEDI-550						250	38	-	-	-	-	-	4	9	15	20	26
PRVV (MEDI-559)						250	38	-	-	-	-	-	4	9	15	20	26
Cardiovascular						**2,000**	**614**	**-**	**33**	**83**	**133**	**192**	**262**	**340**	**411**	**473**	**521**
Dapagliflozin						-	-	-	-	-	-	-	-	-	-	-	-
Metreleptin							-	-	-	-	-	-	-	-	-	-	-
Epanova						400	332	-	33	83	133	179	229	272	302	322	332
AZN1722						600	132	-	-	-	-	13	33	53	71	91	108
MEDI-6012 (ACP-501)						1,000	150	-	-	-	-	-	-	15	38	60	81
CNS						**1,650**	**640**	**-**	**42**	**104**	**166**	**241**	**328**	**412**	**482**	**540**	**583**
Naloxegol (NKTR-118)						500	415	-	42	104	166	224	286	340	378	403	415
AZD5213						250	55	-	-	-	-	6	14	22	30	38	45
AZD6765						250	55	-	-	-	-	6	14	22	30	38	45
AZD3241						250	55	-	-	-	-	6	14	22	30	38	45
AZD3293						400	60	-	-	-	-	-	-	6	15	24	32

Source: Company Data and Citi Research

Figure 42. AstraZeneca Pipeline continued ($m)

Product	Preclin	I	II	III	Filed	Peak Sales	Risk Adj Peak Sales8	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
Respiratory / Inflammation						**10,100**	**2,956**	**-**	**-**	**86**	**216**	**534**	**958**	**1,401**	**1,809**	**2,198**	**2,526**
AMG 827 (brodalumab) - Anti-IL17R						1,100	594	-	-	59	149	238	321	410	487	541	576
PT003 GFF (LABA/LAMA)						1,000	540	-	-	-	-	54	135	216	292	373	443
lesinurad						500	270	-	-	27	68	108	146	186	221	246	262
MEDI-8968 (anti-IL1R mab)						1,000	220	-	-	-	-	22	55	88	119	152	180
CAM-3001/mavirilumab (anti-GM-CSFR mab)						500	110	-	-	-	-	11	28	44	59	76	90
CAT-354/tralokinumab (anti-IL13 mab)						1,000	220	-	-	-	-	22	55	88	119	152	180
MEDI-546 (anti-IFNαR mab)						750	165	-	-	-	-	17	41	66	89	114	135
sifalimumab (anti-IFNα mab)						750	165	-	-	-	-	17	41	66	89	114	135
MEDI-563/benralizumab (anti-IL5R mab)						1,000	220	-	-	-	-	22	55	88	119	152	180
AZD5069 (CXCR2)						200	44	-	-	-	-	4	11	18	24	30	36
AZD5423 (inhaled SGRM)						200	44	-	-	-	-	4	11	18	24	30	36
AZD2115 (MABA)						500	110	-	-	-	-	11	28	44	59	76	90
MEDI-7183 (anti-a4b7 mab)						200	44	-	-	-	-	4	11	18	24	30	36
AZD8848 (inhaled TLR7)						200	30	-	-	-	-	-	3	8	12	16	21
AZD7594 (inhaled SGRM)						200	30	-	-	-	-	-	3	8	12	16	21
AZD7624 (ip38i)						200	30	-	-	-	-	-	3	8	12	16	21
MEDI-551 (anti-CD19 mab)						200	30	-	-	-	-	-	3	8	12	16	21
MEDI-5872 (anti-B7RP1 mab)						200	30	-	-	-	-	-	3	8	12	16	21
MEDI-9929 (anti-TSLP mab)						200	30	-	-	-	-	-	3	8	12	16	21
RDEA3170 (SURI)						200	30	-	-	-	-	-	3	8	12	16	21
Total						**39,950**	**12,512**	**-**	**183**	**640**	**1,506**	**2,888**	**4,630**	**6,428**	**8,121**	**9,643**	**10,868**

Source: Company Data and Citi Research

Figure 43. AstraZeneca Annual Profit and Loss Account

$ mlns	FY11A	FY12A	FY13E	FY14E	FY15E	FY16E	FY17E	FY18E	FY19E	FY20E
Sales	**33,591**	**27,973**	**25,834**	**24,871**	**24,297**	**24,456**	**23,694**	**25,774**	**27,625**	**29,441**
Cost of Sales	(6,026)	(5,393)	(5,235)	(5,124)	(5,139)	(5,170)	(4,906)	(5,162)	(5,307)	(5,478)
Gross Profit	**27,565**	**22,580**	**20,599**	**19,747**	**19,157**	**19,286**	**18,787**	**20,612**	**22,318**	**23,963**
Gross Margin (Reported) (%)	82.1%	80.7%	79.7%	79.4%	78.8%	78.9%	79.3%	80.0%	80.8%	81.4%
Gross Margin (Underlying) (%)	87.0%	81.6%	83.1%	82.7%	82.1%	81.4%	79.4%	80.1%	80.9%	81.5%
Distribution	(346)	(320)	(318)	(274)	(267)	(269)	(261)	(284)	(304)	(324)
R&D	(5,523)	(5,243)	(4,910)	(4,628)	(4,626)	(4,424)	(4,422)	(4,421)	(4,319)	(4,317)
SG&A	(11,161)	(9,839)	(10,247)	(9,584)	(8,958)	(8,693)	(8,693)	(8,693)	(8,826)	(9,065)
Other operating income	2,260	970	551	571	576	581	587	593	599	605
Core EBIT	**13,167**	**11,159**	**8,523**	**7,833**	**7,857**	**8,231**	**7,748**	**9,557**	**10,968**	**12,362**
margin	**39.2%**	**39.9%**	**33.0%**	**31.5%**	**32.3%**	**33.7%**	**32.7%**	**37.1%**	**39.7%**	**42.0%**
Core pre-R&D EBIT margin	**54.2%**	**55.1%**	**49.7%**	**48.8%**	**50.1%**	**51.3%**	**50.9%**	**53.8%**	**55.3%**	**56.6%**
Operating Profit (Post restructuring)	**12,795**	**8,148**	**5,675**	**5,833**	**5,882**	**6,481**	**5,998**	**7,807**	**9,468**	**10,862**
Operating Margin (Post exceptionals)	**38.1%**	**29.1%**	**22.0%**	**23.5%**	**24.2%**	**26.5%**	**25.3%**	**30.3%**	**34.3%**	**36.9%**
Share of JV/associates Op profits	-	-	-	-	-	-	-	-	-	-
Profit on sales of fixed assets	-	-	-	-	-	-	-	-	-	-
Net interest/financial income	(428)	(430)	(369)	(344)	(341)	(340)	(340)	(342)	(409)	(426)
Profit before tax (post restructuring)	**12,367**	**7,718**	**5,306**	**5,489**	**5,541**	**6,141**	**5,658**	**7,466**	**9,059**	**10,436**
Tax charged to PBT (post restructuring)	(2,351)	(1,391)	(1,221)	(1,208)	(1,219)	(1,351)	(1,245)	(1,642)	(1,993)	(2,296)
Tax rate (%)	19.0%	18.0%	23.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%
Post tax profit (post restructuring)	**10,016**	**6,327**	**4,086**	**4,281**	**4,322**	**4,790**	**4,413**	**5,823**	**7,066**	**8,140**
Attributable to minorities	(33)	(30)	(21)	(21)	(21)	(24)	(22)	(28)	(35)	(40)
Net Profit (post restructuring)	**9,983**	**6,297**	**4,065**	**4,260**	**4,300**	**4,766**	**4,391**	**5,795**	**7,032**	**8,100**
Average no. of Shares	1,361	1,261	1,253	1,265	1,277	1,290	1,295	1,295	1,296	1,298
Reported EPS	7.33	4.99	3.24	3.37	3.37	3.70	3.39	4.47	5.43	6.24
Core EPS	**7.28**	**6.87**	**5.01**	**4.56**	**4.54**	**4.73**	**4.42**	**5.50**	**6.31**	**7.13**
Dividends to Shareholders	(3,812)	(3,581)	(3,516)	(3,551)	(3,585)	(3,619)	(3,635)	(3,635)	(3,628)	(3,633)
Payout as % Core EPS	38.5%	40.7%	55.8%	61.4%	61.7%	59.2%	63.4%	50.9%	44.4%	39.3%
DPS	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**	**2.80**
Cover (reported EPS pre-restructuring)										
EBIT	12,795	8,148	5,675	5,833	5,882	6,481	5,998	7,807	9,468	10,862
Depreciation and amortization	2,550	2,518	2,618	2,714	2,811	2,909	2,950	2,995	2,738	2,790
EBITDA	**15,345**	**10,666**	**8,293**	**8,547**	**8,694**	**9,390**	**8,949**	**10,802**	**12,206**	**13,652**

Source: Company Data and Citi Research

Figure 44. AstraZeneca Annual Cashflow Statement

$ mlns	FY11A	FY12A	FY13E	FY14E	FY15E	FY16E	FY17E	FY18E	FY19E	FY20E
Group Operating Profit before taxation	**12,795**	**8,148**	**5,675**	**5,833**	**5,882**	**6,481**	**5,998**	**7,807**	**9,468**	**10,862**
Depreciation	1,086	1,023	1,056	1,091	1,128	1,167	1,208	1,252	1,299	1,348
Amortisation of Goodwill	-	-	-	-	-	-	-	-	-	-
Amortisation of Other Intangibles	911	1,296	1,562	1,624	1,684	1,742	1,742	1,743	1,439	1,442
Impairment	553	199								
Depreciation and amortisation	**2,550**	**2,518**	**2,618**	**2,714**	**2,811**	**2,909**	**2,950**	**2,995**	**2,738**	**2,790**
Stock (increase)/decrease	(256)	(150)	125	41	(6)	(11)	97	(95)	(54)	(63)
Debtors (increase)/decrease	(1,108)	755	465	403	156	(43)	207	(566)	(503)	(494)
Creditors increase/(decrease)	467	(1,311)	237	(569)	(483)	(193)	(119)	116	66	77
Increase in working capital	**(897)**	**(706)**	**826**	**(124)**	**(332)**	**(248)**	**185**	**(545)**	**(491)**	**(480)**
Profit on sale of subsidiary	**(1,483)**	**-**								
Other non cash movements	(597)	(424)	18	22	23	25	26	27	28	30
Cash Flows from operating activities	12,368	9,536	9,137	8,445	8,385	9,167	9,160	10,285	11,743	13,202
Interest paid	(548)	(545)	(884)	(865)	(865)	(865)	(865)	(865)	(931)	(931)
Tax paid	(3,999)	(2,043)	(1,221)	(1,208)	(1,219)	(1,351)	(1,245)	(1,642)	(1,993)	(2,296)
Net Inflow from Operating Activities	**7,821**	**6,948**	**7,033**	**6,372**	**6,301**	**6,951**	**7,050**	**7,777**	**8,819**	**9,975**
(Outflow)/inflow related to exceptionals	-	-	-	-	-	-	-	-	-	-
Acquisitions										
CAPEX on Tangible fixed assets	(839)	(672)	(800)	(840)	(882)	(926)	(972)	(1,021)	(1,072)	(1,126)
CAPEX on Intangibles/Goodwill	(458)	(3,947)	(2,000)	(2,000)	(2,000)	(2,000)	(750)	(765)	(780)	(796)
Purchase of fixed asset other investments	(11)	(46)	-	-	-	-	-	-	-	-
Disposal of fixed assets	102	242	-	-	-	-	-	-	-	-
Disposal of intangibles	-									
Disposal of Business Operations	1,772	-	-	-	-	-	-	-	-	-
Acquisitions of Business Operations	-	(1,187)								
Movement in short term investments & fixed deposits	(2,743)	3,619	-	-	-	-	-	-	-	-
Interest received	171	145	515	521	524	525	525	524	522	505
Dividends Received	-	7	-	-	-	-	-	-	-	-
Dividends paid to Minorities	(16)	(20)	(21)	(21)	(23)	(22)	(29)	(35)	(40)	0
Net Cash Inflow/(outflow) from investing activities	**(2,022)**	**(1,859)**	**(2,306)**	**(2,340)**	**(2,382)**	**(2,423)**	**(1,226)**	**(1,297)**	**(1,370)**	**(1,416)**
Issue of Share Capital	409	429	362	362	362	362	362	362	362	362
Share Repurchase	(6,015)	(2,635)	-	-	-	-	(1,000)	(1,000)	(1,000)	(1,000)
New Loans	-	1,980	-	-	-	-	-	-	-	-
Loans Repaid	-	(1,750)	-	-	-	-	-	-	-	-
Increase / (Decrease) in Short Term Borrowings	46	687	-	-	-	-	-	-	-	-
Equity dividends paid to shareholders	(3,764)	(3,665)	(3,516)	(3,551)	(3,585)	(3,619)	(3,635)	(3,635)	(3,628)	(3,633)
Others	3	31								
Net Cash Inflow/(Outflow) from financing activities	**(9,321)**	**(4,923)**	**(3,154)**	**(3,189)**	**(3,223)**	**(3,257)**	**(4,273)**	**(4,273)**	**(4,266)**	**(4,271)**
Net Increase/decrease in cash in the year	**(3,522)**	**166**	**1,572**	**844**	**696**	**1,271**	**1,551**	**2,207**	**3,182**	**4,288**
Cash and Equiv BOP	10,981	7,434	7,596	9,168	10,012	10,708	11,979	13,530	15,737	18,920
Exchange Rate Effects	(25)	(4)	-	-	-	-	-	-	-	-
Cash and Equiv EOP	**7,434**	**7,596**	**9,168**	**10,012**	**10,708**	**11,979**	**13,530**	**15,737**	**18,920**	**23,207**
Unsecured Bank Overdrafts	(137)	(105)	(105)	(105)	(105)	(105)	(105)	(105)	(105)	(105)
Cash and Equiv (Balance Sheet)	**7,571**	**7,701**	**9,273**	**10,117**	**10,813**	**12,084**	**13,635**	**15,842**	**19,025**	**23,312**
Free Cash Flow	6,615	2,525	4,233	3,532	3,419	4,025	5,328	5,991	6,967	8,053
Dividend payout as FCFO	57%	145%	83%	101%	105%	90%	68%	61%	52%	45%

Source: Company Data and Citi Research

Figure 45. AstraZeneca Annual Balance Sheet

$ mlns	FY11A	FY12A	FY13E	FY14E	FY15E	FY16E	FY17E	FY18E	FY19E	FY20E
Tangible fixed assets	6,425	6,089	5,833	5,582	5,337	5,096	4,860	4,629	4,402	4,180
Goodwill	9,862	9,898	9,898	9,898	9,898	9,898	9,898	9,898	9,898	9,898
Other Intangibles	10,980	16,448	16,886	17,262	17,578	17,836	16,844	15,867	15,208	14,562
Other Investments	543	940	940	940	940	940	940	940	940	940
Deferred Tax Asset	1,514	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111
Non Current Assets	**29,324**	**34,486**	**34,668**	**34,793**	**34,864**	**34,881**	**33,653**	**32,444**	**31,559**	**30,691**
Stocks	1,852	2,061	1,936	1,895	1,901	1,912	1,815	1,909	1,963	2,026
Trade	6,630	5,696	5,379	5,042	4,926	4,958	4,804	5,225	5,601	5,969
Other Debtors	2,124	1,933	1,785	1,719	1,679	1,690	1,637	,781	1,909	2,034
Short term investments	4,273	854	854	854	854	854	854	854	854	854
Income Tax Receivable	1,056	803	803	803	803	803	803	803	803	803
Cash and Equiv	7,571	7,701	9,273	10,117	10,813	12,084	13,635	15,842	19,025	23,312
Current assets	**23,506**	**19,048**	**20,031**	**20,430**	**20,976**	**22,302**	**23,548**	**26,415**	**30,154**	**34,999**
Total assets	**52,830**	**53,534**	**54,699**	**55,224**	**55,840**	**57,182**	**57,201**	**58,859**	**61,713**	**65,689**
						3				
Short term borrowings and overdrafts	(1,990)	(901)	(901)	(901)	(901)	(901)	(901)	(901)	(901)	(901)
Current instalments of loans	-	-	-	-	-	-	-	-	-	-
Trade Creditors	(2,155)	(2,449)	(2,366)	(2,316)	(2,323)	(2,337)	(2,218)	(2,334)	(2,399)	(2,476)
Other creditors	(8,217)	(7,691)	(8,010)	(7,492)	(7,002)	(6,796)	(6,796)	(6,796)	(6,796)	(6,796)
Income Tax Payable	(3,390)	(2,862)	(2,862)	(2,862)	(2,862)	(2,862)	(2,862)	(2,862)	(2,862)	(2,862)
Current liabilities	**(15,752)**	**(13,903)**	**(14,140)**	**(13,571)**	**(13,089)**	**(12,895)**	**(12,776)**	**(12,892)**	**(12,958)**	**(13,035)**
Total assets minus current liabilities	**37,078**	**39,631**	**40,559**	**41,653**	**42,751**	**44,287**	**44,424**	**45,967**	**48,755**	**52,654**
Loans	(7,338)	(9,409)	(9,409)	(9,409)	(9,409)	(9,409)	(9,409)	(9,409)	(9,409)	(9,409)
Other Liabilities	(385)	(1,001)	(1,001)	(1,001)	(1,001)	(1,001)	(1,001)	(1,001)	(1,001)	(1,001)
Retirement benefit obligations	(2,674)	(2,265)	(2,265)	(2,265)	(2,265)	(2,265)	(2,265)	(2,265)	(2,265)	(2,265)
Provisions	(474)	(428)	(446)	(468)	(492)	(516)	(542)	(569)	(597)	(627)
Deferred Tax Liabilities	(2,735)	(2,576)	(2,576)	(2,576)	(2,576)	(2,576)	(2,576)	(2,576)	(2,576)	(2,576)
Non-Current Liabilities	**(13,606)**	**(15,679)**	**(15,697)**	**(15,719)**	**(15,743)**	**(15,767)**	**(15,793)**	**(15,820)**	**(15,848)**	**(15,878)**
Net Assets	**23,472**	**23,952**	**24,862**	**25,933**	**27,009**	**28,520**	**28,631**	**30,147**	**32,907**	**36,776**
Called up share capital	323	312	312	312	312	312	312	312	312	312
Share premium account	3,078	3,504	3,866	4,228	4,590	4,952	5,314	5,676	6,038	6,400
Capital redemption reserve	139	153	153	153	153	153	153	153	153	153
Merger reserve	433	433	433	433	433	433	433	433	433	433
Other reserves	1,379	1,374	1,374	1,374	1,374	1,374	1,374	1,374	1,374	1,374
Profit and loss account	17,894	17,961	18,509	19,219	19,934	21,081	20,837	21,997	24,400	27,868
Shareholders' funds	**23,246**	**23,737**	**24,647**	**25,719**	**26,796**	**28,305**	**28,423**	**29,945**	**32,710**	**36,540**
Minority interests	226	215	215	215	213	215	208	202	197	236
Shareholders funds and minorities	**23,472**	**23,952**	**24,862**	**25,933**	**27,009**	**28,520**	**28,631**	**30,147**	**32,907**	**36,776**
Net Debt (incl. pensions)	158	4,020	2,448	1,604	908	(363)	(1,914)	(4,121)	(7,304)	(11,591)
Net Debt (excl. pensions)	(2,516)	1,755	183	(661)	(1,357)	(2,628)	(4,179)	(6,386)	(9,569)	(13,856)

Source: Company Data and Citi Research

AstraZeneca PLC

Company description

AstraZeneca (AZN) is a major pharmaceutical company with 2011 sales of $33.6bn. The company has major products in the following therapeutic areas - cancer, cardiovascular, gastrointestinal, infection, neuroscience and respiratory, and has a moderate biologics presence. The company has a strong presence in the key US market and reports in US dollars.

Investment strategy

We rate AstraZeneca Neutral as we see possibility of downward revision to near/mid term consensus EPS and limited visibility of pipeline catalysts until late-2014. However, we believe there is potential for substantial upside beyond 2016 given minimal value ascribed to AZN's extensive and growing cancer pipeline and longer term potential for key cardiovascular drug Brilinta; our forecasts are substantially ahead of consensus for 2016 and beyond. We expect AZN to enter into strategic earnings accretive bolt-on deals, including a potential restructuring of its diabetes JV with partner BMS.

We forecast a 2014-19e sales and EPS CAGR of 2% and 7% respectively. But looking out into 2017-22e, this improves to 6% sales and 13% EPS growth respectively.

Valuation

Our £35 target price reflects a target multiple of c.12x 2014E core earnings, a material discount to the EU large-cap pharma multiple. This is reflective of the possibility of near term earnings downgrades as AZN traverses through multiple headwinds (Symbicort generics in Europe, Nexium patent expiry) over the next couple of years. Longer term, we have a more optimistic assessment on AZN's developing breadth in oncology (both immuno-oncology and small molecules), respiratory (inhaled assets as well as biologics) as well as the outcome of the key PEGASUS trial for cardiovascular drug Brilinta. This is reflected in our DCF-derived intrinsic value of £49 per share which is a substantial premium to current price. We project free cash flows for an explicit 10-year period and thereafter apply terminal growth assumptions. Consistent with our sector methodology, which makes use of the CAPM to calculate the cost of equity, we use a WACC of 8.2% and assume a 0% terminal growth rate. In the absence of evidence for new internal or external drivers of value, we acknowledge the company's secure high free cash flow and dividend yields.

Risks

Downside risks include anticipated greater than expected sales erosion from generic launches (both anticipated and unanticipated), failure to commercialise key pipeline products (respiratory, oncology and others) and slowing sales growth in emerging markets.

Upside risks include higher-than-anticipated uptake of Brilinta post a positive outcome for the PEGASUS trial, faster commercialization of early stage oncology assets, stronger than expected growth of diabetes assets (Onglyza, Bydureon, Forxiga) and an acceleration in earnings accretive business development activities, which should help flatten the downward trajectory in earnings over the next few years.

Notes

Notes

Appendix A-1

Analyst Certification

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IMPORTANT DISCLOSURES

AstraZeneca PLC (AZN.L)

Ratings and Target Price History
Fundamental Research

Analyst: Andrew S Baum
Covered since May 31 2013

	Date	Rating	Target Price	Closing Price
1	12-Jan-11	*1M	*34.00	30.14
2	7-Oct-11	Stock rating system changed		
3	8-Oct-11	*1	34.00	29.61
4	24-Nov-11	Coverage terminated		
5	29-Nov-11	*2	*28.00	28.41
6	24-Oct-12	2	*30.00	28.85
7	31-May-13	2	*35.00	33.88

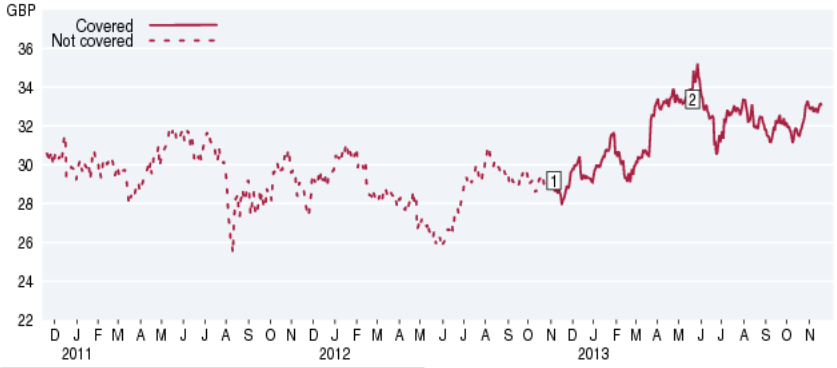
* Indicates change

Rating/target price changes above reflect Eastern Standard Time

AstraZeneca PLC (AZN.L)

Ratings and Target Price History
Best Ideas Research
Relative Call (3 Month)

Analyst: Andrew S Baum
Covered since May 31 2013



	Date	Rating	Target Price	Closing Price
1	6-Nov-12	*ADD LP	-	29.10
2	21-May-13	*REM LP	-	33.95

* Indicates change

Rating/target price changes above reflect Eastern Standard Time

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Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Merck & Co Inc
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% of companies in each rating category that are investment banking clients	55%	50%	43%	64%	51%	48%

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