

Galapagos NV (GLPG)
Rating: Buy

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Consolidation Post Gilead Transaction; Model Updates Post 3Q19

Stock Data	10/25/2019
Price	\$166.49
Exchange	NASDAQ
Price Target	\$205.00
52-Week High	\$191.63
52-Week Low	\$85.00
Enterprise Value (M)	\$4,099
Market Cap (M)	\$10,315
Shares Outstanding (M)	62.0
3 Month Avg Volume	118,790
Short Interest (M)	0.79

Balance Sheet Metrics	
Cash (M)	\$6,215.8
Total Debt (M)	\$0.0
Total Cash/Share	\$100.33

General: Currency used is roughly 1 Euro to \$1.11 US. Stock price is US\$ as on NASDAQ

EPS (€) Diluted			
Full Year - Dec	2018A	2019E	2020E
1Q	€(0.73)	€(0.89)A	€(0.36)
2Q	€(0.42)	€(0.86)A	€(0.60)
3Q	€0.27	€5.83A	€(0.70)
4Q	€0.27	€3.17	€(0.75)
FY	€(0.56)	€7.90	€(2.48)

Revenue (€)			
Full Year - Dec	2018A	2019E	2020E
1Q	€44.8	€40.9A	€149.0
2Q	€57.0	€67.6A	€149.0
3Q	€103.2	€644.0A	€154.8
4Q	€112.8	€364.4	€162.6
FY	€317.8	€1,116.9	€615.3



What's cooking? Front and center to any discussion on Galapagos concerns: (1) the likely RA label for filgotinib following the FDA decision to paint the JAK-class with a broad DVT/PE-related black box warning in the label for Rinvoq, which now has become the base case assumption for filgotinib; (2) the timing of the futility analysis for GLPG1690; (3) the outcome of the ROCELLA Phase 2b program in OA, anticipated during 2020; and (4) the clinical readout and target identification from the Toledo-class of compounds. Clarity on the likely label for filgotinib remains the biggest uncertainty; however, the safety profile of the JAK1-selective filgotinib remains compelling, devoid of EPO or JAK2 pathway activation translating into a differentiated hematologic and DVT/PE profile. The 3Q19 call provided limited clarity on the pending outcome of the NDA filing anticipated by YE19. Given that filgotinib's labeling outcome is not expected until 2H20, which assumes partner Gilead (GILD, not rated) pushes forward with a PRV, the current discussion is pure conjecture. This is one scenario where we believe management is likely to welcome an ADCOMM, which if successfully executed upon could translate into a label reflecting: (1) the 200 mg dose, which would make filgotinib the only JAKi approved at the highest dose; and (2) DVT/PE and malignancy-sparing black box, both of which could be commercially relevant differentiators, from our perch. Management is expected to provide clarity on the enrollment of the ISABELLA clinical program with GLPG1690, along with timing of the futility analysis during the planned R&D day update on 11/14/2019, which remains a significant near- to intermediate-term binary event for the stock, in our view. While there has been significant discussion on the two TOLEDO-generated compounds now in Phase 1, management is unlikely to disclose the potential targets at least until any potential Phase 2 programs initiate, in our view. Overall the stock remains an outperformer, up 86% YTD vs. a 14% gain in the XBI, leveraging off of the FINCH 1 and 3 readouts and the subsequent Gilead transaction, and we are staying with our Buy rating and \$205 target.

Ambitious plans for the \$6B cash: Toledo and beyond. The Toledo platform remains the near-to-intermediate term driver for the company's discovery engine. The company plans on advancing one or both Toledo generated leads i.e., GLPG3667, a pan-Toledo compound, and the more selective GLPG3970, into Phase 2 programs across multiple inflammatory indications. Management commentary suggests no near-to-intermediate term competition on the Toledo target for autoimmune diseases although, peers are investigating the target in oncology. Future, Toledo-derived assets could supplant filgotinib in autoimmune diseases if their safety profile is clean. More than 50% of research at Galapagos is focused on Toledo and given Gilead's involvement and cost sharing, Toledo is fully funded. The company is actively seeking to expand targets including RNA based technologies, but not necessarily RNAi or siRNA, and management is likely to be acquisitive if the program or platform offers the right synergies. Gilead would have rights to the novel targets and acquisitions. Importantly, if an opportunity called for a significant cash outlay, Gilead could come to the table. Current research initiatives in: hepB, metabolic indications, as well as in the CNS, along with investments in additional assets targeting OA.

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Filgotinib regulatory, commercial, and clinical updates. The company filed for approval of filgotinib in RA in the EU and Japan with potential availability in these markets in 2H20 pending reimbursement decisions, and partner Gilead is on track to complete U.S. filing prior to YE19. Launch preparedness includes messaging around the potentially differentiated hematologic and JAK-2 sparing profile of filgotinib, which has translated into the best PE/DVT profile to date. While U.S. efforts are being led by partner Gilead, Galapagos intends to build out a 150 employee sales and marketing organization in seven EU markets, where it is co-commercializing filgotinib. Other filgotinib programs to watch for include: (1) ulcerative colitis, for which we expect to have data during 2020; (2) initiation of a Phase 3 Psoriatic arthritis study; (3) additional analysis of the FINCH 2 program in patients with RA who were previously treated with a biologic; and (4) a pooled safety analysis of filgotinib across the FINCH programs. Both FINCH data analyses are expected at the American College of Rheumatology between November 8 to 13, 2019. On the negative side of the ledger, with no implications to our model considering these were not a part of our value proposition, the exploratory studies in cutaneous lupus and Sjogren's studies did not meet their primary endpoints. There was however evidence of filgotinib's activity not in random biomarkers but actually seen in relevant disease markers, particularly in patients who had markers or evidence of more active disease, as in patients with bone ascites. During the call, management hinted at optionalities to revive the programs in specific subsets of patients pending full data evaluation with an eye on the competitive landscape.

Other pipeline events. Beyond the Toledo programs, Galapagos in partnership with MorphoSys (MOR; not rated) and Novartis (NVS; not rated) has initiated the enthro-bridging study of MOR106, in Japan. In addition to GLPG1690, currently in Phase 3, Galapagos is pursuing GLPG1205, a GPR4 antagonist as another option for IPF and is currently in Phase 2. The resulting Phase 2 profile is likely to dictate any future combinations of GLPG1205 with GLPG1690.

Thoughts on GLPG1690. One potential concern voiced was that increased dosing of pirfenidone or nintedanib in the control arms could counter the decline in FVC leading to a diminished clinical effect associated with GLPG1690. However, this is unlikely given the tolerability issues with pirfenidone and nintedanib, and we expect higher than recommended dosing of these drugs could lead to increased rates of patient drop off in the control cohorts. FRI analysis from the FLORA study remains a key basis for management confidence in the program, but FRI remains a no-go in the Phase 3 ISABELLA programs due to cost and agency reticence. Note, validation for GLPG1690 comes from Bristol-Myers (BMJ; not rated) decision to pursue a new molecule targeting LPA1, downstream of GLPG1690's target, and Boehringer Ingelheim's (private) decision to in-license an autotaxin program despite passing on GLPG1690 two years ago. Per management, the enrollment in the ISABELLA programs are now accelerating and is currently ahead of schedule.

Exhibit 1: Clinical and Commercial Milestones Over the Next 16 Months

	Program	Indication	Phase and Milestone	Timing	Impact on Stock
Clinical Catalysts	GLPG1205	Idiopathic Pulmonary Fibrosis	PINTA Phase 2 recruited	Complete	Limited
	GLPG1205	Idiopathic Pulmonary Fibrosis	ACR Conference	4Q19	Moderate
	GLPG1690	Idiopathic Pulmonary Fibrosis	Futility analysis timing from the Phase 3 ISABELLA program	R&D day, 11/14/2019	Limited
	Mor106	Atopic Dermatitis	Japanese ethnobridging study	Initiated	Limited
	'3970	Multiple inflammatory indications	Phase 1	Initiated	Limited
	'3312	Inflammatory Bowel Disease	PoC	Initiation 1H20	Limited
	'3312	Multiple inflammatory indications	Phase 1 readout	Initiation 1H20	High
	'3667, '3970	Inflammation	Phase 1 readout	2H20	High
	Mor106	Atopic Dermatitis	IGUANA Phase 2 topline	YE19 to 1Q20	High
	'2534	Atopic Dermatitis	Phase 1 start	Initiation 1H20	Limited
	'3970	Inflammation/Target identification	Several Phase 2a trials start	2020	High
	GLPG1972	Osteoarthritis	ROCELLA Phase 2b Topline	2H20	High
	Filgotinib	Ulcerative Colitis	Phase 3 topline	2020	High
	Commercial	Filgotinib	Rheumatoid Arthritis	EMA and Japanese regulatory filing	Complete
Filgotinib		Psoriatic Arthritis	Phase 3	Initiated	Limited
Filgotinib		Rheumatoid Arthritis	NDA submission	Completion by YE19	Limited
Filgotinib		Rheumatoid Arthritis	EU commercial launch	2H20	Moderate
Filgotinib		Rheumatoid Arthritis	FDA label and U.S., commercial launch	Late 2020 or 1Q21	High

Source: H.C. Wainwright & Co. estimates.

Landmark deal with long-time collaborator, paves the way for strong revenue line in 3Q19. For 3Q19, Galapagos reported a net gain of €361M vs. our estimates of €297.4M, with GAAP EPS of €5.83 vs. our estimates of €4.80. The €596M topline reflected: (1) €667M immediate recognition for the opt-in of '1690; (2) €24M recognition of the platform portion upfront; and (3) (€94M) negative impact on filgotinib revenue recognition. Balance sheet currently reflects \$6.2B (€5.6B) in cash and equivalents, which includes Gilead's recent collaboration deal of roughly \$3.95B in cash, and \$1.1B in equity investment. Galapagos now has €3.1B in deferred revenues, which would drive at least €400M in revenue recognition annually in the next 4-5 years, which is expected to trail off to roughly €200M per year after that. Together, these cash reserves should be sufficient to fund operations for at least six years, by our estimates. Note, as Galapagos builds out filgotinib's commercial position in 2020, filgotinib-related spend in the next five years would equate to roughly €750M in total. For FY19 and FY20 we estimate GAAP EPS of €7.90/share and €(2.48)/share, respectively, vs. prior estimates of €8.52/share and €2.21/share, respectively.

Valuation and risks to our investment thesis. Our 12-month price target on shares of Galapagos is \$205, which is derived from a 13-year DCF-based, sum-of-the-parts analysis. Our DCF is driven by: beta of 1.26, terminal growth rate of -3.0%, risk premium of 4.93%, calculated WACC of 8.2%, and tax rate of 20% beginning in FY 2025. Filgotinib (68%), GLPG1690 and GLPG1972 (3% each) together make up about 75% of our value, with the remainder derived from the probability-adjusted, filgotinib-associated milestone payments. For filgotinib, we assume POS in the range of: 80% for RA based on the FINCH 1 and 3 clinical updates released post close on March 28, 2019, 65% for UC, and 60% for CD, PsA and AS each, whereas for '1690 and '1972, we assign a 35% and 10% POS, respectively. Key risks include: emergence of safety concerns, clinical risks, regulatory risks, and financial risks. Furthermore, regulatory and commercial strategy for filgotinib is under the control of partner, Gilead, not an established player in autoimmune indications. Hence, Gilead may not be able to drive rapid adoption of filgotinib, especially if the overall profile is relatively undifferentiated from AbbVie's (ABBV; not rated) upadacitinib, in our view. Hence, our estimates could be negatively impacted if AbbVie successfully leverages its market positioning with Humira during the launch of upadacitinib, which is likely to be a year ahead of filgotinib. The next two value drivers for Galapagos are GLPG1690 and GLPG1972 programs, both of which are high-risk, high-reward programs given the checkered history of drug development of each target.

Valuation: Galapagos (GLPG) Discounted Cash Flow (DCF) Analysis

		Discounted Cash Flow Analysis														
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	TV	
Ticker	Galapagos															
Period	2028E															
Beta est	1.26															
Risk-free rate (R _F)(10 yr yield)	2.00%															
Risk premium (R _p)	4.93%															
Cost of equity (K _E)	8.2%															
Cost of debt (K _D)	0.0%															
Terminal growth rate	-3.0%															
Terminal value (% of total value)	42.2%															
Shareholder equity	8,348,082															
Debt outstanding	0															
Total capital	8,348,082															
Equity/cap	100.0%															
Debt/cap	0.0%															
WACC (calculated)	8.2%															
WACC (applied)	8.2%															
Shares outstanding	63,521															
		EBIT (000s €)	€ 592,676	€ (156,904)	€ (160,605)	€ 29,598	€ 350,283	€ 582,263	€ 895,603	€ 1,379,104	€ 1,469,952	€ 1,532,824	€ 1,489,358	€ 1,507,322	€ 1,517,380	
		Tax rate	-3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	
		EBIT*(1-t)	614,903	(156,904)	(160,605)	29,598	350,283	582,263	716,483	1,103,283	1,175,961	1,226,259	1,191,486	1,205,857	1,213,904	
		Capital expenditures	(18,572)	(20,000)	(22,000)	(24,200)	(26,620)	(29,282)	(32,210)	(35,431)	(38,974)	(42,872)	(47,159)	(51,875)	(57,062)	
		% growth	78.7%	7.7%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	
		Depreciation	12,087	14,000	16,800	17,640	18,522	19,448	20,421	21,442	22,514	23,639	24,821	26,062	27,365	
		% growth	188.4%	15.8%	20.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
		Change in non-cash working capital	(175,152)	(161,149)	(166,392)	(179,056)	(202,236)	(202,077)	(201,913)	(201,744)	(201,570)	(201,391)	(201,207)	(201,017)	(200,821)	
		% growth	-334.7%	8.0%	-3.3%	-7.6%	-12.9%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	
		Free cash flow to the firm	820,714	38,245	44,587	250,495	597,661	833,070	971,026	1,361,900	1,439,020	1,494,162	1,464,673	1,484,811	1,499,153	
		Discount factor	0.94	0.92	0.85	0.79	0.73	0.67	0.62	0.58	0.53	0.49	0.45	0.42	0.39	
		Present value of cash flows	768,475	35,343	38,076	197,685	435,870	561,447	604,760	783,832	765,367	734,389	665,265	623,233	581,501	
		Value of firm	11,747,371													
		Debt	0													
		Value of equity	11,747,371													
		Value per share (\$)	\$ 205.00													

Source: H.C. Wainwright & Co. estimates.

Income Statement

	FY end Dec. 31	2018A	1Q19A	2Q19A	3Q19A	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
Income statement																							
<i>(€ in thousands, except per share data)</i>																							
Product revenues	€ 288,836	€ 33,047	€ 58,738	€ 633,934	€ 354,404	€ 1,080,123	€ 138,964	€ 138,964	€ 144,790	€ 152,558	€ 575,276	€ 624,312	€ 864,162	€ 1,236,680	€ 1,511,206	€ 1,876,730	€ 2,431,945	€ 2,551,533	€ 2,640,721	€ 2,612,471	€ 2,653,226	€ 2,685,982	
Milestones; other product sales	288,836	33,047	58,738	633,934	354,404	1,080,123	138,964	138,964	138,964	138,964	555,856	624,312	480,060	575,935	475,060	457,935	494,685	494,685	494,685	423,514	444,689	466,924	
<i>fligo RA (US)</i>	0	0	0	0	0	0	0	0	0	0	0	35,271	71,036	114,453	180,084	272,017	438,274	441,342	444,432	447,543	450,676	453,830	
<i>fligo RA (EU)</i>	0	0	0	0	0	0	0	0	5,826	13,594	19,420	58,377	97,490	156,295	294,227	393,087	393,873	394,661	395,450	396,241	397,034		
<i>fligo UC (US)</i>	0	0	0	0	0	0	0	0	0	0	0	12,146	24,463	34,467	49,612	56,205	75,464	75,992	76,524	77,060	77,599	78,143	
<i>fligo UC (EU)</i>	0	0	0	0	0	0	0	0	0	0	0	18,796	33,640	47,190	54,039	60,916	67,819	67,955	68,091	68,227	68,363		
<i>fligo CD (US)</i>	0	0	0	0	0	0	0	0	0	0	0	51,333	103,385	135,342	196,571	224,340	302,885	321,165	323,413	325,677	327,956	330,252	
<i>fligo CD (EU)</i>	0	0	0	0	0	0	0	0	0	0	0	0	70,943	142,170	185,191	214,109	243,142	272,290	287,195	287,769	288,343	288,921	
<i>fligo PrA (US)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	20,150	50,728	71,516	98,766	111,890	125,192	126,068	126,951	127,840	
<i>fligo PrA (EU)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	27,572	55,254	77,510	88,760	100,055	111,394	111,617	111,841		
<i>fligo AS (US)</i>	0	0	0	0	0	0	0	0	0	0	0	0	13,433	33,819	47,678	65,844	74,593	83,461	84,046	84,634	85,226		
<i>fligo AS (EU)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	18,381	36,836	51,673	59,173	66,703	74,263	74,412	74,560		
<i>1690 PF (US)</i>	0	0	0	0	0	0	0	0	0	0	0	0	10,775	22,795	32,123	38,729	43,875	51,323	51,682	54,307	54,687		
<i>1690 PF (EU)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	7,740	15,511	22,796	26,104	30,763	34,250	35,811	35,882		
<i>1972 OA (US)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	20,714	41,718	61,514	70,859	83,983	93,968	98,740	99,431		
<i>1972 OA (EU)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,223	6,459	9,061	10,376	11,696	13,022	13,048		
Grants + Other income	29,009	7,872	8,852	10,020	10,000	36,744	10,000	10,000	10,000	10,000	40,000	40,800	41,616	42,448	43,297	44,163	45,046	45,947	46,866	47,804	48,760	49,735	
Total Revenues	317,845	40,919	67,590	643,954	364,404	1,116,867	148,964	148,964	154,790	162,558	615,276	665,112	905,778	1,279,128	1,554,504	1,920,893	2,476,992	2,597,480	2,687,588	2,660,274	2,701,986	2,735,717	
Cost of goods sold	0	0	0	0	0	0	0	0	0	0	0	62,431	86,416	123,688	161,121	187,673	243,195	255,153	264,072	261,247	265,353	268,098	
Gross profit	317,845	40,919	67,590	643,954	364,404	1,116,867	148,964	148,964	154,790	162,558	615,276	602,681	819,362	1,155,460	1,403,383	1,733,220	2,233,797	2,342,327	2,423,515	2,399,027	2,436,663	2,467,118	
Research and development	322,876	83,195	94,372	120,680	130,500	428,747	135,000	145,500	163,350	168,251	615,101	584,345	601,876	607,895	613,974	620,113	626,314	632,578	638,903	645,232	651,745	658,263	
General and administrative	35,630	9,221	13,711	28,565	30,000	81,497	32,500	34,125	35,831	37,623	140,079	161,091	169,145	177,603	186,483	195,807	205,597	215,877	226,671	238,005	249,905	262,400	
Sales and marketing expenses	4,148	1,745	3,874	4,078	4,250	13,947	4,250	4,250	4,250	4,250	17,000	17,850	18,743	19,680	20,664	21,697	22,782	23,921	25,117	26,373	27,691	29,076	
Total operating expenses	382,654	94,161	111,957	153,323	164,750	524,191	171,750	186,875	203,431	210,123	772,180	763,286	789,764	805,177	821,120	837,617	854,693	872,376	890,691	909,670	929,341	949,739	
Operating gains (losses)	(44,809)	(53,242)	(44,367)	490,631	199,654	592,676	(22,786)	(37,911)	(48,641)	(47,565)	(156,904)	(160,605)	29,598	350,283	582,263	895,603	1,379,104	1,469,952	1,532,824	1,489,358	1,507,322	1,517,380	
Financial income	18,335	6,999	(1,349)	34,755	(1,500)	38,905	1,500	1,500	1,500	1,500	6,000	6,060	6,363	6,681	7,015	7,366	7,734	8,121	8,527	8,953	9,401	9,871	
Fair value re-measurement of share subscription	0	0	0	(142,349)	0	(142,349)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Financial expenses	(2,736)	(2,345)	(1,472)	(38,631)	(1,500)	(43,948)	(1,000)	(1,000)	(1,000)	(1,000)	(4,000)	(4,410)	(4,831)	(5,260)	(5,705)	(6,166)	(6,643)	(7,136)	(7,645)	(8,170)	(8,711)	(9,268)	
Total other income (expense)	(9,399)	(4,686)	(2,821)	(146,225)	(3,000)	(147,392)	500	500	500	500	2,000	1,650	1,532	2,051	2,153	2,261	2,374	2,493	2,617	2,748	2,885	3,030	
Gain (loss) before income taxes	(29,210)	(48,598)	(47,188)	344,406	196,654	445,284	(22,286)	(37,411)	(48,141)	(47,065)	(154,904)	(158,745)	31,551	352,334	584,416	897,964	1,381,478	1,472,444	1,535,441	1,492,421	1,510,207	1,520,410	
Income tax benefit (expense)	(49)	(8)	(6)	16,828	0	16,899	0	0	0	0	0	0	0	0	(179,573)	(278,296)	(294,489)	(307,088)	(298,421)	(302,041)	(304,082)		
Net income (loss)	(29,259)	(48,656)	(47,249)	361,234	196,654	461,983	(22,286)	(37,411)	(48,141)	(47,065)	(154,904)	(158,745)	31,551	352,334	584,416	897,964	1,381,478	1,472,444	1,535,441	1,492,421	1,510,207	1,520,410	
Earnings (loss) per share - diluted	€ (0.56)	€ (0.89)	€ (0.86)	€ 5.83	€ 3.17	€ 7.90	€ (0.36)	€ (0.60)	€ (0.77)	€ (0.75)	€ (2.48)	€ (2.53)	€ 0.50	€ 5.60	€ 9.27	€ 11.38	€ 17.47	€ 18.58	€ 19.34	€ 18.75	€ 18.94	€ 19.03	
Shares outstanding - diluted	52,227	54,615	54,823	61,954	62,078	58,484	62,202	62,326	62,451	62,576	62,514	62,639	62,764	62,889	63,015	63,141	63,267	63,394	63,521	63,648	63,775	63,903	

Source: H.C. Wainwright & Co. estimates.

Cash Flow Statement

Cash flows statement (€ in thousands, except per share data)	2018A	1Q19A	2Q19A	3Q19A	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	
Cash flows from Operating activities:																							
Net gain (loss)	€ (29,259)	€ (48,656)	€ (47,249)	€ 361,234	€ 196,654	€ 461,983	€ (22,286)	€ (37,411)	€ (48,141)	€ (47,065)	€ (154,904)	€ (158,745)	€ 31,551	€ 352,334	€ 584,416	€ 718,291	€ 1,105,182	€ 1,177,955	€ 1,228,353	€ 1,193,685	€ 1,208,166	€ 1,216,328	
Adjustments for non-cash transactions, and items to disclose under op cash flow	€ 17,364	€ 4,007	€ 16,407	€ 107,523	€ 15,250	€ 143,187	€ 16,550	€ 17,050	€ 17,550	€ 18,050	€ 69,200	€ 77,410	€ 84,196	€ 91,612	€ 99,720	€ 108,585	€ 118,282	€ 128,891	€ 140,500	€ 153,205	€ 167,114	€ 182,343	
Adjustment for items to disclose under investing and financing cash flows	(668)	(3)	0	0	0	(3)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Change in working capital other than deferred income	19,922	(2,294)	(13,624)	57,044	55,000	96,126	(3,500)	(3,500)	(3,500)	(3,500)	(14,000)	1,243	7,664	18,030	(5,464)	(5,628)	(5,796)	(5,970)	(6,149)	(6,334)	(6,524)	(6,720)	
Decrease in deferred income	(153,312)	(25,979)	(27,499)	2,943,764	(25,000)	2,865,286	(100,000)	(100,000)	(100,000)	(100,000)	(400,000)	(400,000)	(400,000)	(400,000)	(175,000)	(175,000)	(150,000)	(150,000)	(150,000)	(100,000)	(75,000)	(50,000)	
Interest paid, and received, net	3,495	1,238	2,000	990	500	500	650	650	650	650	2,600	2,860	3,146	3,461	3,807	4,187	4,606	5,087	5,573	6,131	6,744	7,418	
Income taxes paid	(8)	(11)	(77)	(67)	0	(145)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Net cash provided (used) by Operating activities	(142,466)	(71,698)	(70,042)	3,470,498	242,404	3,571,162	(108,586)	(123,211)	(133,441)	(131,865)	(497,104)	(477,232)	(273,443)	65,436	507,479	650,436	1,072,274	1,155,943	1,218,277	1,246,687	1,300,500	1,349,370	
Cash flows from Investing activities:																							
Purchases of property and equipment	(10,392)	(2,103)	(2,930)	(12,289)	(1,250)	(18,572)	(5,000)	(5,000)	(5,000)	(5,000)	(20,000)	(22,000)	(24,200)	(26,620)	(29,282)	(32,210)	(35,431)	(38,974)	(42,872)	(47,159)	(51,875)	(57,062)	
Purchases of and expenditure in intangible fixed assets	(3,325)	(1,201)	(2,334)	(1,930)	(750)	(6,215)	(1,000)	(1,000)	(1,000)	(1,000)	(4,000)	(4,200)	(4,410)	(4,631)	(4,862)	(5,105)	(5,360)	(5,628)	(5,910)	(6,205)	(6,515)	(6,841)	
Proceeds from disposal of p.p. and e	1	1	1	(1)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Decrease in restricted cash	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Acquisition of available-for-sale financial assets	(4,559)	(177)	0	0	0	(177)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Proceeds from sale of available-for-sale financial assets	2,361	82	0	0	0	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Net cash provided (used) by Investing activities	(15,914)	(3,398)	(5,263)	(14,220)	(2,000)	(24,881)	(6,000)	(6,000)	(6,000)	(6,000)	(24,000)	(26,200)	(28,610)	(31,251)	(34,144)	(37,315)	(40,792)	(44,603)	(48,782)	(53,364)	(58,390)	(63,904)	
Cash flows from Financing activities:																							
Repayment of obligations under finance leases and other debts	(5)	(1,248)	(896)	(1,690)	0	(3,834)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Proceeds from capital and share premium increases, gross amount	296,188	0	0	960,087	0	960,087	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Issue costs paid related to capital and share premium increases	(15,964)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Proceeds from capital and share premium increases from exercise of warrants	7,657	3,481	4,324	6,675	0	14,450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Net cash provided (used) by Financing activities	287,876	2,233	3,428	965,072	0	970,733	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Effect of exchange rate differences on cash and cash equivalents	10,089	4,958	(3,101)	30,514	0	32,361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Net increase (decrease) in Cash/Cash Equivalents	139,585	(67,895)	(74,978)	4,451,864	240,404	4,549,395	(114,586)	(129,211)	(139,441)	(137,865)	(521,104)	(503,432)	(302,053)	34,185	473,335	613,121	1,031,483	1,111,340	1,169,495	1,193,323	1,242,109	1,285,466	
Cash & Cash Equivalents at Beginning of Period	1,151,211	1,290,796	1,222,901	1,147,923	5,599,787	1,290,796	5,840,191	5,725,605	5,596,394	5,456,953	5,840,191	5,319,088	4,815,656	4,513,603	4,547,788	5,021,123	5,634,244	6,665,726	7,777,067	8,946,562	10,139,885	11,381,994	
Cash & Cash Equivalents at End of Period	€ 1,290,796	€ 1,222,901	€ 1,147,923	€ 5,599,787	€ 5,840,191	€ 5,840,191	€ 5,725,605	€ 5,596,394	€ 5,456,953	€ 5,319,088	€ 5,319,088	€ 4,815,656	€ 4,513,603	€ 4,547,788	€ 5,021,123	€ 5,634,244	€ 6,665,726	€ 7,777,067	€ 8,946,562	€ 10,139,885	€ 11,381,994	€ 12,667,460	

Source: H.C. Wainwright & Co. estimates.

Balance Sheet

Balance sheet	2018A	1Q19A	2Q19A	3Q19A	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
(€ in thousands, except per share data)																						
Assets																						
Current assets:																						
Cash and cash equivalents	€ 1,290,796	€ 1,222,901	€ 1,147,923	€ 5,599,787	€ 5,840,191	€ 5,840,191	€ 5,725,605	€ 5,596,394	€ 5,456,953	€ 5,319,088	€ 5,319,088	€ 4,815,656	€ 4,513,603	€ 4,547,788	€ 5,021,123	€ 5,634,244	€ 6,665,728	€ 7,777,067	€ 8,946,562	€ 10,139,885	€ 11,381,994	€ 12,667,460
Trade and other receivables	18,609	15,347	42,067	32,642	30,142	30,142	31,392	32,642	33,892	35,142	35,142	41,385	47,940	54,623	77,492	105,642	142,122	180,395	220,005	259,193	298,991	339,281
Current R&D incentives receivables	11,203	11,645	11,644	9,746	7,246	7,246	8,486	9,746	10,996	12,246	12,246	18,489	25,044	31,927	54,586	82,746	119,226	157,499	197,109	236,297	276,095	316,385
Current restricted cash	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other current assets	8,243	9,351	6,970	8,837	8,837	8,837	9,837	10,837	11,837	12,837	12,837	17,837	22,987	28,292	33,755	39,383	45,179	51,149	57,299	63,633	70,156	76,878
Total current assets	1,328,851	1,259,244	1,208,604	5,651,012	5,886,416	5,886,416	5,775,330	5,649,619	5,513,678	5,379,313	5,379,313	4,893,367	4,609,574	4,662,830	5,186,965	5,862,015	6,972,253	8,166,109	9,420,976	10,699,006	12,027,236	13,400,001
Intangible assets	3,632	6,497	7,191	23,492	24,242	24,242	24,692	25,142	25,592	26,042	26,042	27,932	29,917	32,000	34,188	36,485	38,898	41,430	44,090	46,882	49,814	52,893
Property, plant and equipment, net	23,137	49,542	51,180	61,883	59,883	59,883	61,383	62,883	64,383	65,883	65,883	71,083	77,643	85,741	95,575	107,365	121,354	137,815	157,408	179,385	205,198	234,895
Deferred tax assets	2,514	2,511	2,516	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406	19,406
Non-current R&D incentives receivables	73,443	76,029	82,644	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965	89,965
Other non-current assets	7,319	6,377	5,713	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994	5,994
Total assets	1,439,496	1,400,200	1,357,848	5,851,752	6,085,906	6,085,906	5,976,770	5,853,009	5,719,018	5,586,603	5,586,603	5,107,747	4,832,499	4,895,937	5,432,093	6,121,230	7,247,870	8,460,720	9,737,478	11,040,639	12,397,613	13,803,154
Liabilities and stockholders' equity																						
Current liabilities:																						
Finance lease liabilities	0	4,580	5,141	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251	5,251
Trade and other payables	68,928	69,880	86,216	156,254	206,254	206,254	206,254	206,254	206,254	206,254	206,254	224,983	250,908	288,009	333,345	389,647	462,605	539,151	618,373	696,747	776,344	856,923
Current tax payable	1,175	1,168	1,031	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032	1,032
Current deferred income	149,901	123,822	95,325	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764	468,764
Total current liabilities	219,904	199,450	188,713	631,301	681,301	681,301	681,301	681,301	681,301	681,301	681,301	700,030	725,955	763,056	808,392	864,694	937,652	1,014,198	1,093,420	1,171,794	1,251,391	1,331,970
Pension liabilities	3,764	3,851	3,939	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026	4,026
Long-term leasing debts; and Other non-current liabilities	1,579	21,144	21,829	22,131	22,631	22,631	23,281	23,931	24,581	25,231	25,231	28,091	31,237	34,698	38,504	42,692	47,298	52,364	57,938	64,068	70,812	78,230
Non-current deferred income	0	0	0	2,659,013	2,634,013	2,634,013	2,534,013	2,434,013	2,334,013	2,234,013	2,234,013	1,834,013	1,434,013	1,034,013	859,013	684,013	534,013	384,013	234,013	134,013	59,013	9,013
Total liabilities	225,247	224,445	214,481	3,316,471	3,341,971	3,341,971	3,242,621	3,143,271	3,043,921	2,944,571	2,944,571	2,566,160	2,195,231	1,835,792	1,709,935	1,595,424	1,522,989	1,454,601	1,389,396	1,379,901	1,385,242	1,423,239
Total stockholders' equity																						
Share capital	236,540	237,348	238,475	272,605	272,606	272,606	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605	272,605
Share premium account	1,277,780	1,280,452	1,283,650	2,266,595	2,280,586	2,280,586	2,293,085	2,306,085	2,319,585	2,333,585	2,333,585	2,391,885	2,450,015	2,526,558	2,604,155	2,689,512	2,783,405	2,886,887	3,000,297	3,125,269	3,262,737	3,413,952
Other reserves	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)	(735)
Translation differences	(1,557)	(1,290)	(1,505)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)	(1,267)
Accumulated losses	(297,779)	(340,920)	(376,518)	(3,907)	192,747	192,747	170,461	133,050	84,909	37,844	37,844	(120,902)	(89,350)	282,983	847,400	1,565,691	2,670,873	5,077,181	8,486,828	11,012,372	13,479,032	15,895,359
Total stockholders' equity	1,214,249	1,175,755	1,143,367	2,535,281	2,743,935	2,743,935	2,734,149	2,709,738	2,675,097	2,642,032	2,642,032	2,541,586	2,637,268	3,060,144	3,722,158	4,525,806	5,724,881	7,006,118	8,348,082	9,666,738	11,012,372	12,379,914
Total liabilities and stockholders' equity	€ 1,439,496	€ 1,400,200	€ 1,357,848	€ 5,851,752	€ 6,085,906	€ 6,085,906	€ 5,976,770	€ 5,853,009	€ 5,719,018	€ 5,586,603	€ 5,586,603	€ 5,107,747	€ 4,832,499	€ 4,895,937	€ 5,432,093	€ 6,121,230	€ 7,247,870	€ 8,460,720	€ 9,737,478	€ 11,040,639	€ 12,397,613	€ 13,803,154

Source: H.C. Wainwright & Co. estimates.

Cash Outlook, Ratio Analysis, and Enterprise Value

CASH QUICK LOOK :		2018A	1Q19A	2Q19A	3Q19A	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
Cash burn in period (cash from operations)	€	362,654	€ 94,161	€ 111,957	€ 153,323	€ 164,750	€ 524,191	€ 171,750	€ 186,875	€ 203,431	€ 210,123	€ 772,180	€ 763,286	€ 789,764	€ 805,177	€ 821,120	€ 837,617	€ 854,693	€ 872,376	€ 890,691	€ 908,670	€ 929,341	€ 949,739
Total cash and cash equivalents	€	1,290,796	€ 1,222,901	€ 1,147,923	€ 5,599,787	€ 5,840,191	€ 5,840,191	€ 5,725,605	€ 5,596,394	€ 5,456,953	€ 5,319,088	€ 5,319,088	€ 4,815,656	€ 4,513,603	€ 4,547,788	€ 5,021,123	€ 5,634,244	€ 6,665,726	€ 7,777,067	€ 8,946,562	€ 10,139,885	€ 11,381,994	€ 12,667,460
Periods of cash remaining		3.5 yrs	13.0 qrs	10.5 qrs	36.5 qrs	35.5 qrs	11.0 yrs	33.5 qrs	30.0 qrs	27.0 qrs	25.5 qrs	7.0 yrs	6.5 yrs	5.5 yrs	5.0 yrs	6.0 yrs	6.5 yrs	8.0 yrs	9.0 yrs	10.0 yrs	11.0 yrs	12.0 yrs	13.5 yrs
Ratio analysis		2018A	1Q19A	2Q19A	3Q19A	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E
EBIT	(44,809)	(53,242)	(44,367)	490,631	199,654	592,676	(22,786)	(37,911)	(48,641)	(47,565)	(156,904)	(160,605)	29,598	350,283	582,263	895,603	1,379,104	1,469,952	1,532,824	1,489,358	1,507,322	1,517,380	
EBITDA	(40,618)	(50,484)	(41,472)	493,815	202,904	604,763	(19,286)	(34,411)	(45,141)	(44,065)	(142,904)	(143,805)	47,238	368,805	601,711	916,024	1,400,545	1,492,465	1,556,463	1,514,179	1,533,384	1,544,745	
EBITDA % of Sales	-13%	-123%	-61%	77%	56%	54%	-13%	-23%	-29%	-27%	-23%	-22%	5%	29%	39%	48%	57%	57%	56%	57%	57%	56%	
EV/EBITDA multiple	(72x)	(88x)	(122x)	6x	16x	4x	(17x)	(102x)	(81x)	(86x)	(27x)	(30x)	98x	13x	7x	4x	2x	1x	0x	(1x)	(1x)	(2x)	
Gross Profit Margin	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	91%	90%	90%	90%	90%	90%	90%	90%	90%	90%	
OpMargin	-14%	-130%	-66%	76%	55%	53%	-15%	-25%	-31%	-29%	-26%	-24%	3%	27%	37%	47%	56%	57%	57%	56%	56%	55%	
Net Operating Profit After Tax (NOPAT)	(44,858)	(53,310)	(44,428)	507,459	199,654	609,375	(22,786)	(37,911)	(48,641)	(47,565)	(156,904)	(160,605)	29,598	350,283	582,263	716,030	1,102,808	1,175,463	1,225,736	1,190,937	1,205,280	1,213,298	
Free Cash Flow (FCF)	(152,858)	(73,801)	(72,972)	3,458,209	241,154	3,552,590	(113,586)	(128,211)	(138,441)	(136,865)	(517,104)	(499,232)	(297,643)	38,816	478,197	618,226	1,036,843	1,116,969	1,175,405	1,199,528	1,248,625	1,292,307	
Book per share	€ 23.25	€ 21.53	€ 20.86	€ 40.92	€ 44.20	€ 46.92	€ 43.96	€ 43.48	€ 42.84	€ 42.22	€ 42.26	€ 40.58	€ 42.02	€ 48.66	€ 59.07	€ 71.68	€ 90.49	€ 110.52	€ 131.42	€ 151.86	€ 172.68	€ 193.73	
Net cash per share	€ 24.72	€ 22.39	€ 20.94	€ 90.39	€ 94.00	€ 99.86	€ 92.05	€ 89.79	€ 87.38	€ 85.00	€ 85.09	€ 76.88	€ 71.91	€ 72.31	€ 79.68	€ 89.23	€ 105.36	€ 122.68	€ 140.84	€ 159.31	€ 178.47	€ 198.23	
Return on assets (ROA)	-2%	-3%	-3%	6%	3%	6%	0%	-1%	-1%	-1%	-3%	-3%	1%	7%	11%	12%	15%	14%	13%	11%	11%	9%	
Return on equity (ROE)	-2%	-4%	-4%	14%	7%	17%	-1%	-1%	-2%	-2%	-6%	-6%	1%	12%	16%	19%	17%	15%	12%	11%	10%	10%	
Current ratio	6.04	6.31	6.40	8.95	8.64	8.64	8.48	8.29	8.09	7.90	7.90	6.99	6.35	6.11	6.42	6.78	7.44	8.05	8.62	9.13	9.61	10.06	
Enterprise Value (MC + Total Debt - Cash)		2,916,600	4,451,576	5,071,758	2,920,723	3,216,951	2,692,639	3,349,651	3,497,013	3,654,641	3,810,729	3,801,636	4,323,309	4,643,640	4,627,769	4,172,786	3,578,053	2,564,994	1,472,116	321,119	(853,669)	(2,077,206)	(3,344,062)
Market Cap (MC)		4,207,396	5,674,477	6,219,681	8,520,510	9,057,142	8,532,830	9,075,256	9,093,407	9,111,594	9,129,817	9,120,723	9,138,965	9,157,243	9,175,557	9,193,908	9,212,296	9,230,721	9,249,182	9,267,681	9,286,216	9,304,788	9,323,398
Current Share price	€	145.90																					

Source: H.C. Wainwright & Co. estimates.

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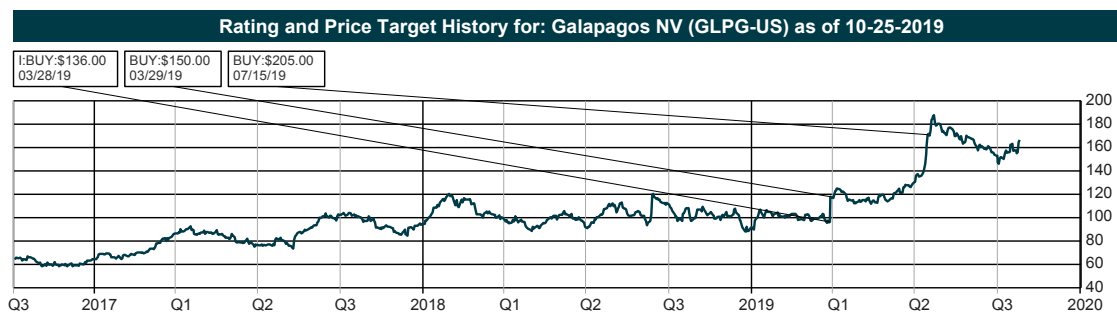
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Market Outperform (Buy): The common stock of the company is expected to outperform a passive index comprised of all the common stock of companies within the same sector.

Market Perform (Neutral): The common stock of the company is expected to mimic the performance of a passive index comprised of all the common stock of companies within the same sector.

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Distribution of Ratings Table as of October 25, 2019				
Ratings	Count	Percent	IB Service/Past 12 Months	
			Count	Percent
Buy	374	92.80%	125	33.42%
Neutral	28	6.95%	3	10.71%
Sell	0	0.00%	0	0.00%
Under Review	1	0.25%	1	100.00%
Total	403	100%	129	32.01%

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