

Yadea Group Holdings Ltd

Riding into the future - initiate with Neutral

Initiation
Neutral



1585.HK, 1585 HK

Price: HK\$1.30

Price Target: HK\$1.50

We initiate coverage on Yadea with a Neutral rating and Dec-16 PT of HK\$1.5. Yadea is the largest electric-scooter and second-largest electric-bicycle manufacturer in China under its own brand (*Yadea*), with 10.5% market share by revenue in 2015 (source Frost & Sullivan).

• **Positive investment drivers:**

- 1) **Steady industry growth and market share gains:** China's electric two-wheeler market is expected to grow at mid-single digits p.a. over the next couple of years. Yadea expanded its market share from ~8% in 2013 to ~10% in 2015, and we expect further market share gains.
- 2) **Restrictions on motorbikes to benefit e-scooters/bikes:** To curb air pollution, many cities in China (currently ~200) have banned the use of motorcycles. This has directly benefited electric two-wheelers, which have gained share at the expense of traditional motorcycles.
- 3) **Solid balance sheet and financial position:** Yadea has a significant negative working capital business model as it receives payments from customers (i.e. dealers) promptly but pays suppliers several months later. The result is a net cash position (40% of assets is cash) and positive free cash flow, which creates potential dividend upside.
- 4) **Penetration into high end e-motorcycles:** Yadea has entered into a strategic co-operation agreement with Lightning Motors, a US-based high-end electric motorcycle producer, and plans to launch an advanced lithium battery powered e-scooter in China in the future.

- **Key investment risks:** 1) **Price competition:** Intense competition caused Yadea's ASP to slip by ~4% in 2015 as a result of higher rebates to dealers to retain market share. 2) **Regulatory risk** of prohibiting the use of electric two-wheelers. 3) **Consumption upgrade** to four-wheelers.

- **Valuation, risks:** Our Dec-16 PT of HK\$1.5 is based on 10x PER. Risks: worse than expected sales volume or pricing.

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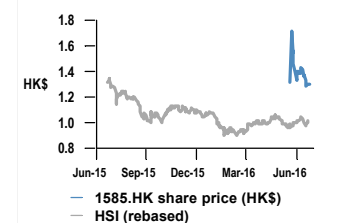
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Price Performance



Yadea Group Holdings Ltd (Reuters: 1585.HK, Bloomberg: 1585 HK)

Rmb in mn, year-end Dec	FY14A	FY15A	FY16E	FY17E	FY18E
Revenue (Rmb mn)	5,824	6,429	7,478	8,693	9,440
EBIT (Rmb mn)	306	491	511	763	845
Net Profit (Rmb mn)	223	375	390	583	646
EPS (Rmb)	-	0.13	0.13	0.19	0.22
DPS (Rmb)	0.00	0.00	0.00	0.00	0.00
Revenue growth (%)	15.1%	10.4%	16.3%	16.2%	8.6%
EPS growth (%)	-	-	3.9%	49.4%	10.8%
ROE	39.1%	57.8%	27.1%	24.4%	21.5%
P/E (x)	-	8.8	8.5	5.7	5.1
P/BV (x)	-	4.2	1.6	1.2	1.0
Dividend Yield	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Company Data

52-week Range (HK\$)	1.85-1.25
Shares O/S (mn)	3,000
Market Cap (Rmb mn)	3,313
Market Cap (\$ mn)	503
Price (HK\$)	1.30
Date Of Price	22 Jun 16
Free Float(%)	27.9%
3M - Avg daily vol (mn)	-
3M - Avg daily val (\$ mn)	-
HSI	2,0668.44
Exchange Rate	7.76
Price Target End Date	31-Dec-16

See page 24 for analyst certification and important disclosures, including non-US analyst disclosures.

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Key catalysts for the stock price:	Upside risks to our view:	Downside risks to our view:
<ul style="list-style-type: none"> Launch of high-end Lib models More cities putting restrictions on gasoline-powered two wheelers 	Better than expected sales volume or pricing	Worse than expected sales volume or pricing

Key financial metrics	FY15A	FY16E	FY17E	FY18E
Revenues (LC)	6,429	7,478	8,693	9,440
Revenue growth (%)	10%	16%	16%	9%
EBITDA (LC)	557	585	846	934
EBITDA margin (%)	9%	8%	10%	10%
Tax rate (%)	24%	24%	24%	24%
Net profit (LC)	375	390	583	646
EPS (LC)	0.13	0.13	0.19	0.22
EPS growth (%)		4%	49%	11%
DPS (LC)	-	-	-	-
BVPS (LC)	0.26	0.70	0.90	1.11
Operating cash flow	794	400	764	967
Free cash flow to firm	633	186	580	832
Interest cover (X)	23,227	1,501	2,170	2,397
Net margin (%)	5.8%	5.2%	6.7%	6.8%
Sales/assets (X)	1.9	1.6	1.4	1.3
Net debt/equity (%)	-99%	-90%	-92%	-99%
ROE (%)	58%	27%	24%	21%

Key model assumptions	FY15A	FY16E	FY17E	FY18E
E-scooter sales growth	9%	15%	15%	8%
E-bike sales growth	12%	12%	10%	5%

Source: Bloomberg, Company data and J.P. Morgan estimates.

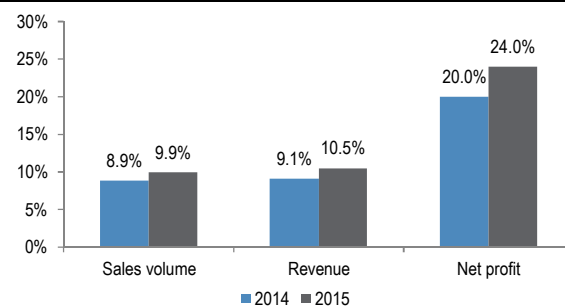
Sensitivity analysis	Impact on EBIT		Impact on EPS	
	FY16E	FY17E	FY16E	FY17E
Sensitivity to				
1% decrease in revenue	-0.8%	-0.8%	-0.8%	-0.8%
1ppt drop in GPM	-14.6%	-11.4%	-14.7%	-11.4%

Source: J.P. Morgan estimates.

Valuation and price target basis

Our PT is based on 10x 2016 PER, considering trading ranges of comparable peers as well as Yadea's relatively limited history vs. most listed companies. This would place Yadea at a meaningful premium over passenger vehicle makers but within the range of discretionary stocks although at a seeming discount to two-wheelers because they are either listed in the A-share market (generally at premiums over H-share in the first place) or they pay much higher dividends (near 70% payout) to investors (i.e. Giant and Merida).

Yadea's market share in China electric two-wheeler market



Source: Company data and J.P. Morgan estimates.

JPMe vs. consensus

Net profit (Rmb mn)	FY16E	FY17E
JPMs	390	583
Consensus	n/a	n/a

Source: Bloomberg, J.P. Morgan estimates.

Valuation summary (Please refer to Valuation references section for more comps and analysis)

Company	Code	Rec	Price (LC)		Mkt cap (US\$ M)	P/E (x)		P/B (x)		ROE		Div. yield	
			June-22	June-22		16E	17E	16E	17E	16E	17E	16E	17E
Yadea	1585 HK	N	1.3	503	8.5	5.7	1.6	1.2	27%	24%	0.0%	0.0%	
Brilliance	1114 HK	OW	7.9	5,136	9.6	8.0	1.5	1.3	16%	17%	1.3%	1.4%	
ZhengTong Auto	1728 HK	N	2.9	835	7.8	6.9	0.6	0.6	8%	9%	3.4%	3.9%	
DongFeng Motor	489 HK	N	8.4	9,319	4.9	4.7	0.6	0.6	14%	13%	2.8%	2.9%	
Great Wall Motor-H	2333 HK	N	6.5	10,577	6.0	6.2	1.1	1.0	20%	17%	7.9%	5.0%	
Geely	175 HK	OW	4.2	4,777	9.5	7.6	1.4	1.2	16%	17%	0.9%	1.3%	
GAC-H	2238 HK	OW	9.5	16,730	7.5	6.7	1.2	1.0	17%	17%	2.6%	4.3%	
Mint Group	425 HK	OW	24.0	3,465	13.2	10.8	2.2	1.8	18%	18%	2.3%	3.0%	
Baoxin Auto	1293 HK	N	4.2	1,398	19.8	18.1	1.7	1.6	9%	9%	0.0%	0.5%	
Zhongsheng	881 HK	UW	4.2	1,162	13.2	12.4	0.7	0.6	5%	5%	1.2%	1.5%	
Sinotruk	3808 HK	N	3.4	1,224	22.6	20.3	0.4	0.4	2%	2%	0.9%	1.4%	
Nexteer	1316 HK	OW	7.5	2,412	10.1	8.5	2.4	1.8	26%	24%	1.3%	1.7%	
SAIC Motor	600104 CH	N	20.4	34,160	7.2	6.8	1.2	1.1	17%	17%	6.7%	7.0%	
Fuyao-H	3606 HK	OW	18.0	5,468	12.6	11.2	2.2	2.0	18%	19%	4.9%	5.4%	
BAIC Motor	1958 HK	UW	5.5	5,346	10.6	9.1	0.9	0.9	9%	10%	3.2%	3.2%	
Yutong Bus	600066 CH	OW	20.0	6,728	11.2	10.5	3.3	2.9	30%	29%	7.5%	5.3%	
Huayu Automotive	600741 CH	N	15.4	7,368	9.2	8.6	1.6	1.4	18%	18%	5.3%	4.8%	
Weichai Power (1)	2338 HK	OW	8.3	4,647	14.1	11.4	0.9	0.8	6%	7%	2.8%	3.5%	
BYD	1211 HK	OW	46.4	19,917	22.2	17.5	2.6	2.2	12%	14%	0.0%	0.0%	
Average					9.9	9.1	1.4	1.3	15%	15%	3.1%	3.1%	
Average exclude BYD					8.9	8.2	1.3	1.2	15%	15%	3.2%	3.3%	

Source: J.P. Morgan estimates, Bloomberg. Notes: (1) Weichai Power is covered by Karen Li. (2) Average P/E is calculated as aggregated sector market cap divided by FY16/17E aggregated sector earnings; averages of P/B, ROE and dividend yield are simple average of the companies listed above.

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Investment positives

Positive 1: Superior profitability and healthy balance sheet

Superior profitability

Yadea's profitability measured by gross margin has improved meaningfully from 13% in 2013 to 17% in 2014 and 19% in 2015 vs. average of China's listed two-wheelers at 13-14% in 2014-15. While we acknowledge the fact that it may not be an apples-to-apples comparison between Yadea and other listed two-wheelers that derive their revenue not only from electric two-wheelers but also (and possibly mainly) traditional bicycles or fuel powered motorcycles, these are perhaps the best comparable peers as there are no listed pure electric two-wheeler companies in China. In the pure electric two-wheeler industry, we think Yadea's superior profitability can be gauged through its 24% market share by net profit (FY15) vs. only ~10% share in sales volume or revenue, according to Frost & Sullivan.

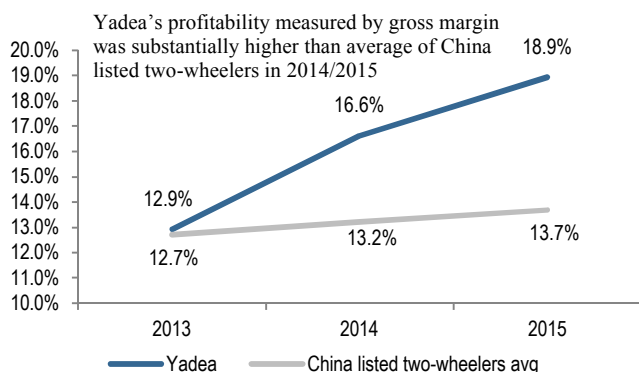
Table 1: Margin comparison - Yadea vs. China listed two-wheelers

Rmb mn, %

Company	Local name	Ticker	Revenue	Net profit	Gross margin		Net margin	
			2015	2015	2014	2015	2014	2015
Yadea	雅迪	1585 HK	6,429	375	17%	19%	4%	6%
Loncin Motor C-A	隆鑫通用	603766 CH	7,009	770	19%	20%	9%	11%
Chongqing Zong-A	宗申动力	001696 CH	4,660	381	20%	21%	8%	8%
Zhejiang Qian -A	钱江摩托	000913 CH	2,090	(130)	14%	17%	-8%	-6%
Chongqing Jian-B	建摩	200054 CH	1,326	241	11%	6%	-8%	18%
China Jialing-A	中国嘉陵	600877 CH	1,040	(160)	10%	9%	1%	-15%
Zhonglu Co Ltd-A	中路股份	600818 CH	654	52	12%	17%	1%	8%
Jinshan Develo-A	金山开发	600679 CH	459	4	14%	14%	6%	1%
Linhai Co Ltd-A	林海股份	600099 CH	356	2	13%	13%	1%	1%
Shenz China Bi-A	深中华	000017 CH	171	(0)	6%	7%	2%	0%
Average of China listed two-wheelers					13%	14%	1%	3%

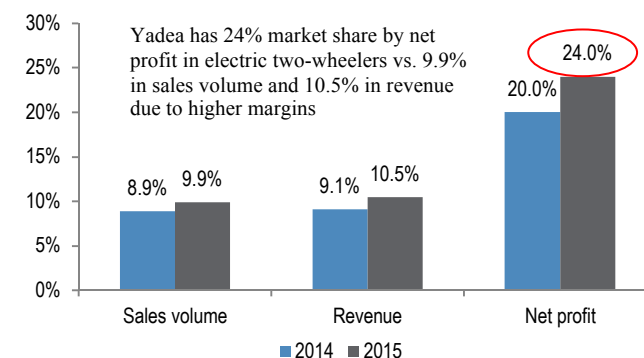
Source: Company, Bloomberg. Note: averages are simple average and excludes outliers

Figure 1: Gross margin comparison



Source: Company, J.P. Morgan estimates, Bloomberg. Note: averages are simple average and excludes outliers

Figure 2: Yadea's market share by volume, revenue and profit in China's electric two-wheeler market (2014-2015)



Source: Company, Frost & Sullivan

Cash-rich balance sheet and negative working capital

Besides superior profitability, Yadea also has a very healthy balance sheet measured by ROE, net cash/equity, working capital or cash conversion cycle. For instance, Yadea's ROE was 39% in 2014 and 58% in 2015, well above most peers highlighted in the following table. Yadea has been in a net cash position consistently since 2013 and its net cash to equity stood at -225% in 2014 or -199% in 2015 vs. industry average of -12%, based on our analysis. Furthermore, Yadea's cash conversion cycle is exceptionally strong at -116 days in 2014 and -156 days in 2015 vs. other peers at best -30 days, as the company receives payment from customers (i.e. dealers) rather quickly and then pays suppliers several months later.

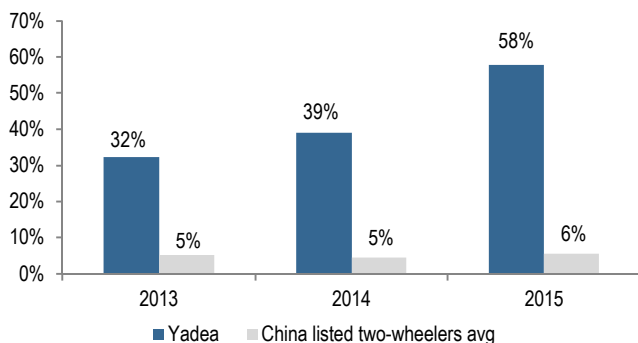
Yadea's negative working capital and free cash flow position allows potential dividend upside, in our view (which we discuss further in "Financial Analysis" section of this report). At the moment, we have not factored any dividend in our forecasts.

Table 2: Key balance sheet metric comparison - Yadea vs. China listed two-wheelers

Company	Local name	Ticker	ROE		Net debt (cash) to equity		Cash conversion cycle (days)	
			2014	2015	2014	2015	2014	2015
Yadea	雅迪	1585 HK	39%	58%	-225%	-199%	-116	-156
Loncin Motor C-A	隆鑫通用	603766 CH	16%	17%	-25%	-19%	20	22
Chongqing Zong-A	宗申动力	001696 CH	12%	11%	-15%	14%	105	92
Zhejiang Qian -A	钱江摩托	000913 CH	-9%	-6%	9%	5%	235	221
Chongqing Jian-B	建摩	200054 CH	-159%	176%	7832%	342%	6	31
China Jialing-A	中国嘉陵	600877 CH	6%	-160%	466%	n/a	-9	-30
Zhonglu Co Ltd-A	中路股份	600818 CH	2%	12%	10%	-1%	36	48
Jinshan Develo-A	金山开发	600679 CH	6%	0%	-12%	-12%	18	37
Linhai Co Ltd-A	林海股份	600099 CH	1%	1%	-42%	-41%	74	88
Shenz China Bi-A	深中华	000017 CH	52%	-1%	-224%	-200%	5	10
Average of China listed two-wheelers			5%	6%	-13%	-9%	55	58

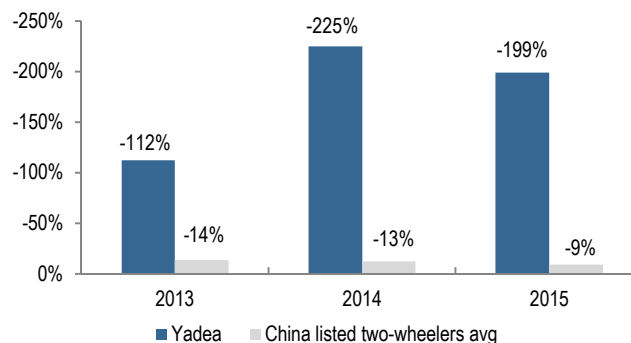
Source: Company, Bloomberg. Note: 1) Averages are simple average and excludes outliers. 2) Net debt is calculated as interest-bearing borrowings - cash and cash equivalent and pledged bank deposits.

Figure 3: ROE comparison



Source: Company, J.P. Morgan estimates, Bloomberg. Note: averages are simple average and excludes outliers

Figure 4: Net debt (cash) to equity comparison



Source: Company, J.P. Morgan estimates, Bloomberg. Note: 1) Averages are simple average and excludes outliers. 2) Net debt is calculated as interest-bearing borrowings - cash and cash equivalent and pledged bank deposits

Positive 2: Resilient industry growth and market share gains

Resilient industry growth

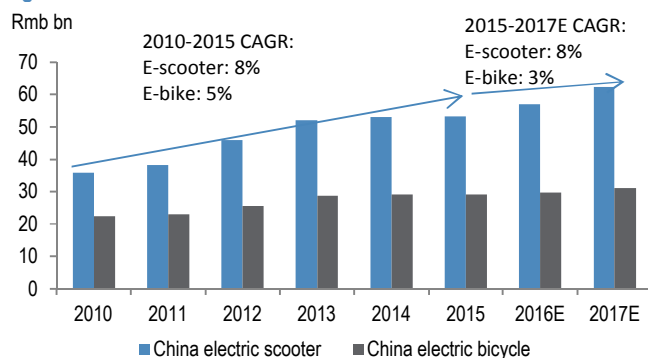
Sales of China's electric two-wheeler industry grew at a 5%/7% CAGR from 2010-2015 by volume/revenue and are expected to grow at 5%/7% CAGR from 2015-2017E, according to Frost & Sullivan. We believe mid-single digit growth is reasonable driven by:

1. **Income growth:** China's disposable income per capita grew at 10.3% CAGR in 2010-2015 (for urban population) and our economists estimate such a trend will continue at 7-9% in the next few years.
2. **E-scooters replacing traditional motorcycles:** At the moment, nearly 200 cities in China have prohibited the use of motorcycles due to pollution concerns. We believe this will allow e-scooters to gain share at the expense of traditional gasoline-powered motorcycles.
3. **Car (4-wheeler) purchase restriction another window of opportunity:** Seven cities in China have adopted car purchase restrictions on four-wheelers, such as Beijing, Shanghai, Shenzhen and others, through limiting the number of car plates each year. Such restriction opens another window of opportunity for two-wheelers including electric bikes/scooters.
4. **ASP increase:** According to Frost & Sullivan, average selling price of e-scooter rose from Rmb2,544 in 2010 to Rmb2,708 in 2015 while ASP of e-bikes grew from Rmb1,903 to Rmb2,023 in the same period. Frost & Sullivan estimates electric two-wheeler industry ASP will further increase by 3% CAGR into 2017E. We believe further blended ASP increase could be driven by product mix change towards high-end models (e.g. LiB models replacing lead acid models).

Market share gains

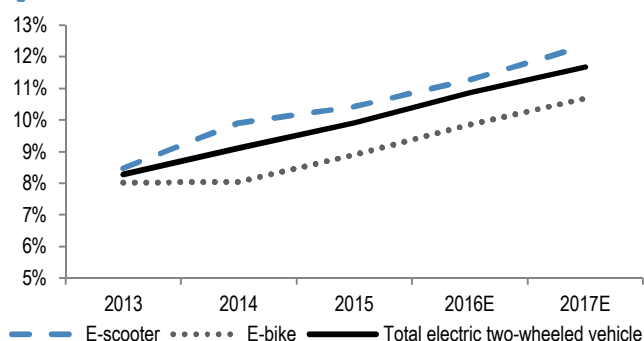
China's electric two-wheeler industry consolidated from over 2,500 players in 2010 to around 250 manufacturers above the designated scale in 2015, according to Frost & Sullivan. Yadea has taken the opportunity to grab market share, from ~8% in 2013 to ~10% in 2015 in volume, based on our analysis. In the near future, we believe industry consolidation will continue and Yadea should maintain its leadership position and further increase share.

Figure 5: China retail sales value of e-scooter and e-bike



Source: Frost & Sullivan

Figure 6: Yadea's market share trend



Source: Company, Frost & Sullivan, J.P. Morgan estimates. Note: Yadea's market share is calculated as sales volume of the year / total industry sales. Yadea's sales volume includes exports which is estimated at <5% of Yadea's total sales volume.

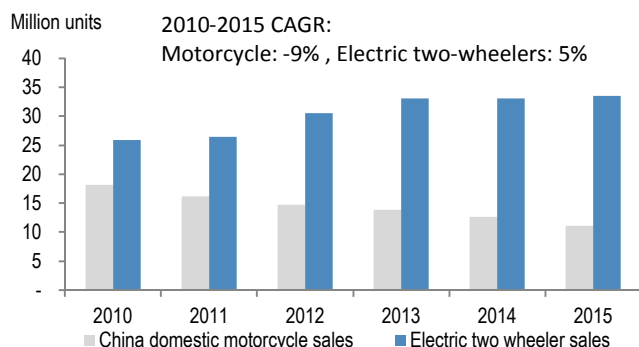
Positive 3: Restriction on motorcycle an opportunity for e-scooter

To curb air pollution, nearly 200 cities in China had prohibited or restricted the use of motorcycle as of 2013, according to China Association of Automobile Manufacturers. All tier-one cities including Beijing, Shanghai, Guangzhou and Shenzhen are in the list, as well as major tier-two cities such as Tianjin, Nanjing, Hangzhou, Chengdu and others. Restrictions vary by city but can be categorized as:

1. Prohibiting the use of motorcycles for entire city
2. Restricting the use of motorcycles in certain districts or time frame
3. Limiting the number of motorcycle plate issuance per year

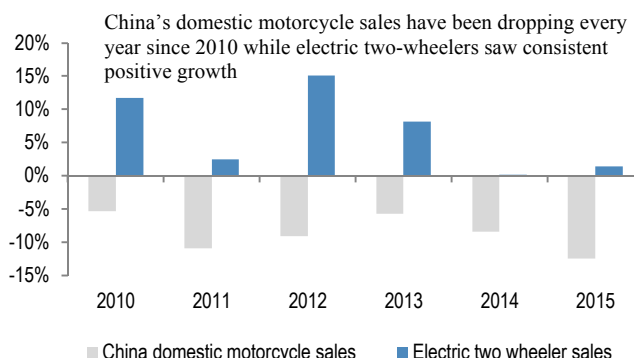
Besides a few cities that also prohibit the use of e-scooter/e-bikes (i.e. Shenzhen), restrictions on motorcycles open an opportunity for electric two-wheelers. As a result of regulatory restrictions on the use of motorcycles, domestic motorcycle sales (mainly gasoline powered motorcycle) declined at a CAGR of 9% between 2010-2015 whilst electric two-wheelers (i.e. electric bike, electric moped and electric motorcycle) grew by 5%.

Figure 7: Domestic sales of motorcycle vs. electric two-wheeler



Source: Frost & Sullivan, CAAM. Note: Motorcycle sales here include traditional motorcycle and electric motorcycle and include a minor portion of three-wheeled motorcycle. Electric two wheelers include electric bikes, electric mopeds and electric motorcycle.

Figure 8: Sales growth (yoy%) of motorcycle vs. electric two-wheeler



Source: Frost & Sullivan, CAAM. Note: Motorcycle sales here include traditional motorcycle and electric motorcycle and include a minor portion of three-wheeled motorcycle. Electric two wheelers include electric bikes, electric mopeds and electric motorcycle.

Positive 4: Penetration into high-end LiB e-scooter

Lightning Motors is a US based company established in 2006 and specializes in R&D of advanced electric two-wheeler vehicles. In June 2015, Yadea entered into a strategic cooperation agreement with Lightning Motors to jointly research, develop and produce products as well as sharing international customer base. Yadea will be Lightning's exclusive worldwide electric two-wheeler vehicle partner and can exclusively use its relevant intellectual property rights for electric two-wheeler vehicles. In Dec-2015, Yadea also acquired 11.1% of Lightning Motors with total consideration of USD1.3mn.

Yadea plans to launch high-end lithium battery powered electric scooters under the "Lightning" brand, which will be sold exclusively through Yadea's online platform. We expect the newly developed LiB e-scooter to be priced at Rmb10k-20k vs. Yadea's current e-scooters MSRP at Rmb2,165-3,920 (excluding batteries and

chargers). We believe currently there's no such high-end e-scooter models in the price range of >Rmb10k in the market and hence the new product launch offers potential business opportunity for the company.

Figure 9: Example of Lightning's existing product: LS-218 (retail price starts at US\$38,888)

Specs of LS-218 (Lightning's existing model):

- **Retail price starts at US\$38,888**
- **Battery options:**
 - 380V 12 kwh battery pack (Range of 100-120 miles per charge)
 - 380V 15 kwh battery pack (Range of 120-150 miles per charge)
 - 380V 20 kwh battery pack (Range of 160-180 miles per charge)
- **Horsepower: 200HP**

Yadea plans to jointly develop new high-end LiB model with Lightning; expected MSRP at Rmb10-20k.



Source: Company

Key investment risks

Risk 1: Pricing competition

Whilst China's electric two-wheeler industry has consolidated from over 2,500 players in 2010 to around 250 manufacturers above designated scale in 2015, the industry remains fragmented as top 5 players accounted for only ~33% of total revenue in 2015. In such a highly competitive and fragmented industry, a sudden slowdown in demand could lead to aggressive price competition.

Indeed, when industry sales volume decelerated to 0.2% growth in 2014 (from 8% in 2013 or 15% in 2012), Yadea's e-scooter and e-bike ASP dropped as a result of higher discounts offered to dealers as part of sales promotions, which lasted from 2H14 to 3Q15. Blended ASP in 2015 further declined by 4% vs. 2014.

Our sensitivity analysis indicates that a 1% drop in e-scooter and e-bike blended ASP could lead to a ~4% drop in 2016E gross profit, or ~10% change in net profit, assuming all other assumptions are held constant (i.e. no change in sales volume and same opex assumptions).

Table 3: Sensitivity on gross and net profit – assuming Yadea's e-scooter and e-bike blended ASP declines by 1%

Rmb mn, %	2013	2014	2015	2016E	2017E
Gross profit - actual/ base case	655	968	1,217	1,422	1,738
Gross profit - ASP decline by 1%	616	922	1,168	1,364	1,671
<i>Difference</i>	<i>-6%</i>	<i>-5%</i>	<i>-4%</i>	<i>-4%</i>	<i>-4%</i>
Net profit - actual/ base case	174	223	375	390	583
Net profit - ASP decline by 1%	147	194	342	350	538
<i>Difference</i>	<i>-16%</i>	<i>-13%</i>	<i>-9%</i>	<i>-10%</i>	<i>-8%</i>

Source: Company, J.P. Morgan estimates. Note: assuming all other assumptions held constant.

Risk 2: Consumption upgrade might be a threat to two-wheeler demand

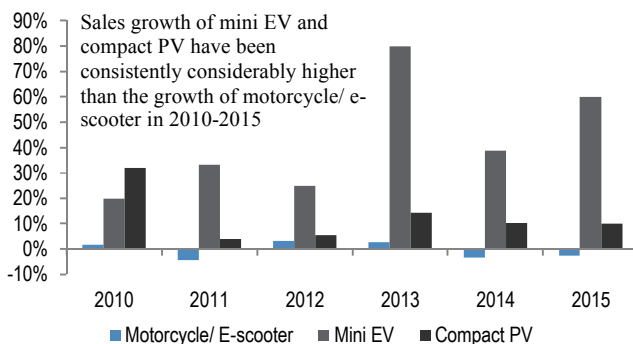
Private transportation on the road ranges from bicycle, scooter/ motorcycle, three-wheeler to automobile (sedan, SUV, van, pickup truck and so on). When it comes to choosing between the different means of transportation, affordability plays a crucial role besides other factors such as convenience, comfort, regulation and personal preference. Indeed, one can argue that two-wheelers can sometimes be more convenient and easier to travel within cities especially during traffic or when it becomes difficult to locate parking spaces; four-wheelers also have irreplaceable advantages such as higher speed, more comfort, longer travel distance and greater load/passenger capacity, etc.

While we acknowledge that the starting price of entry-level four-wheelers (mini/low speed EVs/ compact cars) is ~10-15x of two-wheelers (e-scooters/ motorcycles), two factors could continue to drive consumption upgrade:

1. China's passenger vehicle (four-wheeler) price has been declining at 4% CAGR in the past decade.
2. In the same period, average disposable income per capita rose at 11% CAGR.

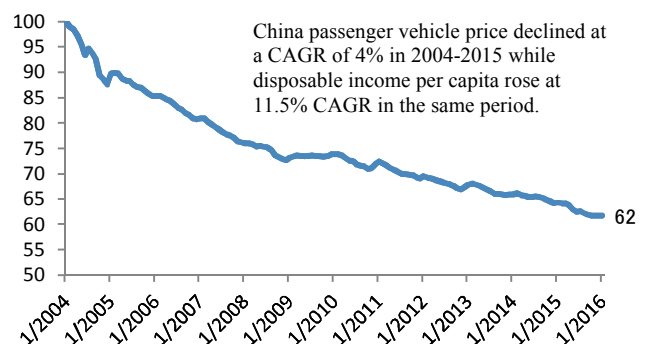
We believe both trends could carry on with average car price declining at 3-4%/year while income rising at 7-9% p.a. in the near future. Historical data show that during 2010-2015, sales growth of mini EV and compact PV ($\leq 1.6L$) has been consistently considerably higher than the growth of motorcycle/ e-scooter.

Figure 10: Sales growth comparison (yoy%)







Source: Frost & Sullivan, CAAM, Tianneng Power. Note: compact PV refers to passenger vehicles with engine capacity below or equal 1.6L

Figure 11: China passenger vehicle price index (Jan-2004 = 100)



Source: CEIC

Table 4: Comparison of e-scooter, motorcycle, mini EV and compact PV

	E-scooter	Motorcycle	Mini EV	Compact PV ($\leq 1.6L$)
Example				
Price	Starting MSRP ~Rmb1,500	Starting MSRP ~Rmb4,500	Starting MSRP ~Rmb15-30k	Starting MSRP ~Rmb20-30k
Max speed	Electric mopeds: ≤ 20 km/hr Electric motorcycles: > 50 km/h	> 50 km/h	> 50 km/h to < 80 km/h	> 100 km/hr
Leading brands	Yadea, Aima	Haojue, Suzuki, Loncin, Lifan	Zotye, BAIC, Chery, Zhidou	Geely, BYD, Chery, Wuling

Source: J.P. Morgan, Frost & Sullivan, CAAM, Tianneng Power. Note: compact PV refers to passenger vehicles with engine capacity below or equal 1.6L

Risk 3: Regulatory risk on prohibiting electric two-wheelers

Certain cities in China have prohibited the use of electric two-wheelers, such as Shengzhen, Dongguan and Xiamen (in certain districts). Some other cities including Beijing and Shanghai have set stricter rules such as requiring registration of electric two-wheelers or requiring dealers to obtain approval of sales of e-scooter/e-bike. In other words, while ~200 cities in China currently have imposed restrictions on traditional motorcycles, at least 14 cities have also place similar limit on use of e-scooters or e-bikes (Table below). As a result, we believe e-scooter/e-bike sales could be adversely affected if additional city governments adopt a similar policy to restrict the sales/use of e-scooters or/and e-bikes.

Table 5: Example of regulation on use/sales of electric two-wheelers

Date	Place	Details
Jul-07	Dongguan	Prohibits e-bikes from registration and road use
Oct-11	Shenzhen	Prohibits use of e-scooters and e-bikes on the road
Jan-12	Xiamen	Prohibits e-bikes in certain districts
Beijing, Shanghai, Shenyang, Nanjing, Hefei, Wuhan, Chongqing, Changsha, Guiyang, Haikou, Sanya		1) Require end customers to register electric two-wheelers 2) Require dealers to obtain approval of sales of electric two-wheelers 3) Prohibits/restricts sales/use of electric two-wheelers which do not meet national standards

Source: Company

Risk 4: Pending litigations and non-compliance incidents

Yadea is involved in an on-going litigation with potential liability amount of Rmb683k and related legal costs.

Besides pending litigations, Yadea also had a few non-compliance incidents in the past few years and was fined a total of Rmb269k with Rmb12.9mn potential liability of unpaid social insurance and housing provident fund payments as of Dec-2015:

1. Production of non-conforming gasoline engine boosted bicycle (fined Rmb60k)
2. Production of non-conforming electric bicycle (fined Rmb8.9k)
3. Failure to obtain environment impact assessment approval (fined Rmb200k)
4. Failure to make social insurance and housing provident fund payments (estimated Rmb12.9mn of total outstanding social insurance and housing provident fund contribution as of Dec-2015)

Valuation references

Average FY16E PER ranges widely in each category:

- 1) **Consumer discretionary 13.7x**
- 2) **Automotive 9.6x**
- 3) **Two-wheeler 22.0x**
- 4) **New energy vehicle 16.7x**
- 5) **Battery 7.5x**
- 6) **Overall average 14.3x**

Considering the nature and functionality of Yadea's product, we believe we should use the following broad set of industries as references:

- **Consumer discretionary** (nature of product) as electric bikes or scooters can be classified as a discretionary product to some extent. In the valuation comparison table below, we include both Hong Kong and China listed discretionary stocks as part of a relevant benchmark given the nature of underlying product although we do recognize that the companies outlined here are in very different businesses.
- **Automotive vehicle** (functionality of product) because e-scooters or e-bikes are mainly used for daily commuting, similar to cars. Key difference is e-scooters or e-bikes are generally only for short-distance commuting, whereas cars can be used for both short-haul and long-haul traveling.
- **Two-wheelers** (functionality of product) including motorcycles and bicycles as both are used for short-distance commuting, like e-scooters and e-bikes. We find several motorcycle manufacturers listed in China but most are small caps without consensus estimates.
- **New energy** (nature of product): Here we include new energy vehicle manufacturers and battery suppliers to e-bike or e-scooter as conceptually Yadea's product is more environmentally friendly than traditional motorcycle (that generated pollution). Management of Yadea also indicates that the company has an existing mechanism to recycle disposed lead-acid battery from customers.

Among the various valuation methodologies, we believe earnings multiples, i.e. PER, are most appropriate to benchmark the company. Based on Bloomberg consensus forecasts and JPMe (for stocks under coverage), average FY16E PERs range widely - for instance, consumer discretionary at 13.7x, automotive 9.6x, two-wheeler 22.0x, new energy vehicle 16.7x and battery 7.5x. Average of all segments and stocks above is 14.3x (Table below). Of note we have excluded three statistic outliers in the valuation analysis as we believe they would distort the comp set and hence potentially mislead, i.e. Esprit (69x due to distressed earnings), BYD 27.5x (for its lithium battery capability) and Zhong Lu Co. (114x as a result of little earnings).

Our Dec-16 PT of HK\$1.5 is based on 10x 2016 PER, considering all the factors and trading ranges above as well as Yadea's relatively limited history vs. most listed companies. This would place Yadea at a meaningful premium over passenger vehicle makers but within the range of discretionary stocks although at an apparent discount to two-wheelers because they are either listed in the A-share market (generally at premiums over H-share in the first place) or they pay much higher dividends (near 70% payout) to investors (i.e. Giant and Merida).

Table 6: Valuation summary

Ticker	Company Name	Local name	JPM analyst	Country	Rec	Price (LC) Mkt Cap		P/E		P/BV		ROE		Div yield	
						Jun-22	(US\$ M)	16E	17E	16E	17E	16E	17E	16E	17E
1585 HK	Yadea	雅迪	Nick Lai	China	N	1.3	503	8.5	5.7	1.6	1.2	27%	24%	0.0%	0.0%
Consumer discretionary								13.7	12.1	1.9	1.8	14%	15%	4.0%	4.7%
2020 HK	Anta Sports Prod	安踏体育	Shen Li, CFA	China	N	14.2	4,591	12.4	10.6	3.1	2.8	26%	28%	5.5%	6.5%
1880 HK	Belle Intl	百丽	Ebru Sener Kurumlu	China	N	4.3	4,708	10.2	8.2	1.2	1.1	15%	14%	6.1%	7.3%
1234 HK	China Lilang Ltd	中国利郎	Shen Li, CFA	China	OW	4.8	753	7.0	6.6	1.5	1.4	23%	22%	9.3%	9.8%
3308 HK	Golden Eagle Ret	金鹰商贸集团	Ebru Sener Kurumlu	China	N	8.4	1,823	14.7	13.2	2.2	2.0	15%	16%	3.1%	3.4%
1169 HK	Haier Electronic	海尔电器	Shen Li, CFA	China	OW	11.4	4,112	10.5	9.6	1.6	1.4	16%	16%	0.9%	1.0%
2331 HK	Li Ning Co Ltd	李宁	Shen Li, CFA	China	N	3.4	831	13.3	10.6	1.4	1.3	12%	13%	1.7%	4.8%
891 HK	Trinity Ltd	利邦	Shen Li, CFA	Hong Kong	N	0.6	133	9.7	7.4	0.3	0.3	3%	4%	6.8%	8.5%
1368 HK	Xtep Intl	特步国际	Shen Li, CFA	Hong Kong	N	4.2	1,205	10.9	9.8	1.5	1.4	14%	15%	5.6%	6.1%
330 HK	Esprit Hldgs	思捷环球	Ebru Sener Kurumlu	Hong Kong	N	6.0	1,496	60.1	48.3	0.7	0.7	-2%	1%	0.0%	1.2%
709 HK	Giordano Intl	佐丹奴国际	Shen Li, CFA	Hong Kong	N	3.5	709	12.6	12.4	2.0	2.0	16%	16%	7.4%	7.4%
494 HK	Li & Fung Ltd	利丰	Ebru Sener Kurumlu	Hong Kong	N	3.6	3,938	11.2	10.2	1.3	1.2	10%	11%	5.4%	5.9%
1212 HK	Lifestyle Intl	利福国际	Ebru Sener Kurumlu	Hong Kong	OW	12.3	2,545	9.2	8.7	1.5	1.3	17%	16%	4.9%	5.2%
973 HK	L'Occitane Intl	欧舒丹	Shen Li, CFA	Hong Kong	OW	16.8	3,199	20.2	17.6	3.0	2.7	16%	16%	1.9%	2.2%
178 HK	Sa Sa Intl Hldgs	莎莎国际	Shen Li, CFA	Hong Kong	N	2.7	1,010	21.8	18.1	3.4	3.2	16%	18%	3.3%	4.1%
1910 HK	Samsonite Intl	新秀丽	Shen Li, CFA	Luxembourg	N	23.1	4,191	19.3	17.3	2.7	2.5	15%	16%	2.5%	2.7%
600315 CH	Shanghai Jahwa-A	上海家化	Ebru Sener Kurumlu	China	N	27.1	2,780	22.4	20.9	3.0	2.8	14%	14%	2.0%	2.1%
600690 CH	Qingdao Haier-A	青岛海尔	Shen Li, CFA	China	OW	8.9	8,237	13.0	12.4	2.1	1.9	17%	16%	1.9%	2.1%
Automotive								9.6	8.6	1.1	1.0	13%	13%	3.0%	3.1%
600104 CH	Saic Motor-A	上汽集团	Nick Lai	China	N	20.4	34,159	7.2	6.8	1.2	1.1	17%	17%	6.7%	7.0%
1114 HK	Brilliance China	华晨中国	Nick Lai	China	OW	7.9	5,136	9.6	8.0	1.5	1.3	16%	17%	1.3%	1.4%
1958 HK	Baic Motor-H	北汽汽车	Nick Lai	China	UW	5.5	5,346	10.6	9.1	0.9	0.9	9%	10%	3.2%	3.2%
489 HK	Dongfeng Motor-H	东风集团	Nick Lai	China	N	8.4	9,319	4.9	4.7	0.6	0.6	14%	13%	2.8%	2.9%
175 HK	Geely Automobile	吉利汽车	Nick Lai	China	OW	4.2	4,777	9.5	7.6	1.4	1.2	16%	17%	0.9%	1.3%
2333 HK	Great Wall Mot-H	长城汽车	Nick Lai	China	N	6.5	10,577	6.0	6.2	1.1	1.0	20%	17%	7.9%	5.0%
2238 HK	Guangzhou Auto-H	广汽集团	Nick Lai	China	OW	9.5	16,729	7.5	6.7	1.2	1.0	17%	17%	2.6%	4.3%
881 HK	Zhongsheng Group	中升控股	Nick Lai	China	UW	4.2	1,162	13.2	12.4	0.7	0.6	5%	5%	1.2%	1.5%
1293 HK	Baoxin Auto Grou	宝信汽车	Nick Lai	China	N	4.2	1,398	19.8	18.1	1.7	1.6	9%	9%	0.0%	0.5%
1728 HK	China Zhengtong	正通汽车	Nick Lai	China	N	2.9	835	7.8	6.9	0.6	0.6	8%	9%	3.4%	3.9%
New energy vehicle								16.7	14.0	2.9	2.6	21%	21%	3.7%	2.7%
1211 HK	Byd Co Ltd-H	比亚迪	Nick Lai	China	OW	46.4	19,916	22.2	17.5	2.6	2.2	12%	14%	0.0%	0.0%
600066 CH	Zhengzhou Yut-A	宇通客车	Nick Lai	China	OW	20.0	6,728	11.2	10.5	3.3	2.9	30%	29%	7.5%	5.3%
729 HK	Fdg Evehicles	五龙电动车	N/A	Hong Kong	NC	0.4	1,260	n/a	n/a	n/a	n/a	-5%	-50%	n/a	n/a
Two-wheelers								22.0	18.9	3.2	2.9	18%	18%	3.1%	3.3%
9921 TT	Giant Manufactur	巨大	Dan Lu, CFA	Taiwan	N	205.0	2,389	23.0	21.0	3.6	3.4	16%	17%	3.0%	3.2%
9914 TT	Merida Industry	美利达	Dan Lu, CFA	Taiwan	N	140.5	1,305	14.7	13.9	3.1	2.9	22%	21%	4.8%	5.0%
2206 TT	Sanyang Motor Co	三阳工业	N/A	Taiwan	NC	21.0	574	24.4	n/a	n/a	n/a	n/a	n/a	n/a	n/a
1599 TT	Aeon Motor Co Lt	宏佳腾	N/A	Taiwan	NC	55.5	78	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
8937 TT	Her Chee Industr	合骥工业	N/A	Taiwan	NC	11.3	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
601777 CH	Lifan Industry-A	力帆股份	N/A	China	NC	11.6	2,222	23.8	18.2	n/a	n/a	n/a	n/a	n/a	n/a
600818 CH	Zhonglu Co Ltd-A	中路股份	N/A	China	NC	30.7	1,292	88.8	92.9	20.9	15.7	18%	17%	0.1%	0.0%
603766 CH	Loncin Motor C-A	隆鑫通用	N/A	China	NC	19.4	2,467	19.0	16.3	2.9	2.5	16%	16%	1.4%	1.6%
001696 CH	Chongqing Zong-A	宗申动力	N/A	China	NC	11.0	1,909	27.4	24.9	n/a	n/a	n/a	n/a	n/a	n/a
600877 CH	China Jialing-A	中国嘉陵	N/A	China	NC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
000017 CH	Shenz China Bi-A	深中华	N/A	China	NC	10.3	630	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
600679 CH	Jinshan Develo-A	金山开发	N/A	China	NC	14.5	662	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
000913 CH	Zhejiang Qian -A	钱江摩托	N/A	China	NC	12.2	841	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
600099 CH	Linhai Co Ltd-A	林海股份	N/A	China	NC	11.6	385	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
200054 CH	Chongqing Jian-B	建摩	N/A	China	NC	13.8	212	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
422 HK	Vietnam Manufact	越南制造加工	N/A	Hong Kong	NC	0.4	47	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Battery for electric two-wheelers								7.5	6.2	1.4	1.2	19%	20%	4.6%	5.9%
819 HK	Tianneng Power	天能动力	N/A	China	NC	5.5	804	6.4	5.2	1.3	1.1	22%	23%	5.5%	6.8%
951 HK	Chaowei Power	超威动力	N/A	China	NC	4.9	648	8.5	7.1	1.5	1.3	15%	16%	3.7%	5.0%
002684 CH	Guangdong Dyna-A	猛狮科技	N/A	China	NC	33.6	1,677	43.0	23.6	11.3	7.6	27%	33%	n/a	n/a
Average ⁽¹⁾								14.3	12.0	2.6	2.2	15%	14%	3.6%	4.0%

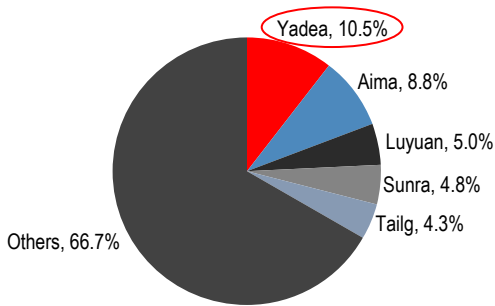
Source: Bloomberg, J.P. Morgan estimates. Estimates are based on Bloomberg consensus for companies not under J.P. Morgan coverage. Note: (1) Average PER excludes outliers (>100x or negative PER) and BYD whose PER is due to battery capability.

Company analysis

Market leader in electric two-wheeler vehicle industry

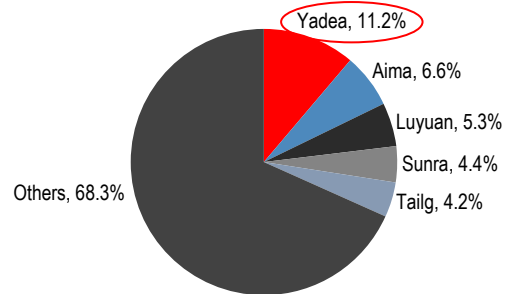
Yadea was established in 2001 and is the largest player in the electric scooter segment in China by revenue in 2015, accounting for 11.2% of the market. In the electric bicycle market, Yadea is the second-largest player with 9.2% market share by revenue in 2015. Adding e-scooter and e-bike together, Yadea accounted for 9.9% of the market's total sales volume in 2015, 10.5% of total revenue and 24% of total net profit (source: Frost & Sullivan) thanks to the company's higher efficiency and profitability.

Figure 12: China electric two-wheeler vehicle market share by revenue (2015)



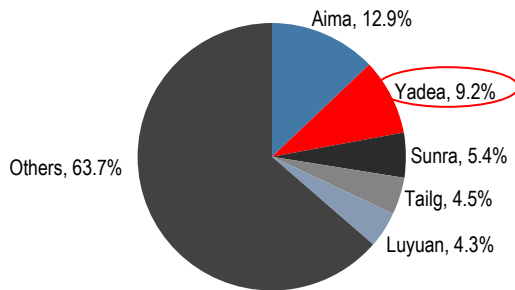
Source: Frost & Sullivan

Figure 13: China electric scooter market share by revenue (2015)



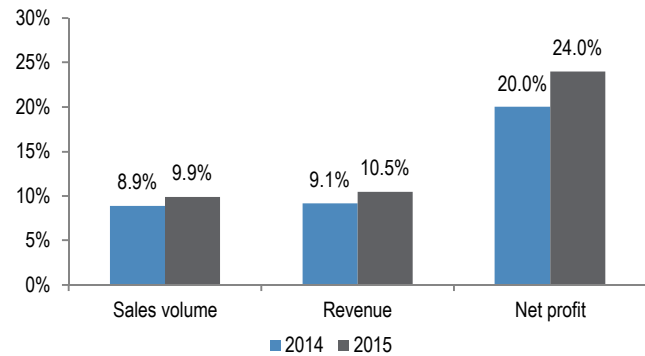
Source: Frost & Sullivan

Figure 14: China electric bicycle market share by revenue (2015)



Source: Frost & Sullivan

Figure 15: Yadea's market share in China electric two-wheeler market (2014 and 2015)

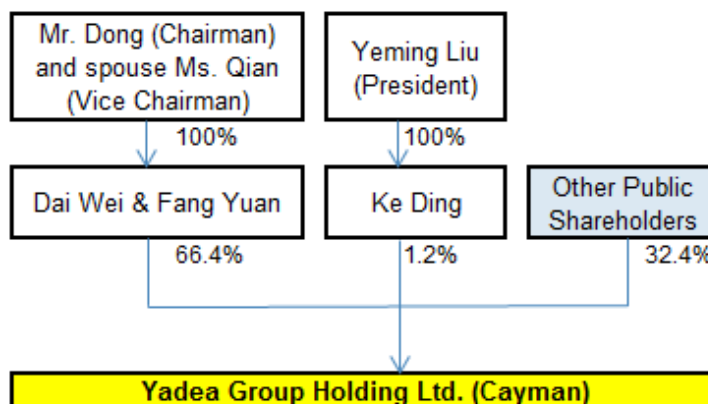


Source: Company, Frost & Sullivan, J.P. Morgan

Shareholding structure and milestones

Yadea's founder and Chairman, Mr. Dong and his spouse Ms. Qian together hold 66.4% of the company's total shares post IPO. The President Mr. Yeming Liu holds 1.2% of total shares. Please refer to below chart for Yadea's current shareholding structure.

Figure 16: Shareholding structure post IPO



Source: Company.

Table 7: Milestones

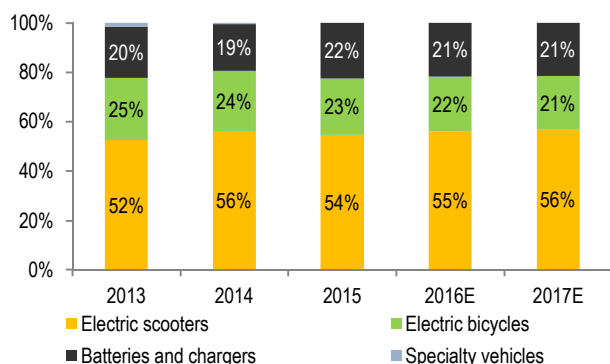
Year	Event
2001	• Mr. Dong and Ms. Qian established Jiangsu Yadea as Wuxi Dongshi Vehicle Industry Co., Ltd.
2007	• Established Yadea Import Export and began international expansion.
2012	• Zhejiang Yadea obtained the license for production of electric motorcycles, the first company in electric two-wheeled vehicle industry to obtain such license.
2015	• Entered into a strategic co-operation agreement with Lightning Motors to jointly develop and produce high-end products and acquired 11.1% of Lightning Motors in Dec-2015 with total consideration of USD1.3mn.
2016	• Listed in HK stock exchange

Source: Company.

Product analysis

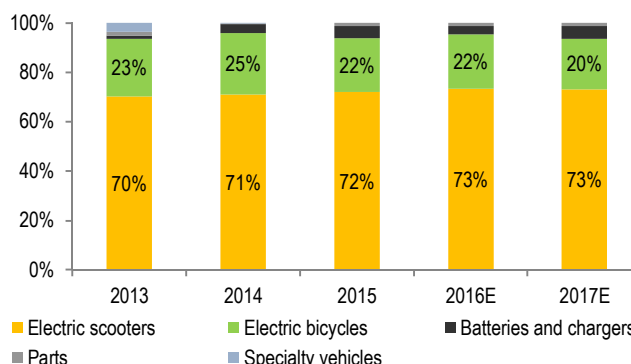
Yadea mainly produces and sells electric two-wheeler vehicles including electric scooters and electric bicycles, which together account for 77% of the company’s 2015 revenue (e-scooter 54% and e-bike 23%). Yadea also sells batteries and chargers (22% of 2015 revenue) together with vehicle sales as well as for after-market use. A very minor portion of the revenue (1% in FY15) comes from sales of vehicle parts for after-market use (i.e. electric motor, vehicle frames, etc.). By profit, electric two-wheeler vehicles accounted for 94% of 2015 gross profit (e-scooter 72% and e-bike 22%) due to much higher profit margins.

Figure 17: Yadea revenue breakdown by product



Source: Company, J.P. Morgan estimates

Figure 18: Yadea gross profit breakdown by product

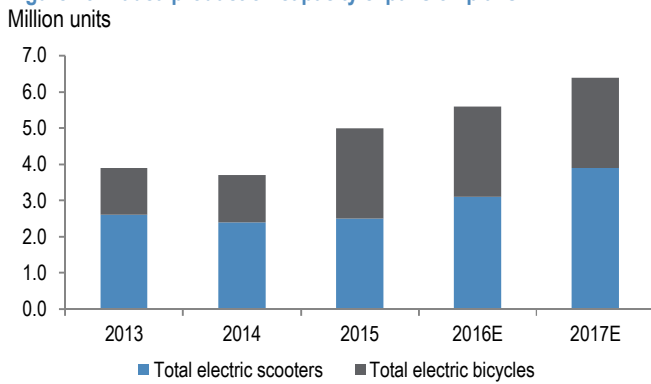


Source: Company, J.P. Morgan estimates.

Production and capacity expansion plans

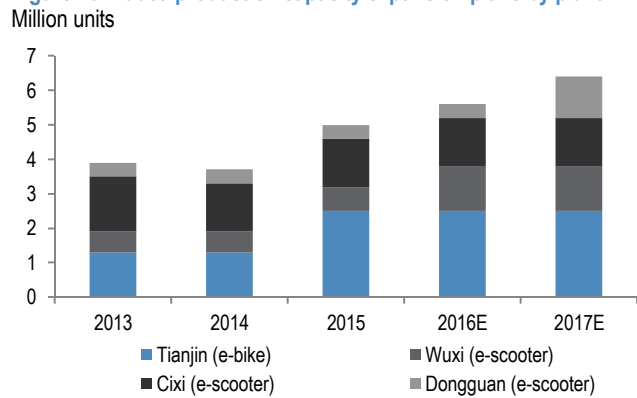
As of end-2015, Yadea had annual electric two-wheeler production capacity of 5.0 million units from its four production plants – Tianjin, Wuxi, Cixi and Dongguan. By product, Yadea’s production capacity for electric scooters and electric bicycles was 2.5mn units each. Capacity at Tianjin plant was expanded to 2.5mn units (vs. 1.3mn units in end-14) in April-2015 and Yadea plans to expand its production capacity at Wuxi plant to 1.3mn units by end-16 (from 0.7mn units as of end-15). Dongguan plant is also expected to expand to 1.2mn units’ capacity by end-2017. Upon completion of expansion at Wuxi and Dongguan plants, Yadea will have a total of 6.4mn units’ production capacity by end-2017, based on our analysis.

Figure 19: Yadea production capacity expansion plans



Source: Company, J.P. Morgan estimates

Figure 20: Yadea production capacity expansion plans by plant



Source: Company, J.P. Morgan estimates

SWOT analysis

<p>Strengths</p> <ul style="list-style-type: none"> ▪ Superior profitability: Yadea's profitability measured by gross margin has improved meaningfully from 13% in 2013 to 17% in 2014 and 19% in 2015 vs. average of China's listed two-wheelers at ~13% in 2014. In the pure electric two-wheeler industry, Yadea's superior profitability can be gauged through its 24% market share by net profit (FY15) vs. only ~10% share in sales volume or revenue. ▪ Healthy balance sheet and cash flow position: Yadea's ROE was 39% in 2014 and 58% in 2015, well above most industry peers. Yadea has been net cash position consistently since 2013 and its net cash to equity stood at 225% in 2014 and 199% in 2015 vs. industry average of 12%. Furthermore, Yadea's cash conversion cycle is exceptionally strong at -116/-156 days in 2014/2015 vs. other peers at best -9 days, as the company receives payment from customers (i.e. dealers) rather quickly and then pays suppliers several months later. The company's negative working capital and free cash flow position allows for potential dividend upside, in our view. 	<p>Weaknesses</p> <ul style="list-style-type: none"> ▪ Pricing competition: The electric two-wheeler industry is highly fragmented as top 5 players accounted for only 33% of total revenue in 2015. In such a highly competitive industry, a sudden slowdown in demand could lead to aggressive price competition. <p>Indeed, when industry sales volume decelerated to 0.2% growth in 2014 (from 8% in 2013 and 15% in 2012), Yadea's e-scooter and e-bike ASP dropped a result of higher discounts offered to dealers as part of sales promotion which lasted from 2H14 to 3Q15. Blended ASP in 2015 further declined by 4% vs. 2014.</p> <p>Our sensitivity analysis indicates that a 1% drop in e-scooter and e-bike blended ASP could lead to ~4% drop in 2015/16E gross profit, or ~10% change in net profit, assuming all other assumptions held constant (i.e. no change in sales volume and same opex assumptions).</p>
<p>Opportunities</p> <ul style="list-style-type: none"> ▪ Industry resilient growth: Sales of China's electric two-wheeled vehicle industry have recorded 5%/7% CAGR between 2010-2015 by volume/revenue and are expected to grow at 5%/7% CAGR between 2015-2017E, according to Frost & Sullivan. ▪ Market share gain: Yadea's market share grew from ~8% in 2013 to ~10% in 2015 based on our analysis. In the near future, we believe industry consolidation will continue and Yadea should retain its leadership position and further increase share. ▪ Restriction on motorcycle an opportunity for e-scooters: As a result of regulatory restrictions on the use of motorcycles, domestic motorcycle sales (mainly gasoline powered motorcycles) declined at a CAGR of 9% between 2010-2015 whilst electric two wheelers (i.e. electric bike, electric moped and electric motorcycle) grew by 5% in the same period. ▪ Penetration into high-end LiB e-scooter: Yadea plans to jointly develop new high-end LiB model with Lightning; expected MSRP at Rmb10-20k. 	<p>Threats</p> <ul style="list-style-type: none"> ▪ Consumption upgrade might be a threat to two-wheeler demand: While we acknowledge that the starting price of entry-level four-wheelers (mini EVs/ compact cars) is ~10-15x of two-wheelers, two factors could continue to drive consumption upgrade: 1) China's passenger vehicle price has been declining at 4% CAGR in the past decade. 2) At the same period, average disposable income per capita rose at 11% CAGR. <p>We believe both trends could carry on with average car prices declining at 3-4%/year while income rising at 7-9% in the near future. Historical data shows that during the period of 2010-2015, sales growth of mini EV and compact PV ($\leq 1.6L$) have been consistently and considerably higher than the growth of motorcycle/ e-scooter.</p> <ul style="list-style-type: none"> ▪ Regulatory risk on prohibiting electric two-wheelers: Certain cities in China have prohibited the use of electric two-wheelers, such as Shengzhen, Dongguan and Xiamen. We believe industry sales could be adversely affected if additional city governments adopt similar policy to restrict the sales/use of e-scooter or e-bikes.

Industry analysis

5% CAGR growth expected in China in 2015-2017E

Global retail sales volume of two-wheeler electric vehicles grew at 5% CAGR during 2010-2015 to 39 million units in 2015 and is estimated to grow at 4% CAGR (2015-2017E) to 42 million units in 2017E, according to Frost & Sullivan. China accounted for 86% of global sales in 2015 with 5% CAGR in 2010-2015 to 34 million units in 2015. China electric two-wheeler vehicle sales volume will grow at 5% CAGR to 37 million units in 2017E, according to Frost & Sullivan.

Disposable income growth to continue to drive industry sales

China's disposable income per capita grew at 10.3% CAGR in 2010-2015 (for urban population) and our economists estimate this trend will continue at 7-9% in the next few years. We expect China's rising disposable income to continue to drive consumption demand for electric two-wheeler vehicles in the near future.

ASP increase to further drive revenue growth

Retail sales value of China electric two-wheeler vehicles grew at a moderately higher rate compared to sales volume due to continuing rising ASP. According to Frost & Sullivan, average selling price of e-scooters rose from Rmb2,544 in 2010 to Rmb2,708 in 2015 while ASP of e-bikes grew from Rmb1,903 to Rmb2,023 in the same period. Frost & Sullivan estimates electric two-wheeler vehicle industry ASP will further grow at 3% CAGR into 2017E, resulting in sales value CAGR of 7% vs. volume of only 5% in 2015-17E, driven by rising living standards and higher contribution from high-end products.

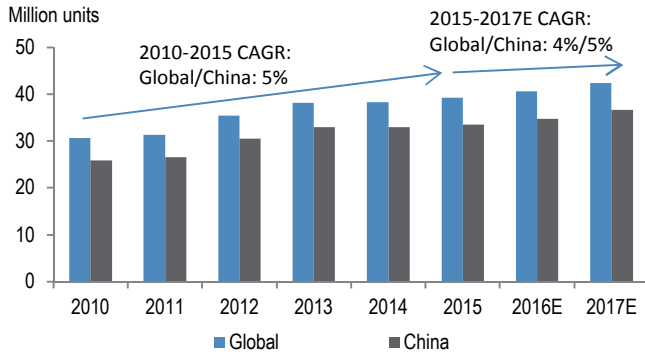
E-scooters to enjoy superior growth over e-bikes

Sales volume and value of electric scooters in China grew at 7%/8% CAGR in 2010-2015 vs. electric bicycles at 4%/5% in the same period. E-scooters enjoy better growth over e-bikes partially due to consumption upgrade or substitution effect from e-bikes to e-scooters. It is estimated that electric scooters will grow at 6%/8% CAGR in volume/value in 2015-17E vs. e-bikes at 1%/3%.

Market consolidation and competitive landscape

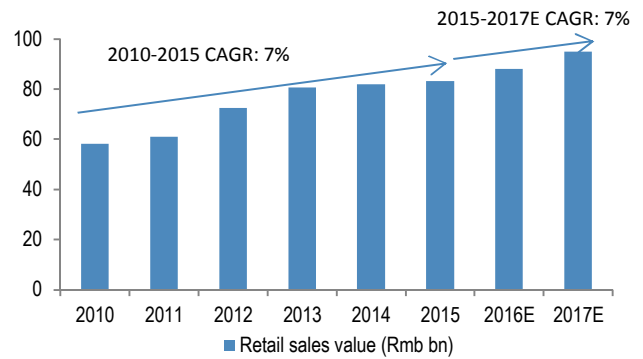
China's electric two-wheeler industry consolidated from over 2,500 brands in 2010 to around 250 manufacturers above designated scale in 2015. The industry remains pretty fragmented as top 5 players in the industry accounted for only 33% of revenue in 2015. Yadea ranks as No. 1 in electric two-wheeler industry with 10.5% market share by sales value.

Figure 21: Retail sales volume of electric two-wheeler vehicles



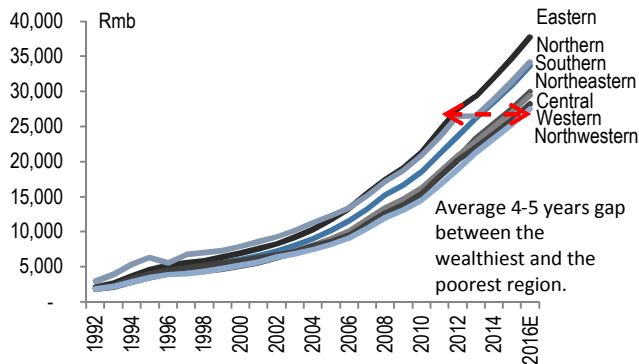
Source: Frost & Sullivan

Figure 22: China retail sales value of electric two-wheeler vehicles



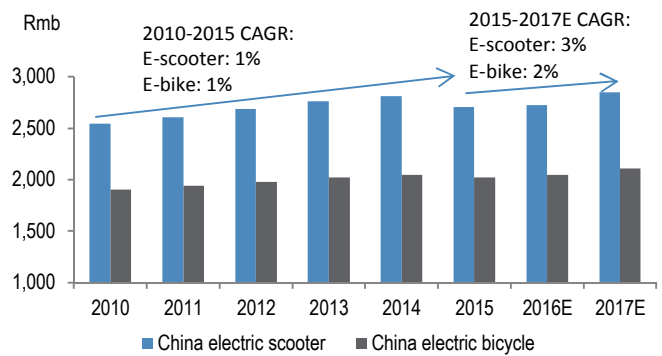
Source: Frost & Sullivan

Figure 23: China disposable income per capita by region (urban population)



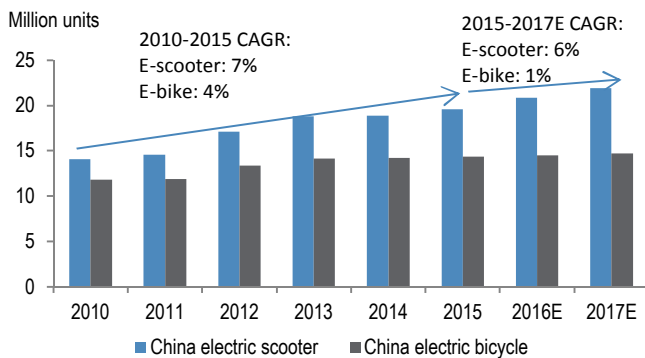
Source: CEIC, J.P. Morgan estimates

Figure 24: China e-scooter and e-bike ASP trend



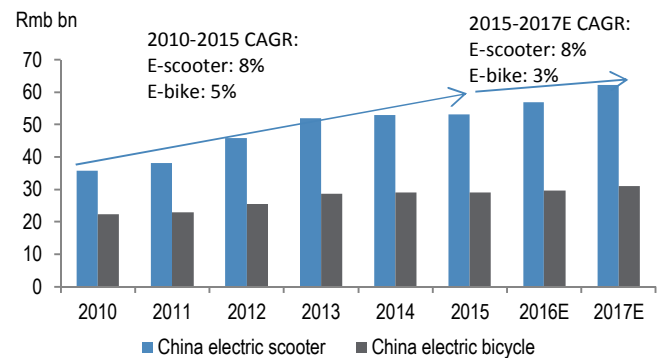
Source: Frost & Sullivan

Figure 25: China retail sales volume of e-scooter and e-bike



Source: Frost & Sullivan

Figure 26: China retail sales value of e-scooter and e-bike



Source: Frost & Sullivan

Financial analysis

Profit & loss

Sales volume to grow at 13% CAGR in 2015-17E vs. industry at 5%

We expect Yadea's vehicle sales volume to grow at 14%/13% in 2016E/2017E, or 13% 2015-17E CAGR vs. industry at 5% driven by market share gains through better branding and aggressive capacity expansion. By product, we estimate Yadea's e-scooter segment will grow at 15% CAGR in 2015-2017E and e-bikes at 11% in the same period.

Improving profit margin

Yadea's gross margin improved from 13% in 2013 to 19% in 2015 largely driven by:

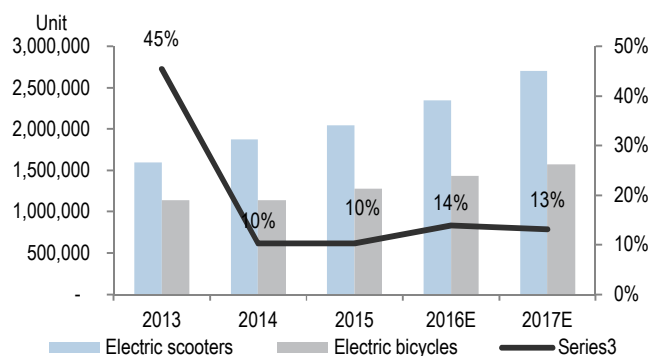
1. **Decrease in raw material costs:** Raw materials include procurement of battery, electric motors and other parts and frames. Raw materials accounted for 92% of COGS in 2015, down from 93% in 2013. This is largely driven by a decline in the market price of battery and electric engines.
2. **Product mix:** Electric scooters carry a much higher margin than electric bikes (gross margin: 25% vs. 18% in 2015). Yadea's strategic focus on electric scooters in past years led its revenue contribution rising to 54% in 2015 (up from 52% in 2013) and hence overall margin.
3. **ASP increase:** Yadea's e-scooter and e-bike ASPs increased by 2% CAGR in 2013-2015 (vs. industry trend of 1% decline in the same period) thanks to increasing sales from higher-end models.

We expect Yadea's gross margin will continue to improve to 19%/20% in 2016/17E driven by raw material cost decline and product mix towards higher-end models. Likewise, the company's operating margin and net margin (exclude one-off expenses) are estimated to increase to 9%/7% in 2017E from 8%/6% in 2015 or 4%/3% in 2013.

Net profit to grow at 25%/19% in 2016/17E

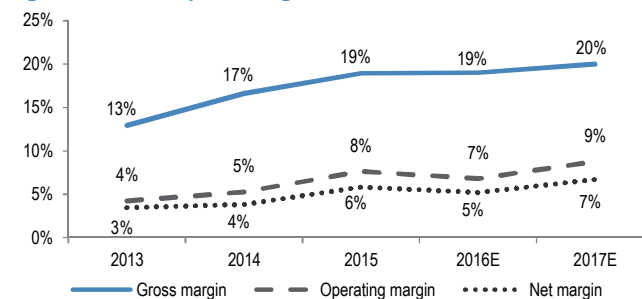
We expect Yadea's normalized net profit (excluding one-off expenses) to grow at 25%/19% in 2016/17E, or to Rmb490mn in 2016 from Rmb393mn in 2015, thanks to robust sales growth (revenue up 16% in 2016/17E) and margin expansion discussed above.

Figure 27: Yadea's sales volume and forecast



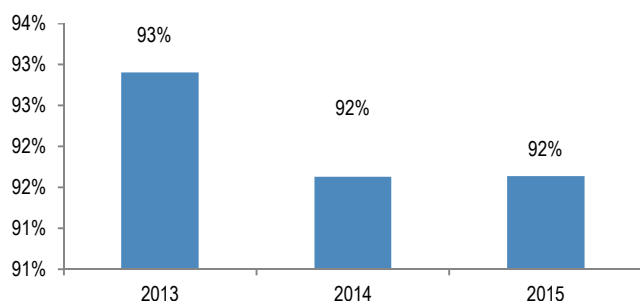
Source: Company, J.P. Morgan estimates

Figure 28: Yadea's profit margin trends



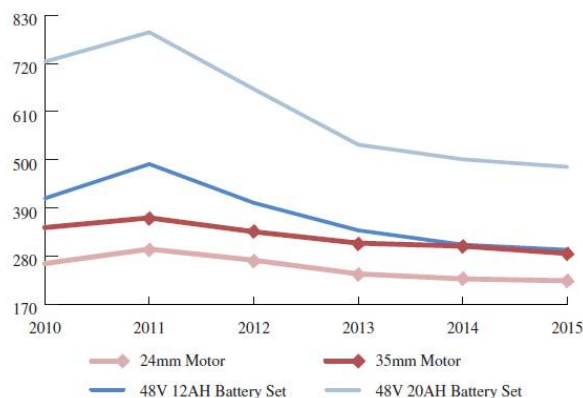
Source: Company, J.P. Morgan estimates

Figure 29: Yadea's raw material cost as % of COGS



Source: Company, J.P. Morgan estimates

Figure 30: Price trends of battery and electric motor (Rmb)



Source: Frost & Sullivan

Table 8: P&L analysis

RMB mn, %	2013	2014	2015	2016E	2017E
Revenue	5,059	5,824	6,429	7,478	8,693
Sales growth (yoy%)	51%	15%	10%	16%	16%
Gross profit	655	968	1,217	1,422	1,738
Gross margin (%)	13%	17%	19%	19%	20%
Operating profit	214	306	491	508	763
Operating margin (%)	4.2%	5.2%	7.6%	6.8%	8.8%
Pre-tax profit	225	307	491	510	763
Tax rate (%)	23%	27%	24%	24%	24%
Net profit	174	223	375	390	583
Net margin (%)	3.4%	3.8%	5.8%	5.2%	6.7%
Net profit growth (yoy%)	71%	28%	68%	4%	49%
Normalized NP (excl one-off)	175	306	393	490	583
Net margin (%)	3.4%	5.3%	6.1%	6.6%	6.7%
Net profit growth (%)	72%	75%	29%	25%	19%

Source: Company, J.P. Morgan estimates.

Balance sheet

DuPont analysis – ROE estimated at 27% in 2016E

We expect Yadea's ROE 27%/24% in 2016/17E vs. 58% in 2015 as a result of enlarged equity base (and hence lower equity multiplier) as well as deleverage, highlighted in the DuPont analysis below. On the other hand, we believe Yadea's profitability in terms of net margin will improve to 7% from 6% over this period.

Net cash position since 2013

Yadea has been in a net cash position consistently for the period 2013-2015 as the company barely has any interest-bearing debt (only Rmb13mn as of 2015). We believe Yadea will stay in a net cash position for 2016/17E.

Very strong cash conversion cycle

Yadea has a very healthy cash conversion cycle of -156 days in 2015 as its account receivables turnover was merely 8 days (Yadea usually receives payments before distribution of goods and only selected dealers with good credit history are granted with short-term credit term) and inventory turnover was also healthy at 11 days while accounts payable turnover was 175 days long. We believe Yadea will keep a negative CCC position in 2016/17E.

Table 9: Du Pont analysis

	2013	2014	2015	2016E	2017E
Net margin	3%	4%	6%	5%	7%
Asset turnover (x)	2.3	2.1	1.9	1.6	1.4
Equity multiplier (x)	4.0	4.8	5.3	3.3	2.5
ROE	32%	39%	58%	27%	24%

Source: Company, J.P. Morgan estimates

Table 10: Balance sheet analysis

	2013	2014	2015	2016E	2017E
Net debt (cash) / equity	-124%	-225%	-199%	-134%	-134%
AR days	5	5	8	9	9
Inventory days	31	20	11	15	21
AP days	112	140	175	180	174
Cash conversion cycle (days)	-76	-115	-156	-156	-144
Current ratio	87%	87%	93%	128%	137%
Quick ratio	69%	80%	89%	117%	125%

Source: Company, J.P. Morgan estimates. Note: net debt is calculated as interest-bearing borrowings - cash and cash equivalent and pledged bank deposits.

Cash flow

Consistent free cash flow since 2013

Yadea has delivered consistent positive free cash flow since 2013 and we expect the company to maintain its strong cash position in 2016/17E with total cash at year end standing at Rmb1.9bn/2.4bn. At the moment, we have not factored any dividend forecast in our model but believe there is potential upside to this assumption considering the company's solid financial position as discussed above. In 2015 though, the company declared it would distribute altogether Rmb154mn dividend (paid in Jan-2015), in recognition of existing shareholders' contribution.

In terms of working capital, we estimate it might turn from negative position (-Rmb222mn) in 2015 to positive Rmb953mn in 2016, mainly as a result of increased cash. Although we forecast its working capital will turn positive in 2016/17E, cash conversion cycle is expected to remain strong.

Table 11: Cash flow analysis

Rmb mn	2013	2014	2015	2016E	2017E
Working capital	(249)	(323)	(222)	953	1,429
Operating cash flow	444	862	794	400	764
Capex	(187)	(199)	(161)	(214)	(184)
Free cash flow	257	662	633	186	580
Total cash at period end	283	501	787	1,902	2,482

Source: Company, J.P. Morgan estimates. Note: Free cash flow is calculated as operating cash flow – capex. Working capital is calculated as current asset – current liability. Capex includes 1) purchase of property, plant and equipment, 2) additions to prepaid land lease payments and 3) additions of intangible assets.

Investment Thesis, Valuation and Risks

Yadea Group Holdings Ltd (Neutral; Price Target: HK\$1.50)

Investment Thesis

Positive investment thesis includes 1) superior profitability and healthy balance sheet, 2) resilient industry growth and market share gains, 3) restrictions on gasoline-powered motorcycle an opportunity for e-scooters, 4) penetration into high-end Lib e-scooter through Lightning.

Investment risks include 1) pricing competition in the industry, 2) consumption upgrade to four-wheelers a threat to two-wheelers demand, 3) regulatory risks on prohibiting electric two-wheelers.

Valuation

Our Dec-16 PT of HK\$1.5 is based on 10x 2016 PER, considering trading ranges of comparable peers as well as Yadea's relatively limited history vs. most listed companies. This would place Yadea at a meaningful premium over passenger vehicle makers but within the range of discretionary stocks, although at an apparent discount to two-wheelers because they are either listed in the A-share market (generally at premiums over H-share in the first place) or pay much higher dividends (near 70% payout) to investors (i.e. Giant and Merida).

Risks to Rating and Price Target

Downside risks: 1) Worse than expected sales or pricing environment. 2) More cities placing restrictions or bans on the use of electric two-wheelers. Upside risk: Better than expected sales volume or pricing.

Yadea Group Holdings Ltd: Summary of Financials

Income Statement						Cash flow statement					
Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E	Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E
Revenues	5,824	6,429	7,478	8,693	9,440	Profit before tax	223	375	390	583	646
% change Y/Y	15.1%	10.4%	16.3%	16.2%	8.6%	Depreciation & amortization	40	60	68	77	83
Gross Profit	968	1,217	1,422	1,738	1,904	Change in working capital	719	540	89	290	329
% change Y/Y	48.0%	25.7%	16.8%	22.3%	9.5%	Others	(121)	(181)	(147)	(186)	(91)
Gross margin	16.6%	18.9%	19.0%	20.0%	20.2%	Cash flow from operations	862	794	400	764	967
Operating Profit	306	491	511	763	845	Purchase of fixed assets	(199)	(161)	(214)	(184)	(135)
% change Y/Y	43.1%	60.6%	4.0%	49.4%	10.8%	Others	(57)	(250)	0	0	0
Operating Margin	5.2%	7.6%	6.8%	8.8%	9.0%	Cash flow from investment	(256)	(411)	(214)	(184)	(135)
Net Interest	(0)	(0)	(0)	(0)	(0)	Equity raised/(repaid)	121	0	930	0	0
Earnings before tax	307	491	510	763	845	Debt raised/(repaid)	0	0	0	0	0
% change Y/Y	36.0%	60.0%	3.9%	49.4%	10.8%	Other	(509)	13	(0)	(0)	(0)
Tax	(83)	(115)	(120)	(179)	(199)	Dividends and others	0	(111)	0	0	0
as % of EBT	27.1%	23.5%	23.5%	23.5%	23.5%	Cash flow from financing	(387)	(98)	930	(0)	(0)
Net income (reported)	223	375	390	583	646	Beginning cash	283	501	787	1,902	2,482
% change Y/Y	28.4%	68.0%	3.9%	49.4%	10.8%	Ending cash	501	787	1,902	2,482	3,313
Net margin	3.8%	5.8%	5.2%	6.7%	6.8%						
Wt. Avg. Shares (MM)	0	3,000	3,000	3,000	3,000						
Wt. Avg. EPS (Rmb)	-	0.13	0.13	0.19	0.22						
% change Y/Y	-	-	3.9%	49.4%	10.8%						
Balance sheet						Ratio Analysis					
Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E	Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E
Cash and cash equivalents	501	787	1,902	2,482	3,313	EBITDA margin	6.0%	8.7%	7.8%	9.7%	9.9%
Accounts receivable	112	183	199	240	265	Operating margin	5.2%	7.6%	6.8%	8.8%	9.0%
Inventories	160	141	356	444	423	Net margin	3.8%	5.8%	5.2%	6.7%	6.8%
Others	1,305	1,853	1,946	2,177	2,289	Sales per share growth	-	-	16.3%	16.2%	8.6%
Current assets	2,078	2,964	4,403	5,343	6,290	Sales growth	15.1%	10.4%	16.3%	16.2%	8.6%
LT investments	-	-	-	-	-	Net profit growth	28.4%	68.0%	3.9%	49.4%	10.8%
Net fixed assets	584	680	798	887	931	EPS growth	-	-	3.9%	49.4%	10.8%
Other LT assets	17	111	374	391	400	Interest coverage (x)	1,398.3	23,227.5	1,500.8	2,170.2	2,396.7
Total Assets	2,917	3,990	5,574	6,621	7,621	Net debt to equity	(97.0%)	(99.0%)	(89.9%)	(91.9%)	(99.1%)
Short-term loans	0	13	13	13	13	Sales/assets	2.1	1.9	1.6	1.4	1.3
Payables	2,106	2,880	3,105	3,526	3,852	Assets/equity	4.81	5.32	3.32	2.55	2.37
Others	295	292	332	375	402	ROE	39.1%	57.8%	27.1%	24.4%	21.5%
Total current liabilities	2,401	3,186	3,450	3,913	4,267	ROCE	36.3%	57.3%	26.8%	24.2%	21.4%
Long term debt	0	0	0	0	0						
Other LT liabilities	0	22	22	22	22						
Total non-current liabilities	0	22	22	22	22						
Total Liabilities	2,401	3,208	3,472	3,936	4,289						
Shareholders' equity	517	782	2,102	2,685	3,331						
Minorities	0	0	0	0	0						

Source: Company reports and J.P. Morgan estimates.

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- **Lead or Co-manager:** J.P. Morgan acted as lead or co-manager in a public offering of equity and/or debt securities for Yadea Group Holdings Ltd within the past 12 months.
- **Client:** J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as clients: Yadea Group Holdings Ltd.
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	Overweight (buy)	Neutral (hold)	Underweight (sell)
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IB clients*	53%	49%	34%
JPMS Equity Research Coverage	43%	48%	9%
IB clients*	71%	63%	49%

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