# J.P.Morgan

## **GVK Power & Infrastructure**

BIAL visit takeaways: Impressive operations + growth potential

We recently visited the greenfield Bangalore International Airport (BIAL) located 40km from the city, with GVK management.

- An efficient airport on a growth path: BIAL has a variety of unique features compared to other Indian airports and efficient operations. Moreover, the airport is on its way to expand its terminal capacity by ~17mn PAX and double the retail space at the airport to 10,000sqft. According to management, the expansion would require an outlay of Rs6-Rs8B thru FY12. Post FY15, a second terminal with a capacity of ~30mn PAX and a second runway is on the anvil. The current runway can support peak load of 36ATMs/hour compared to peak utilization of 26ATMs/hour. Management indicated this expansion would cost ~\$1B.
- Non aero revenues to grow but will BIAL get full benefit? Mgt. expects aero and non aero revenues to grow at a CAGR of 24% and 18%, respectively, thru FY15. As per the master plan, the total airport space will expand to 3,50,000 sqft, providing more retail space. BIAL currently operates on a dual till model, wherein it gets the full benefit of non aero revenues (49% of FY10 revenue). We think at best BIAL would subsidize its aero charges by 30%. This downside is more or less built into our model, given our conservative growth expectations compared to management guidance (10% CAGR in PAX traffic thru FY15 vs. mgt expectation of 15%).
- Still finalizing real estate plans: Of the allotted ~4,000 acres BIAL has been sanctioned the right to develop ~515 acres of real estate, with a blanket FSI on 2.5 implying 56mn sq ft of leasable area. There are no restrictions on the usage of the space with exception of residential development. 515 acres includes: (1) ~60 acres of airside property (2) 30 acres right in front of the terminal (4 acres sold to L&T/Oberoi hotels at Rs360M/acre) (4) 170 acres around the airport and (5) ~260 odd acres far east of the airport. However, the company's plans are still under development and we do not expect any revenue recognition before FY12.
- Our SOTP price target of Rs57 includes Rs11 for GVK's 29% stake in BIAL: We value BIAL at Rs61B, including Rs50B for the airport (18x FY12 EV/EBITDA; Hyderabad at 15x) and Rs10B for its land bank at Rs20M/acre. Faster-than-expected real estate monetization, higher PAX growth, and increased UDF provide upside risks to our estimates.

## **Overweight**

**GVKP.BO, GVKP IN** Price: Rs41.00

Price Target: Rs57.00

## India

## Infrastructure

## Shilpa Krishnan<sup>AC</sup>

(91-22) 6157-3580 shilpa.x.krishnan@jpmorgan.com

#### **Sumit Kishore**

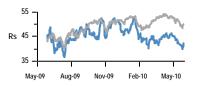
(91-22) 6157-3581 sumit.x.kishore@jpmorgan.com

## Deepika Belani

(91-22) 6157-3582 deepika.x.belani@jpmorgan.com

J.P. Morgan India Private Limited

#### **Price Performance**



## GVKP.BO share price (Rs BSE30 (rebased)

	YTD	1m	3m	12m
Abs	-8.5%	-5.7%	-2.1%	-1.4%
Rel	-3.4%	0.1%	-1.5%	-18.0%

## GVK Power & Infrastructure (Bloomberg: GVKP IN; Reuters: GVKP.BO)

Rs. in millions, year-end March

, ,		EV00	EV/10	F\/11F	EV/10E		
	FY08	FY09	FY10	FY11E	FY12E		
Sales	4,700	5,138	17,866	21,645	26,179	52-week range (Rs)	34.5-54.25
Net profit	1,355	1,076	1,559	2,610	4,663	Market cap (Rs B)	67.3
EPS (Rs)	1.04	0.77	0.99	1.65	2.95	Market cap (US\$ M)	1445.2
ROE (%)	9.7	4.8	5.6	7.8	12.6	Shares o/s (MM)	1579.2
ROCE (%)	5.3	2.5	5.3	6.2	8.9	Free float (%)	39.1
BVPS (Rs)	15.6	16.5	20.2	21.9	24.8	Avg daily value (Rs MM)	305.7
P/E (x)	40.9	55.5	43.1	25.7	14.8	Avg daily value (US\$ MM)	6.6
P/BV (x)	2.7	2.6	2.1	1.9	1.7	Avg daily volume (MM shs)	6.93
EV/EBITDA (x)	42.2	54.1	20.8	14.8	10.4	Exchange rate (Rs/US\$)	46.6

Source: Company data, J.P. Morgan estimates. Price updated on market close of 28 May 2010.

## See page 7 for analyst certification and important disclosures, including non-US analyst disclosures.

J.P. Morgan does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

## **Company Description**

GVKPIL is an integrated infrastructure player with assets in power, airport, road, and mining. The company is the developer and operator of the Mumbai International Airport slated to have a peak capacity of handling 40mn passengers per annum. The company has 881MW of operational generation capacity & 870MW capacity under construction. The company also operates & maintains the Jaipur Kishengarh expressway.

P&L sensitivity metrics	FBITDA	FPS
I al sensitivity metrics	LDITUA	LF3
	impact (%)	impact (%)
Traffic growth assumption (Road)		
Impact of 5% increase in FY11	0.70%	4.90%
Traffic growth assumption (Airport)		
Impact of 5% increase in FY11	[a]	1.81%

Source: J.P. Morgan estimates. [a] MIAL, the airport SPV is an associate.

## Price target and valuation analysis

Our Mar-11 SOP-based price target of Rs57 factors in Rs28/shr from MIAL, Rs11 from BIAL, Rs6 from power segment assets and Rs-5 from roads. As most of this value comes from operating projects, we view GVK as a good steady-return play with relatively lower risks. Plans to monetize 200 acres of real estate is a near-term catalyst.

## Revenue composition (FY09)



Source: Company reports.

**EPS: J.P. Morgan vs. consensus** 

	J. P. Morgan	Consensus
FY11E	1.65	1.63
FY12E	2.95	2.40
FY13E	3.13	4.15

Source: Bloomberg, J.P. Morgan estimates.

	(Rs/share)	COE (%)
Mumbai Airport	27.6	15.5
Core	15.3	
Real estate	12.3	
Jaipur-Kishengarh E'way	5.1	12.0
Power assets	16.4	13.0-13.5
Bangalore Airport	11.1	
Cash raised	(2.9)	
Overall	57	

We maintain our OW rating. Mumbai Airport is a potential stock catalyst. Sharp merchant price decline is a key risk to our estimates and PT.

## An efficient airport

- BIAL has a variety of unique features compared to other Indian airports including
  the flexible use of its infrastructure use of conveyor belts/check in terminals
  across airlines ensuring optimum utilization, swing terminal space between
  domestic and international.
- The airport has a central control room housing all stakeholders ground handling staff, airline operators, airport operators etc to ensure max efficiency and 85% departure punctuality.
- BIAL selects at least two concessionaires per category via an international bidding process to ensure competition. In addition does not enter in JVs with concessionaires to ensure efficient pricing and if one of the few airports in the country to do so.

## **Growth outlook**

- BIAL is currently expanding Terminal 1 to enhance PAX capacity to ~17mn from ~12mn currently and would double the retail space at the airport to 10,000sq ft. According to management, the expansion would require an outlay of Rs6-8B and would be complete within two years at best.
- On a longer-term horizon, the construction of a second terminal is on the anvil
  with a capacity of 30mn PAX as well as an additional 4km long parallel runway
  to support >25mn passenger traffic by FY16. The current runway and facilities
  can support peak load of 36ATMs/hour compared to peak utilization of
  26ATMs/hour. Management indicated this expansion would cost \$1B.

Table 1: BIAL: Growth outlook as per management guidance

	FY10	FY15	FY20	FY30
Aero (Rs. mn)	2,930	8,500	14,500	33,000
Non aero (Rs mn)	1.710	3,900	9,000	17,500
Cargo (Rs mn)	190	500	960	2,500
Total Revenue (Rs mn)	4,830	12,900	24,460	53,000
PAX traffic (mn)	10	20	30	50
Rev/PAX	488	645	815	1,060
ATMs	104,653	220,000	320,000	540,000
Cargo ('000 MT)	174	375	625	1,112

Source: Company reports.

Table 2: J.P. Morgan estimates vs. management expectations

Rs. in million, year-end March

	FY10	FY15	FY20	FY30	FY10-15 CAGR
Management guidance					
Total Revenue (Rs mn)	4,830	12,900	24,460	53,000	21.7%
PAX traffic (mn)	10	20	30	50	15.1%
Rev/PAX (Rs)	488	645	815	1,060	
JPMorgan estimates					
Total Revenue (Rs mn)	4,830	8,831	14,981	30,605	12.8%
PAX traffic (mn)	10	16	24	37	10.1%
Rev/PAX (Rs)	488	552	614	818	

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

## Real estate to provide the upside

- Allotted ~4,000 acres, this greenfield airport has been sanctioned the right to
  develop and monetize ~515 acres of real estate surrounding the airport, with a
  blanket FSI on 2.5 implying 56mn sq ft of area for lease. Moreover, BIAL has no
  restrictions on the usage of the space with the exception of residential
  development.
- The 515 acres includes: (1) ~60 acres of airside property, (2) 30 acres right in front of the terminal, of which 4 acres have been sold to Oberoi hotels at Rs360M/acre, (4) 170 acres of prime real estate around the airport, and (5) ~260 odd acres far east of the airport. However, the company's plans are still under development and we do not expect any revenue recognition before FY12.

## Did GVK pay too much?

- GVK purchased its 29% stake in BIAL in two tranches: 17% from L&T for Rs6.8B and 12% from Zurich Airport for Rs4.8B, implying a valuation of Rs40B. L&T and Zurich made >500% return on their investment in BIAL.
- Our SOTP price target of Rs57 includes Rs11 for GVK's 29% stake in BIAL. We value BIAL at Rs60.6B, including Rs50.3B for the airport which equates to a FY12E EV/EBITDA of 18x compared to 15x for Hyderabad airport (equity value of Rs78B). We think the premium to Hyderabad airport is justified on account of superior growth prospects.
- We value the 515 acres of leasable area at Rs20M/acre, implying a valuation of Rs10.3B or Rs2/share. Given that the development of the land parcels is still in the planning stage, our valuation is conservative. Faster-than-expected developments on this front provide upside risks to our estimates and PT.

Table 3: GVK Power and Infrastructure: SOTP Valuation

	Total as	set value	GVK's stake Value of GVK's stake				
	(Rs bn)	(US\$ mn)	(%)	(Rs bn)	(US\$ mn)	(Rs/share)	(% Contribution)
Mumbai Airport	117.7	2,451	37.0	43.5	907	27.6	48.0
Core	65.3	1,360	37.0	24.2	503	15.3	26.6
Real estate	52.4	1,091	37.0	19.4	403.6	12.3	21.4
Roads	8.0	167		8.0	167	5.1	8.9
GJEPL	8.0	167	100.0	8.0	167.4	5.1	8.9
Power	31.5	656		26.1	544.1	16.5	28.8
Jegurupadu-l	7.6	157	100.0	7.6	157.5	4.8	8.3
Jegurupadu-II	5.8	121	100.0	5.8	120.7	3.7	6.4
Gautami	14.8	308	63.6	9.4	196.1	6.0	10.4
Goindwal Sahib	0.9	19	100.0	0.9	18.7	0.6	1.0
Alaknanda Hydro	1.9	39	100.0	1.9	39.2	1.2	2.1
Tolkisud	0.6	12	100.0	0.6	11.9	0.4	0.6
Bangalore Airport	60.6	1,263	29.0	17.6	366	11.1	19.4
Core	50.3	1,048	29.0	14.6	304	9.2	16.1
Real Estate	10.3	215	29.0	3.0	62	1.9	3.3
Net-cash at parent level	(4.6)	(95)	100.0	(4.6)	(95)	(2.9)	(5.0)
Grand total	213	4,443		91	1,890	57.4	100

Source: J.P. Morgan estimates.

Table 4: BIAL: Key operational data and Summary P&L

Rs. in million, year-end March

	4Q10	4Q09	% YoY	3Q10	% QoQ	FY10	FY09	% YoY
PAX (number in millions)	2.6	0.6	365	2.6	(3)	9.9	7.2	37
Cargo ('000 tonnes)	49.0	8.2	502	45.3	8	174.6	130.3	34
ATM (number in '000s)	27.4	25.8	6	26.3	4	104.7	88.8	18
Summary P&L								
Net revenue	1,326	1,189	12	1,095	21	4,647	3,095	50
Opex	495	986	(50)	390	27	1,655	1,994	(17)
EBITDA	831	202	311	705	18	2,992	1,101	172
EBITDA Margin	62.7	17.0		64.4		64.4	35.6	
Other income	348	119		44		462	128	
Interest	628	(99)	(738)	224	180	1,335	1,063	26
Depreciation	336	(321)	(204)	339	(1)	1,338	1,129	19
PBT	215	741	(71)	185	16	781	(962)	(181)
Tax	2	(4)		-		4	8	
PAT	212	745	(71)	185	15	777	(970)	(180)

Source: Company reports.

## GVK Power and Infrastructure: Summary of Financials

Profit and Loss statement					Cash flow statement				
Rs in millions, year-end Mar	FY09	FY10	FY11E	FY12E	Rs in millions, year-end Mar	FY09	FY10	FY11E	FY12
Revenues	5,138	17,866	21,645	26,179	EBIT	984	3,226	4,904	8,48
% change Y/Y	9.3	247.7	21.2	20.9	Depreciation & Amortization	780	1,371	2,405	3,07
EBITDA Margin (%)	34.3	25.7	33.8	44.2	Tax	(100)	(200)	(497)	(848
Adjusted EBITDA	2,515	4,770	6,908	11,472	Other income	202	292	159	18
% change Y/Y Adjusted EBITDAt Margin	(11.0)	89.6	44.8	66.1	Exceptionals	0	0	0	
(%)	49.0	26.7	31.9	43.8	Decrease in WC	1,614	28	(375)	(1,829
EBIT inc OI	1,185	3,517	5,063	8,673	Operating CF	3,479	4,716	6,596	9,07
% change Y/Y	(25.1)	196.7	44.0	71.3					
EBIT Margin (%)	23.1	19.7	23.4	33.1	Capex	(27,226)	(7,030)	(13,878)	(16,60
Net Interest	(334)	(2,085)	(2,085)	(3,131)	Change in investments	3,854	(3,336)	(3,413)	(351
Earnings before tax	852	1,433	2,978	5,542	Investing CF	(23,372)	(10,365)	(17,290)	(16,952
% change Y/Y	(33.9)	68.2	107.9	86.1					
Tax	(100)	(200)	(497)	(848)	Change in debt	16,888	6,559	12,262	11,24
as % of EBT	11.8	14.0	16.7	15.3	Other financing activities	(334)	5,417	(1,868)	(2,92
Net Income	1,076	1,559	2,610	4,663	Financing CF	16,554	11,976	10,394	8,31
% change Y/Y	(20.6)	44.9	67.5	78.6	-				
Shares Outstanding	1,406	1,579	1,579	1,579	Change in cash	(3,339)	6,327	(300)	43
EPS	0.77	0.99	1.65	2.95	Opening Cash	1,643	1,562	7,889	7,58
% change Y/Y	(26.3)	29.0	67.5	78.6	Closing Cash	1,562	7,889	7,589	8,02
Balance sheet					Ratio Analysis				
Rs in millions, year-end Mar	FY09	FY10	FY11E	FY12E	%, year-end Mar	FY09	FY10	FY11E	FY12
Net fixed assets	13,590	26,825	51,561	48,981	Revenue growth	9.3	247.7	21.2	20.
CWIP & Construction stores	38,502	31,113	18,348	34,948	EBITDA growth	(5.0)	160.7	59.0	58.
Investments	3,214	6,550	9,962	10,314	Adjusted EBITDA growth	(11.0)	89.6	44.8	66
Cash & bank balances	1,562	7,889	7,589	8,025	PAT growth	(20.6)	44.9	67.5	78.
Net current assets ex-cash	1,325	1,297	1,673	3,501	EPS growth	(26.3)	29.0	67.5	78.
Total Assets	58,192	73,673	89,133	105,769	· ·				
					EBITDA margin	34.3	25.7	33.8	44.
Total debt	29,798	36,357	48,620	59,860	Dividend payout ratio	0.0	0.0	0.0	0
Paid-up common stock	1,406	1,579	1,579	1,579	, ,				
Reserves and surplus	21,823	30,377	32,987	37,650					
Shareholders' funds	23,229	31,956	34,566	39,229	Sales/assets (x)	0.1	0.3	0.3	0
Deferred tax liability	2,521	2,521	2,521	2,521	Assets/equity (x)	2.4	2.0	2.3	2
Minority interest	2,644	2,839	3,426	4,159	Debt/equity (x)	1.2	1.0	1.3	1.
Total Liabilities	58,192	73,673	89,133	105,769	Net debt/ equity (x)	1.1	0.8	1.1	1
		•			ROCE (%)	2.5	5.3	6.2	8
					RoE (%)	4.8	5.6	7.8	12
DVDC	14 5	20.2	21.0	24.0	NOL (70)	٠.٠	5.0	7.0	12.
BVPS	16.5	20.2	21.9	24.8					

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



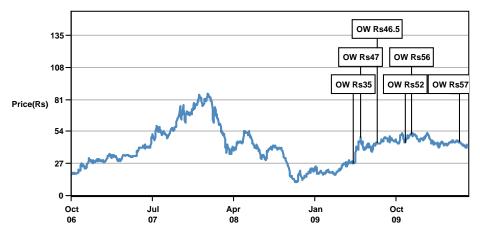
#### **Analyst Certification:**

The research analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple research analysts are primarily responsible for this report, the research analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the research analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect his or her personal views about any and all of the subject securities or issuers; and (2) no part of any of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst(s) in this report.

## **Important Disclosures**

- Lead or Co-manager: JPMSI or its affiliates acted as lead or co-manager in a public offering of equity and/or debt securities for GVK Power & Infrastructure within the past 12 months.
- Client of the Firm: GVK Power & Infrastructure is or was in the past 12 months a client of JPMSI; during the past 12 months, JPMSI provided to the company investment banking services.
- Investment Banking (past 12 months): JPMSI or its affiliates received in the past 12 months compensation for investment banking services from GVK Power & Infrastructure.
- **Investment Banking (next 3 months):** JPMSI or its affiliates expect to receive, or intend to seek, compensation for investment banking services in the next three months from GVK Power & Infrastructure.

#### GVK Power & Infrastructure (GVKP.BO) Price Chart



Date	Rating	Share Price (Rs)	Price Target (Rs)
10-May-09	OW	27.15	35.00
05-Jun-09	OW	48.70	47.00
29-Jul-09	OW	44.50	46.50
03-Nov-09	OW	44.80	52.00
22-Nov-09	OW	51.95	56.00
02-May-10	OW	45.15	57.00

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends. Initiated coverage May 10, 2009. This chart shows J.P. Morgan's continuing coverage of this stock; the current analyst may or may not have covered it over the entire period.

J.P. Morgan ratings: OW = Overweight, N = Neutral, UW = Underweight.

### Explanation of Equity Research Ratings and Analyst(s) Coverage Universe:

J.P. Morgan uses the following rating system: **Overweight** [Over the next six to twelve months, we expect this stock will outperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] **Neutral** [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] **Underweight** [Over the next six to twelve months, we expect this stock will underperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] J.P. Morgan Cazenove's UK Small/Mid-Cap dedicated research analysts use the same rating categories; however, each stock's expected total return is compared to the expected total return of the FTSE All Share Index, not to those analysts' coverage universe. A list of these analysts is available on request. The analyst or analyst's team's coverage universe is the sector and/or country shown on the cover of each publication. See below for the specific stocks in the certifying analyst(s) coverage universe.

Coverage Universe: **Shilpa Krishnan:** Adani Enterprises Ltd (ADEL.BO), Adani Power (ADAN.BO), Bharat Heavy Electricals (BHEL) (BHEL.BO), GMR Infrastructure Ltd (GMRI.BO), GVK Power & Infrastructure (GVKP.BO), JSW Energy Ltd. (JSWE.BO), Lanco Infratech (LAIN.BO), Larsen & Toubro (LART.BO), NTPC (NTPC.BO), Reliance Infrastructure Ltd (RLIN.BO), Reliance Power (RPOL.BO), Suzlon Energy Ltd (SUZL.BO), Tata Power (TTPW.BO)

#### J.P. Morgan Equity Research Ratings Distribution, as of March 31, 2010

	Overweight	Neutral	Underweight
	(buy)	(hold)	(sell)
JPM Global Equity Research Coverage	45%	42%	13%
IB clients*	48%	46%	32%
JPMSI Equity Research Coverage	42%	49%	10%
IB clients*	70%	58%	48%

<sup>\*</sup>Percentage of investment banking clients in each rating category.

For purposes only of NASD/NYSE ratings distribution rules, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category.

**Valuation and Risks:** Please see the most recent company-specific research report for an analysis of valuation methodology and risks on any securities recommended herein. Research is available at <a href="http://www.morganmarkets.com">http://www.morganmarkets.com</a>, or you can contact the analyst named on the front of this note or your J.P. Morgan representative.

**Analysts' Compensation:** The equity research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues, which include revenues from, among other business units, Institutional Equities and Investment Banking.

**Registration of non-US Analysts:** Unless otherwise noted, the non-US analysts listed on the front of this report are employees of non-US affiliates of JPMSI, are not registered/qualified as research analysts under NASD/NYSE rules, may not be associated persons of JPMSI, and may not be subject to NASD Rule 2711 and NYSE Rule 472 restrictions on communications with covered companies, public appearances, and trading securities held by a research analyst account.

## **Other Disclosures**

J.P. Morgan is the global brand name for J.P. Morgan Securities Inc. (JPMSI) and its non-US affiliates worldwide. J.P. Morgan Cazenove is a brand name for equity research produced by J.P. Morgan Securities Ltd.; J.P. Morgan Equities Limited; JPMorgan Chase Bank, N.A., Dubai Branch; and J.P. Morgan Bank International LLC.

**Options related research:** If the information contained herein regards options related research, such information is available only to persons who have received the proper option risk disclosure documents. For a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options, please contact your J.P. Morgan Representative or visit the OCC's website at <a href="http://www.optionsclearing.com/publications/risks/riskstoc.pdf">http://www.optionsclearing.com/publications/risks/riskstoc.pdf</a>.

## **Legal Entities Disclosures**

U.S.: JPMSI is a member of NYSE, FINRA and SIPC. J.P. Morgan Futures Inc. is a member of the NFA. JPMorgan Chase Bank, N.A. is a member of FDIC and is authorized and regulated in the UK by the Financial Services Authority. U.K.: J.P. Morgan Securities Ltd. (JPMSL) is a member of the London Stock Exchange and is authorised and regulated by the Financial Services Authority. Registered in England & Wales No. 2711006. Registered Office 125 London Wall, London EC2Y 5AJ. South Africa: J.P. Morgan Equities Limited is a member of the Johannesburg Securities Exchange and is regulated by the FSB. Hong Kong: J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong. Korea: J.P. Morgan Securities (Far East) Ltd, Seoul Branch, is regulated by the Korea Financial Supervisory Service. Australia: J.P. Morgan Australia Limited (ABN 52 002 888 011/AFS Licence No: 238188) is regulated by ASIC and J.P. Morgan Securities Australia Limited (ABN 61 003 245 234/AFS Licence No: 238066) is a Market Participant with the ASX and regulated by ASIC. Taiwan: J.P.Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. India: J.P. Morgan India Private Limited is a member of the National Stock Exchange of India Limited and Bombay Stock Exchange Limited and is regulated by the Securities and Exchange Board of India. Thailand: JPMorgan Securities (Thailand) Limited is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission. Indonesia: PT J.P. Morgan Securities Indonesia is a member of the Indonesia Stock Exchange and is regulated by the BAPEPAM LK. Philippines: J.P. Morgan Securities Philippines Inc. is a member of the Philippine Stock Exchange and is regulated by the Securities and Exchange Commission. Brazil: Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Mexico: J.P. Morgan Casa de Bolsa, S.A. de C.V., J.P. Morgan Grupo Financiero is a member of the Mexican Stock Exchange and authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. Singapore: This material is issued and distributed in Singapore by J.P. Morgan Securities Singapore Private Limited (JPMSS) [MICA (P) 020/01/2010 and Co. Reg. No.: 199405335R] which is a member of the Singapore Exchange Securities Trading Limited and is regulated by the Monetary Authority of Singapore (MAS) and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore) which is regulated by the MAS. Malaysia: This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X) which is a Participating Organization of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission in Malaysia. Pakistan: J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan. Saudi Arabia: J.P. Morgan Saudi Arabia Ltd. is authorised by the Capital Market Authority of the Kingdom of Saudi Arabia (CMA) to carry out dealing as an agent, arranging, advising and custody, with respect to securities business under licence number



35-07079 and its registered address is at 8th Floor, Al-Faisaliyah Tower, King Fahad Road, P.O. Box 51907, Riyadh 11553, Kingdom of Saudi Arabia. **Dubai:** JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - Building 3, Level 7, PO Box 506551, Dubai, UAE.

#### **Country and Region Specific Disclosures**

U.K. and European Economic Area (EEA): Unless specified to the contrary, issued and approved for distribution in the U.K. and the EEA by JPMSL. Investment research issued by JPMSL has been prepared in accordance with JPMSL's policies for managing conflicts of interest arising as a result of publication and distribution of investment research. Many European regulators require that a firm to establish, implement and maintain such a policy. This report has been issued in the U.K. only to persons of a kind described in Article 19 (5), 38, 47 and 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is only available to relevant persons and will be engaged in only with relevant persons. In other EEA countries, the report has been issued to persons regarded as professional investors (or equivalent) in their home jurisdiction. Australia: This material is issued and distributed by JPMSAL in Australia to "wholesale clients" only. JPMSAL does not issue or distribute this material to "retail clients." The recipient of this material must not distribute it to any third party or outside Australia without the prior written consent of JPMSAL. For the purposes of this paragraph the terms "wholesale client" and "retail client" have the meanings given to them in section 761G of the Corporations Act 2001. Germany: This material is distributed in Germany by J.P. Morgan Securities Ltd., Frankfurt Branch and J.P. Morgan Chase Bank, N.A., Frankfurt Branch which are regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht. Hong Kong: The 1% ownership disclosure as of the previous month end satisfies the requirements under Paragraph 16.5(a) of the Hong Kong Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission. (For research published within the first ten days of the month, the disclosure may be based on the month end data from two months' prior.) J.P. Morgan Broking (Hong Kong) Limited is the liquidity provider for derivative warrants issued by J.P. Morgan Structured Products B.V. and listed on the Stock Exchange of Hong Kong Limited. An updated list can be found on HKEx website: http://www.hkex.com.hk/prod/dw/Lp.htm. Japan: There is a risk that a loss may occur due to a change in the price of the shares in the case of share trading, and that a loss may occur due to the exchange rate in the case of foreign share trading. In the case of share trading, JPMorgan Securities Japan Co., Ltd., will be receiving a brokerage fee and consumption tax (shouhizei) calculated by multiplying the executed price by the commission rate which was individually agreed between JPMorgan Securities Japan Co., Ltd., and the customer in advance. Financial Instruments Firms: JPMorgan Securities Japan Co., Ltd., Kanto Local Finance Bureau (kinsho) No. 82 Participating Association / Japan Securities Dealers Association, The Financial Futures Association of Japan. Korea: This report may have been edited or contributed to from time to time by affiliates of J.P. Morgan Securities (Far East) Ltd, Seoul Branch. Singapore: JPMSS and/or its affiliates may have a holding in any of the securities discussed in this report; for securities where the holding is 1% or greater, the specific holding is disclosed in the Important Disclosures section above. India: For private circulation only, not for sale. Pakistan: For private circulation only, not for sale. New Zealand: This material is issued and distributed by JPMSAL in New Zealand only to persons whose principal business is the investment of money or who, in the course of and for the purposes of their business, habitually invest money. JPMSAL does not issue or distribute this material to members of "the public" as determined in accordance with section 3 of the Securities Act 1978. The recipient of this material must not distribute it to any third party or outside New Zealand without the prior written consent of JPMSAL. Canada: The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. To the extent that the information contained herein references securities of an issuer incorporated, formed or created under the laws of Canada or a province or territory of Canada, any trades in such securities must be conducted through a dealer registered in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed judgment upon these materials, the information contained herein or the merits of the securities described herein, and any representation to the contrary is an offence. **Dubai:** This report has been issued to persons regarded as professional clients as defined under the DFSA rules.

General: Additional information is available upon request. Information has been obtained from sources believed to be reliable but JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) do not warrant its completeness or accuracy except with respect to any disclosures relative to JPMSI and/or its affiliates and the analyst's involvement with the issuer that is the subject of the research. All pricing is as of the close of market for the securities discussed, unless otherwise stated. Opinions and estimates constitute our judgment as of the date of this material and are subject to change without notice. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipient of this report must make its own independent decisions regarding any securities or financial instruments mentioned herein. JPMSI distributes in the U.S. research published by non-U.S. affiliates and accepts responsibility for its contents. Periodic updates may be provided on companies/industries based on company specific developments or announcements, market conditions or any other publicly available information. Clients should contact analysts and execute transactions through a J.P. Morgan subsidiary or affiliate in their home jurisdiction unless governing law permits otherwise.

"Other Disclosures" last revised March 1, 2010.