

## THE CONSTRUCTION SECTOR OF INDONESIA \*

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### 1. EXECUTIVE SUMMARY

Economic growth of Indonesia has increased from 4.5% in 2009 to 6.10% in 2010. It is expected this year (2011) is about 6.5% (CBS, 2011). The contribution of construction sector to GDP is IDR 660,967.5 Billion (2010) based on current price and IDR 150,063.3 Billion (2010) under constant price (2000). CBS (2011) also published that the growth rate of domestic product by construction sector from quarter I (2011) to quarter IV (2011) was 4.5% while quarter II (2011) over quarter II (2010) was 7.4%. The construction investment has changed from 8.5% (2007), 7.5% (2008), 7.1% (2009) and 7.0% (2010). In the next following years until 2014, the volume of construction market will increase dramatically. Under the new masterplan of economic development (2011 – 2025), the Government estimates almost IDR 1,923.7 Trillion of infrastructure investment to boost economic growth under the new six economic corridors across archipelago (MP3EI, 2011). The market covers various infrastructures both under government funds and state owned companies as well public private partnership financing schemes. For the fiscal year 2011, the government spending for infrastructure provision accounts for almost IDR 140 Trillion and the next coming year accounts for IDR 180 Trillion (2012) in which public work projects covering road networks, water resources and human settlement will get the public funding almost IDR 62 Trillion (2012).

### 2. MACRO ECONOMY REVIEW & OUTLOOK

#### 2.1 Overview of National Economy

The Indonesian economy is growing significantly since it was hit by Asia economic crisis in 1997 and global financial crisis in 2008. Now it is considered to be in stable state and to growth at 6.06% (2008) but it slightly decreases at 4.5% (2009) and then increase 6.10% (2010). This year it is expected to grow 6.5%. During 2006-2009, economic of Indonesia were increased by 5.5% (2006), 6.3% (2007), 6.0% percent (2008), 4.5% (2009) and 6.10% (2010). Meanwhile, in the first semester in 2010 compare with second semester in 2009, grew by 2.1 percent and if it is compared with first semester in 2009 grew by 5.9 percent (CBS, 2010). Furthermore, the value of GDP at 2000 constant prices in 2006 was IDR 1,847.1 trillion and increased in the year 2009 to become IDR 2,177.0 trillion. In the first semester in 2010 GDP at constant prices was IDR 1,131.8 trillion. The growth of GDP in the period of quarter II (2011) over quarter II (2010) is 6.5% (CBS, 2011). The value of GDP at current prices in the year 2006 was IDR 3,339.2 trillion and always increased in the next year and it became IDR 5,613.4 trillion in 2009 and IDR 6,389.093 trillion in 2010 (CBS, 2011). Other component of GDP which has significant contribution to GDP is Gross Fixed Capital Formation (GFCF) and export of goods and services. The growth of GFCF is 9.2% in the period of

\*This paper is updated from the country paper presented in the 16<sup>th</sup> Asia Construct, 2010

quarter II (2011) over quarter II (2010). The growth of export of goods and services is 17.4% in the period of quarter II (2011) over quarter II (2010) (CBS, 2011)

The business trend index in fourth quarter of 2006 was 107.3 showing that business condition in general is better than third quarter of 2006. This business condition is growing better since increased revenue due to increasing production capacity and number of working time. Higher business revenue occurs in the finance sector, property and services. The higher increased workforce occurs in the construction sector. The highest business index is 115.35 occurring in the construction sector. It shows that this sector is the most increased sector compared to other sectors. However, the agriculture sector has decreased its index (95.12%). The business trend index during first quarter of 2007 was expected about 108.79. During 2007, business condition is expecting higher than 2006 and in this year, construction sector will have higher index.

## 2.2 Main Economic Indicators

The Indonesian economy is in a stable shape towards increased growth. The Indonesian gross domestic product for 2004 in constant 2000 real prices was IDR 1,511 Trillion which represents a 1.03% increase on the previous year. To January 2005 the gross domestic product grew at an annual rate of 5.13% in Central Bureau of Statistics data (CBS, Economic Indicators, January 2005). During the same period the consumer price index standing at 118.53 in January 2005 grew by only 1.43 points against 0.57 the previous year (2002=100). The interest on 90-day bank deposit bills was 6.65% in October and the 10-year Treasury Bonds returned 8.31%. Rising cost of materials including that for crude oil leading to an increase in inflation from 5.06% in 2003 to 6.4% in 2004 and the cyclical Rupiah devaluation of 20% against the US\$ has forced the government to instigate minimization of energy consumption, spending and subsidy provisions nationwide. The unemployment rate however, increased from 15% in 2003 to 16% in 2004. Despite current uncertainties about the international economy and the downturn in balance of payments from US\$ 28.6 Billion in 2003 to US\$ 23.5 Billion in 2004, the rate of economic growth is forecasted to continue to the end of 2010 at 6 % while construction growth is expected to achieve 7 – 8% in 2011, with the domestic economy proving to be relatively resistant to adverse global economic conditions. The inflation rate was higher in 2008 (11.06%), then decreased 2.78% in 2009 and 6.96% in 2010. This year, the inflation rate is forecasted about 4.42%. Table 1 and Table 2 show that main economic indicators. As shown in Table 2, the construction sector growth is very better since the Asia economic crisis. The growth is expected to increase since the government launched of the new masterplan of economic development 2011 – 2025 in which infrastructure development becoming a key strategic role of the national economic development (MP3EI, 2011). Under this new masterplan, there are six economic corridors across the nation with its very specific target of development.

**Table 1.** Main Economic Indicators

Indicators	2006	2007	2008	2009	2010	2011 (fc)
Economic Growth (%)	5.50	6.28	6.06	4.5	6	6
Construction Growth (%)	9.00	10.40	10.50	7.95	7.3	7-8
Inflation (%)	6.60	6.59	11.06	2.78	6.96	4.42
Foreign Exchange (Rp/US\$)	9.167	9.300	10.895	9.353	8.946	9.010
CBC-3 Months (%)	9.75	8.50	8.67	7.36	7.25	7.25
Oil Price (US\$/barrel)	64.00	94.00	99.40	61.7	85	106.4

Source: Central Bank of Indonesia, Finance Ministry of RI, [www.oilprice.net](http://www.oilprice.net) (2009) Updated (2011)

**Table 2.** Macro Economic Development Indicators

(IDR 1,000,000)

	2006	2007	2008	2009	2010	2011 (fc)
GDP at constant prices IDR 2000 Billion	1,847,127	1,963,092	2,082,104	2,165,388	2,286,650	2,412,076
GDP at current market price	3,339,217	3,949,321	4,954,029	5,152,190	5,440,713	6,165,836
GDP growth (%)	5.50	6.28	6.06	4.00	5.6	5.83
GDP growth (%) for agriculture, forestry and fishery sector	3.36	3.43	4.77	3.57	2.9	2.88
GDP growth (%) for manufacturing sector	4.59	4.67	3.66	4.38	3.6	3.44
GDP growth (%) for services sector	6.16	6.60	6.45	6.09	4.6	4.31
GDP growth (%) for mining sector	1.70	2.02	0.51	1.86	3.5	6.10
GDP growth (%) for construction sector	8.34	8.61	7.31	7.95	7.3	7.09
GDP growth (%) Financial, Ownership and Business Services	5.47	7.99	8.24	7.10	5.5	5.68
GDP growth (%) Transportation and Communication	14.23	14.04	16.69	14.43	11.9	11.50
GDP growth (%) Trade, Hotel and Restaurant	6.42	8.41	7.23	7.59	9.3	10.33
GDP growth (%) Electricity, Gas and Water Supply	5.76	10.33	10.92	8.33	7.2	8.06
Population (number)	222,747	225,642	227,779	230,633	237,556	241,417
Population growth rate (%)	1.32	1.30	0.95	1.25	2.9	3.88
Labour force (number)	106,390	109,940	111,879	113,852	116,000	118.54
Labour force growth rate (%)	0.10	3.34	1.76	1.76	1,9	17.10
Unemployment rate	11,104,693	10,547,917	9,427,590	9,258,964	8,595,600	8,067,220
Unemployment growth rate (%)	2.31	(5.01)	(10.62)	(1.79)	(7.16)	(7.37)
Inflation rate	13.33	6.40	10.31	6.02	5.67	5.13
Short term interest rate (%)	17.58	16.13	16.62	17.12	17.56	17.58
Long term interest rate (%)	15.07	13.00	13.90	14.87	15.18	15.27
Changes in Consumer Price Index (2007=100)	148.34	155.58	170.18	186.16	118.37	114.59
Average change against USD\$	9,020	9,300	10,895	10,150	8,950	8,990

Source: CBS (2009, 2010, 2011) &amp; Central Bank of Indonesia (2009, 2010, 2011)

### 3. OVERVIEW OF THE CONSTRUCTION INDUSTRY

#### 3.1 Construction Investment

The construction value completed can be seen in Tabel 3. The Government of Indonesia has expressed her desire to speed up infrastructure development in order to accelerate economic growth to levels of 7.8% through increasing the ratio of Investment to GDP to 28.4% from 19.6%, opening new job opportunities to reduce unemployment and poverty alleviation to 5.1% and 8.2%. The above investment driven development plan can be seen in Table 4 which depicts infrastructure demand between 2010-2014 to be IDR 1,923.7 Trillion or US\$ 209.949 Billion. By table 4 is also shown that the Indonesian government commits to accelerate the infrastructures development by intensifying **Public Private Partnership**. A more accurate picture can be obtained in Table 5 which illustrates Ready for Offer PPP Projects.

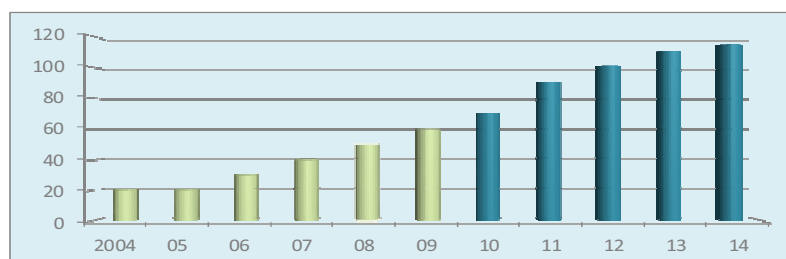
Table 3. Value of Construction Completed by Type of Construction  
2006 – 2011 Based on Contract Price (CBS, 2011)

(IDR 1,000,000)

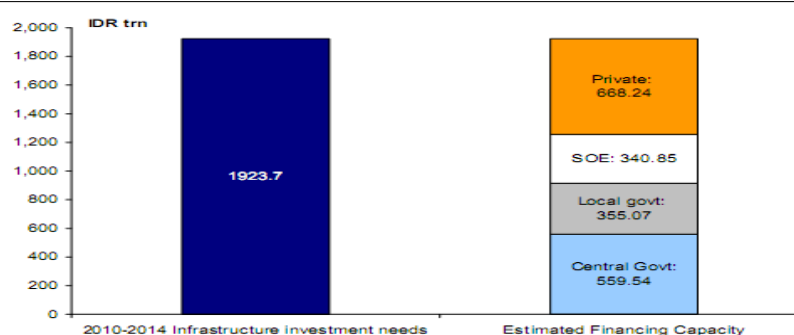
TYPE OF CONSTRUCTION		2006	2007	2008	2009	2010	2011*
1	Residential	9,305,172	9,305,172	11,263,484	12,448,707	13,758,648	15,206,431
2	Non residential	22,069,558	23,528,407	29,613,637	34,421,939	40,010,954	46,507,445
3	Electrical installation	3,363,393	3,563,451	3,775,409	3,999,974	4,237,897	4,489,972
4	Gas and Water supply installation	371,544	319,911	275,453	237,173	204,214	175,834
5	Sanitary installation	194,926	184,447	296,659	477,137	767,413	1,234,285
6	Foundation	850,095	625,198	1,127,658	2,033,936	3,668,572	6,616,935
7	Sound system, AC, lift, etc	1,268,817	1,476,285	1,261,856	1,273,379	1,285,008	1,296,742
8	Water supply network	512,374	538,055	681,455	789,341.97	914,309.44	1,059,061.58
9	Oil and Gas pipe network	648,546	646,127	1,031,995	1,338,225	1,735,324	2,250,257
10	Electricity network	1,027,867	2,406,148	3,653,882	7,051,032	13,606,640	26,257,240
11	Road and bridge works	19,897,065	21,008,143	25,345,791	28,670,093	32,430,404	36,683,909
12	Irrigation/drainage	4,553,470	5,392,472	6,999,582	8,687,475	10,782,390	13,382,477
13	Electric power supply and Telecommunication Network	1,137,230	458,105	218,031	103,770	49,388	23,506
14	Construction or improvement of airport, harbor, bus station, etc	1,598,572	1,513,014	1,112,716	1,053,162	996,795	943,445
15	Other construction works	5,144,678	6,180,386	7,827,060	9,402,775	11,295,708	13,569,719
	TOTAL	71,943,309	79,391,287	94,484,668	111,988,121	135,743,665	169,697,259

Source: CBS (2009)

Table 4. Infrastructure Fund by Central Government (IDR Trillion)



Five Year National Development Plan 2010-2014



Source: RPJMN

Table 5. Ready for Offer PPP Projects (PPP Books, 2011)

No	PROJECTS	CONTRACTING AGENCY	INVESTMENT ESTIMATION (US\$ MILLION)
1	Central Java Coal Fired System Power Plant*	PT. PLN	3,000.00
2	Soekarno Hatta Airport – Manggarai Railway*	Ministry of Transportation	1,100.00
3	Umbulan Water Supply *	Provincial Government of East Java	204.20
4	Purukcahu – Bangkuang Coal Railway*	Provincial Government of Central Kalimantan	2,100.00
5	Jakarta Monorail*	Provincial Government of DKI Jakarta	475.00
6	Southern Banten Airport	Provincial Government of Banten	213.61
7	Expansion of Tanjung Priok Port, Kalibaru, DKI Jakarta	Minister of Transportation	1,170.20
8	Tanah Ampo Cruise Terminal	Ministry of Transportation	28.30
9	Medan - Kuala Namu - Tebing Tinggi Toll Road*	Ministry of Public Works	670.40
10	Sunda Strait Bridge	Ministry of Public Works	25,000.00
11	Bandar Lampung Municipal Water Supply, Lampung	City Government of Bandar Lampung	38.00
12	Jatiluhur Water Supply	Ministry of Public Works	189.30
13	Pondok Gede Water Supply	City Government of Bekasi	22.40
14	Surakarta water Supply, Bekasi, West Java	City Government of Surakarta	6.74
15	Southern Bali Water Treatment Facility	Provincial Government of Bali	43.50
16	Maros Water Supply	Municipal Government of Maros	11.50
17	Bandung Solid Waste Management	City Government of Bandung	100.00
18	Surakarta Solid Waste Management	City Government of Surakarta	30.00

\*) already tendered

Source: PPP Books (2011)

Public works investment is one of key government plan to deliver roads, water resources and human settlement infrastructures. Table 6 which illustrates for construction investment and maintenance demand in the Ministry of Public Works for the period of

2010 – 2014 to total IDR 73.59 Trillion; broken into Bina Marga (Roads and Bridges) IDR 21.27 Trillion, Sumber Day Air (Water Resources) IDR 34.53 Trillion, Cipta Karya (Human Settlements) IDR 14.60 Trillion, and Other Public Works IDR 3.18 Trillion. The road construction projects have higher priority funding, then water resources project such as irrigations, dams and river engineering projects. However, the human settlement projects covering sewerages, waste treatments and water supply are also among the prioritised public work projects.

Table 6. Public works investment plan (2010 – 2011) (IDR Trillion)

No	Public Works	YEAR					Total
		2010	2011	2012	2013	2014	
1.	Water Resource	11.468	14.908	19.320	25.125	32.679	103.500
2.	Roads	20.102	24.360	30.033	37.061	45.344	156.900
3.	Human Settlements	9.081	11.033	13.413	15.964	19.509	69.000

Source: Center for Strategic Studies, the Ministry of Public Works (2010)

### 3.2 Construction Companies

According to Law No. 18/1999, construction company consists of consulting and contracting company. Consulting company can be designer and also supervision engineer. Under a new guideline for construction services certification and registration, the number of certified consulting companies was 4,389 firms consisting of 3,280 firms (G1-G2), 824 firms (G3) and 285 firms (G4) and registered by National Board of Construction Services Development (NBCSD) in 2008. In the same year, the number of certified contracting companies was 112,071 firms registered by NBCSD 2008. These contracting companies consist of G1 up to G7 qualification firms. The number of small contracting companies (G1-G3) was 101,293 firms (90%). The number of medium contracting companies (G4-G5) was 10,083 firms (9%) and the big contracting company (G6-G7) is only 695 firms (1%). Of the figure, 263 Contractors already hold ISO-9000.

The number of foreign construction companies has been increasing since a couple of years ago. In this year (2011), the number of foreign contracting companies registered in Indonesia is 128 firms mostly coming from Japan and the number of consulting companies registered in Indonesia is 78 companies, and the number of EPC contractors is 23 companies. The consulting companies are mostly also coming from Japan dan China as well as Korea..

### 3.3 Construction Employees and Workforce

Total number of registered engineers is about 106,283 professional engineers (2008). The following table 7 shows the distribution of certificate held by professional engineers according to their expertise.

Table 7 The Number of Professional Engineer

ENGINEER	QUALIFICATION				TOTAL
	APPRENTICE	JUNIOR	SENIOR	MASTER	
Electrical Engineer	165	5,225	3,869	433	9,692
Landscaping Designer	327	4,423	1,099	213	6,062
Civil Engineer	4,841	58,368	18,182	1,917	83,308
Mechanical Engineer	62	2,282	710	74	3,128
Other	37	253	438	71	799
Architecture	265	1,268	1,497	264	3,294
Total	5,697	71,819	25,795	2,972	106,283

Source: NCSDB (2008). Note: a professional engineer may hold more than one certificate of competence.

The number of workforce working in the construction sector is more than 5 million people in average. The following table 8 shows annual number of construction workers.

Table 8 The number of construction workforce

Year	2006	2007	2008	2009	2010	2011 (february)
Construction Labour	4,697,354	5,252,581	5,547,324	5,858,606	5,590,000	5,580,000

Source: CBS (2009, 2010, 2011)

### 3.4 Construction Cost

Indonesia is a large country with high diversity. It is very difficult to get a standard figure of construction cost across archipelago. In Jakarta, skill worker may have 100,000 rupiahs daily wage while in other regions such as Yogyakarta only 40,000 rupiahs. It is similar to natural material price such as sand and stone. In Central Java where sand and cobble stone are easier to get, the cost of sand is roughly 70,000 up to 90,000 rupiahs for 1 m<sup>3</sup>. It is quite common to buy a truck of sand which is about 2.5 – 3.5 m<sup>3</sup> will cost about 300,000 up to 350,000 rupiahs.

Table 9. Indices of Permanent Workers, Mandays, Wages &amp; Salaries and Value of Construction Sector 2005-2010(Qrt.IV)

Year and Quarter	Permanent Workers	Mandays	Wages & Salaries	Value of Construction
(1)	(2)	(3)	(4)	(5)
2005				
Qrt I	104.75	107.72	108.52	110.85
Qrt II	110.21	109.19	111.53	115.23
Qrt III	102.77	108.71	109.54	114.01
Qrt IV	100.38	110.48	110.46	111.27
2006				
Qrt I	108.27	107.83	110.82	110.01
Qrt II	108.44	105.31	110.80	110.63
Qrt III	100.58	103.74	103.84	105.97
Qrt IV	100.46	112.14	115.97	113.09
2007				
Qrt I	101.59	98.28	97.54	99.92
Qrt II	100.77	100.07	101.10	101.37
Qrt III	102.13	108.57	111.75	112.51
Qrt IV	102.67	107.62	108.80	109.02
2008				
Qrt I	98.69	96.50	97.46	96.93
Qrt II	101.88	114.71	111.67	111.47
Qrt III	102.21	111.00	111.90	111.08
Qrt IV	101.92	109.50	113.40	113.10
2009				
Qrt I	99.99	99.84	99.94	99.78
Qrt II	101.14	107.42	109.14	109.06
Qrt III	101.16	110.16	110.14	110.70
Qrt IV	102.23	108.08	108.24	108.09
2010				
Qrt I	102.18	104.83	101.61	100.35
Qrt II	102.30	102.84	104.24	103.23
Qrt III	101.39	107.30	108.21	108.45
Qrt IV*	101.18	108.68	108.88	109.25

\*) Preliminary figures

Source: CBS (2009)



Table 10. Construction Material Prices (Feb 2009)

Sandclayey for Embankment (per m3)	IDR	175,000
Soil for Embankment (per m3)	IDR	130,000
Sand for Bricklayer(per m3)	IDR	145,000
Sand for Masonry (per m3)	IDR	150,000
Sand for Concrete (per m3)	IDR	195,000
White Sand Bangka (per m3)	IDR	175,000
White Sand Rangkas (per m3)	IDR	170,000
Sandy Gravel (per m3)	IDR	110,000
Gravel 1/2 (per m3)	IDR	150,000
Gravel 3/4 (per m3)	IDR	165,000
Fly Ash (per m3)	IDR	145,000
Boulder (per m3)	IDR	135,000
Sand with gravel (per m3)	IDR	135,000
Biscos (per m3)	IDR	135,000
Gravel (per m3)	IDR	210,000
Stone (per m3)	IDR	130,000
Pressed Brick (Unit)	IDR	413
Normal Brick (Unit)	IDR	303
CEMENT		
Cement by Cibinong (kujang) (50 kg)	IDR	46,000
Cement by Tiga Roda (50 kg)	IDR	46,000
White Cement by Tiga Roda (40 kg)	IDR	62,500
Cement Gresik (50 kg)	IDR	43,550
Cement by Holcim	IDR	44,850
CONCRETE STEEL		
Diameter 6mm (12m)	IDR	21,000
Diameter 8mm (12m)	IDR	32,000
Diameter 10mm (12m)	IDR	49,000
Diameter 12mm (12m)	IDR	64,000
Diameter 16mm (12m)	IDR	110,000

Source: [www.duniarumah.com](http://www.duniarumah.com), accessed Sept 2009

### 3.5 Export & Import of Construction Services

The Indonesian construction has been working overseas since 1980s, particularly led by State Owned Contracting Companies such as Waskita Karya, Adhi Karya, Hutama Karya in Asean and Middle East countries. Although, the construction export is not so progressive, it built confident level among construction companies working overseas. The number of construction companies doing export is still less than foreign companies coming in Indonesia.

Current figure shows that most foreign construction companies in Indonesia come from Japan, followed by US, China and then Europe. The companies come over through loan agreement policy and international competitive bidding particularly in the oil and gas sector, power plant projects and large infrastructure projects under loan or grant agreement.

**REFERENCES**

1. Central Berau of Statistic (2011), Economic Indicators, Jakarta
2. Central Berau of Statistic (2010), Economic Indicators, Jakarta
3. Central Bank of Indonesia (2009), Annual Report of National Economy, Jakarta
4. Central Bank of Indonesia (2010), Annual Report of National Economy, Jakarta
5. Central Berau of Statistic (2007), Economic Indicators 2007, Jakarta, Indonesia, June, 2007
6. Mulyo, SS & Abidin, IS (2007), Construction Market in Indonesia, Japan - Indonesia Seminar II, Department of Public Works, Republic of Indonesia, Jakarta.
7. Public Works Department (2008), Program and Target Development, Jakarta
8. Suraji, A (2007), The Indonesian Construction 2030, National Construction Services Development Board, Jakarta
9. Wuryanti, W (2005) Cost Index Component of Reinforce Concrete & Composite for Building Construction (in Indonesian), Seminar, Institute for Research & Development, Ministry of Public Work, Jakarta.