

2001. 2.

**한국건설산업연구원**

IMF

.

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가

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가

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가

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가

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가

가

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가

가

가

가

2001 2

李建榮

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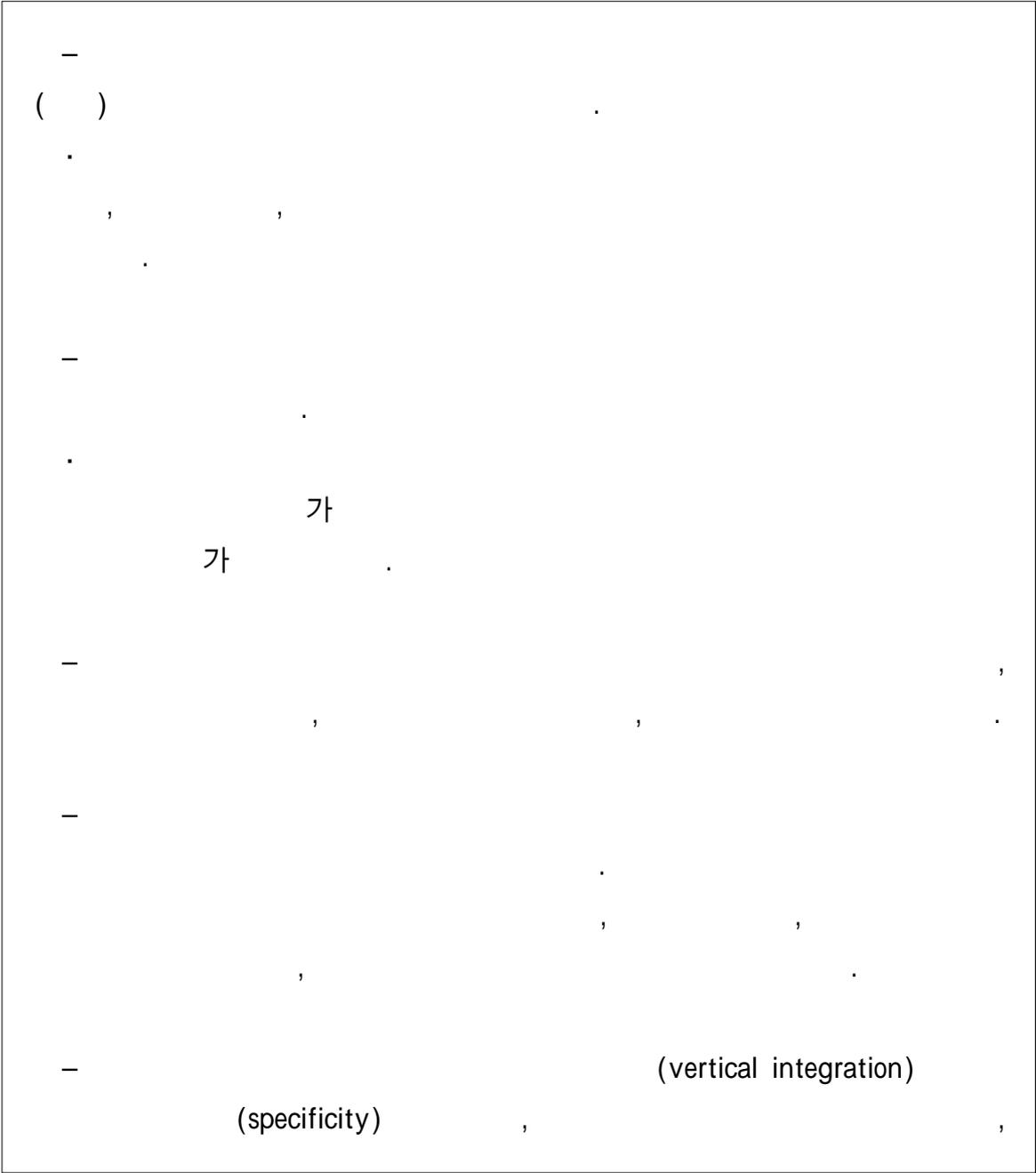
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2.	.....	2
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< -11>	100	.....	20
< -12>		.....	21
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< -15>	400	.....	37
< -16>	600	.....	40
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가 , (post-  
contract bilateral monopoly)

- , (efficiency) (flexibility)

- (rent-seeking  
activity) 가

- (GC : General Contractor),  
(SC : Specialty Contractor), (AE : Architect-Engineer)  
Design-Build, CM  
EC(Engineer-Contractor), EAC(Engineer-Architect-Contractor),  
CM(Construction Management)

-

-

-

-

가

가

-

가  
가

(optimal business boundary)

.

.

가

-

(A : Architect),

(CE : Consulting-Engineer),

(AE : Architect-Engineer),

(EC : Engineer-Contractor)

EC,

(GC : General Contractor),

(SC : Specialty

Contractor)

.

AE, EAC(Engineer-

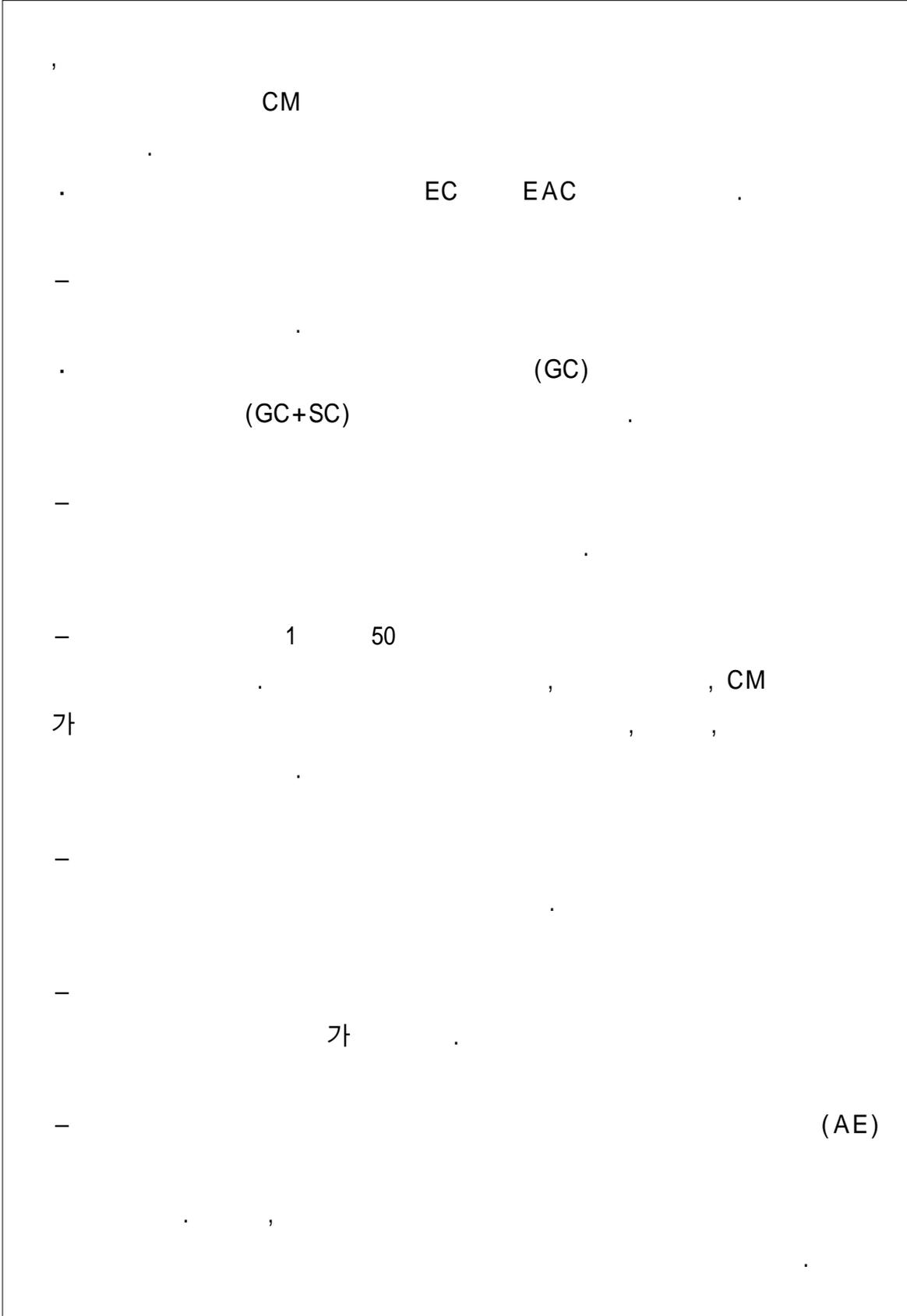
Architect-Contractor), AC(Architect-Contractor), GC+SC

-

, GC A

-

EC



# I 서론

1

, CM

가

, 가  
가

가

가

가

가

activity)가  
가 (rent)가  
가 , 가  
가 (rent-seeking)

2

가 가  
가 가  
가 가  
4 가 가 (feasible)

가 가  
가 가

## II. 건설업역의 제도와 현황

1

(1)

. < -1>  
가 .  
「 」  
「 」( ) , 「 」( ) , 「 」  
「 」( ) 가  
「 」( ) , 「 」( )  
「 」( ) , 「 」( )  
)  
1990  
「 」 , ,  
가 가

(2)

1958

「 」

1996 「 」

1958

, ,

7

< -1 >

		「 가 」 「 」	
		「 」 「 」 「 」 5 ( ) 「 」( )	
		「 가 」 「 」	
		「 」 「 」 「 」 5 ( )	
		「 가 」 「 」	
		「 가 」 「 」	
		「 가 」 「 」	
		「 가 」 「 」	
		「 가 」 「 」 5 ( ) 「 」	
		「 가 」 「 」	

: 「 」, 「 」, 1998.

가 1962 , , ,  
 . 1971 가 .  
 1975  
 20 . 1982  
 , 1994  
 .  
 1996 「 」 「 」  
 . 1999 1  
 가 29 가 5  
 .

(3)

「 」 .  
 . . . .  
 , , , 가 .  
 . 가 .  
 .

1)

「 」 .  
 , 5 . 「 」 가  
 ( 「 」 12 1 ) , ,  
 , 가 , 7  
 ( 「 」 15 ) . 「 」

가  
 (「 16 2 」).  
 「 」  
 , 1  
 20 30 20/100 , 1  
 30 30/100  
 「 」

2)

29  
 가  
 (「 16 3 」).

3)

「 」  
 가  
 「 」  
 , , 3가  
 18  
 「 」 가

(「 23 8 ).

4)

1994

가 100

( )

「 」

가

(「 」 51 1 ). 「 」

가

5)

「 」 「 」 「 」

(「 」 4 1 ). 「 」

가

(「 」 23 1 )

(「 」 23 4 ).

1).

가

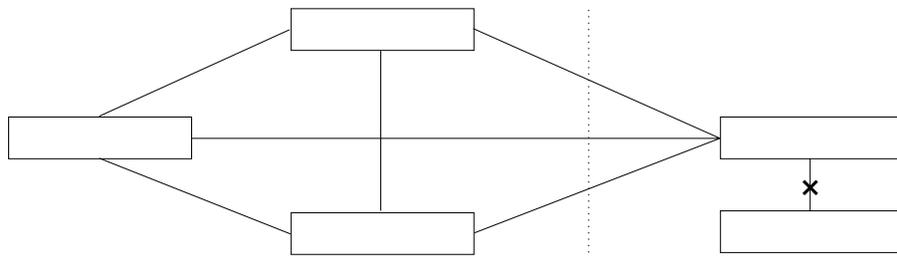
1)

가

(4)

「 」 . < -1>

< -1>



x :  
:  
:

가

가

2

(1)

1999 1,000 가 1999 5,144

. IMF

가

가

. 1999

47 1997 63%

1997 192 1999 92

< -2>

1995	3,195	1,416	454	1,207	-	118	2,966
1996	3,931	1,506	830	1,471	-	124	3,543
1997	4,360	1,688	970	1,478	78	146	3,896
1998	4,803	1,853	1,295	1,267	143	245	4,198
1999	6,020	2,394	1,596	1,471	199	360	5,144

< -3>

( : )

	1995	1996	1997	1998	1999
	165,015	216,281	271,447	219,264	202,824
	404,085	459,271	453,515	236,743	253,874
	6,962	11,937	24,276	14,793	14,978
	576,062	687,489	749,238	470,800	471,676

1997

1999 20 2,824

가 1980

가 , ,

1997

1998

1999

가

가

가

1999

47.8%

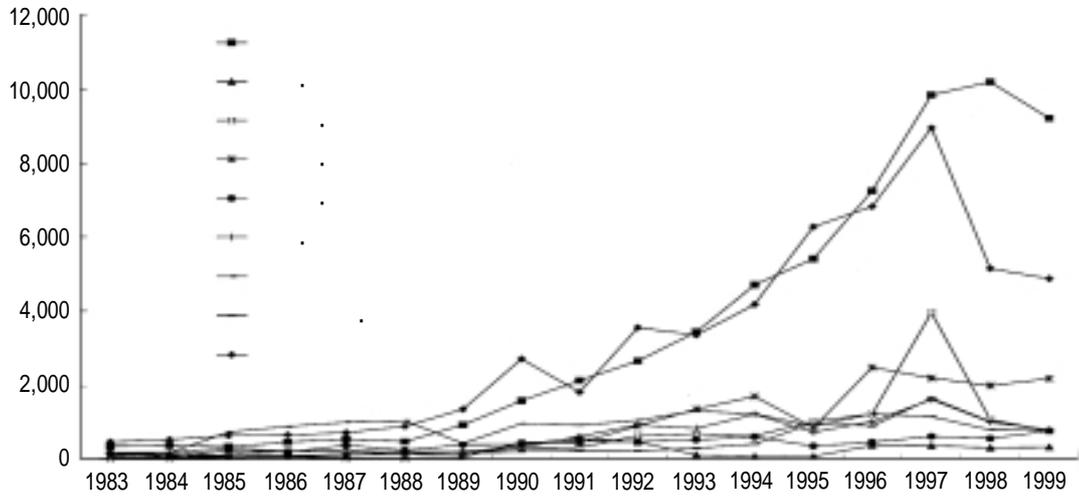
1989

IMF

1998

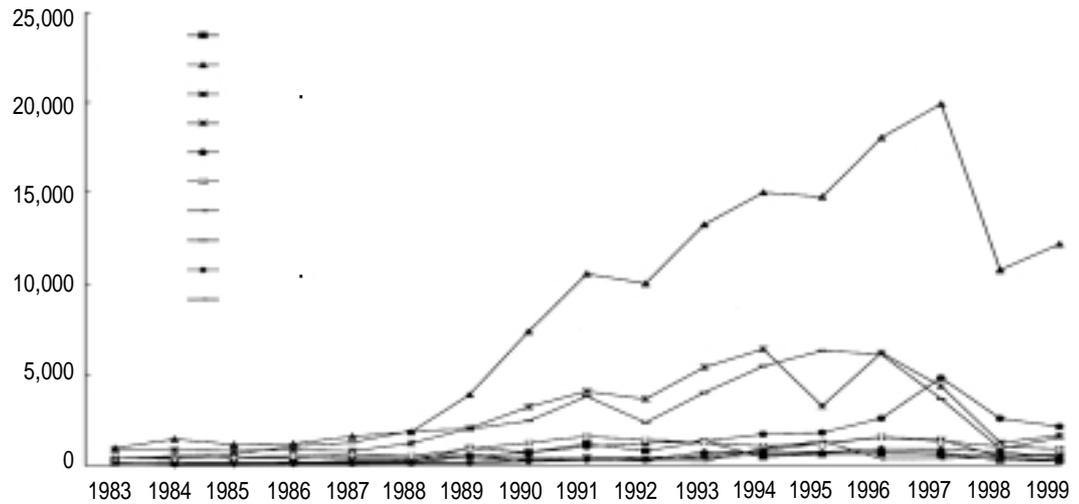
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( : )



< -3>

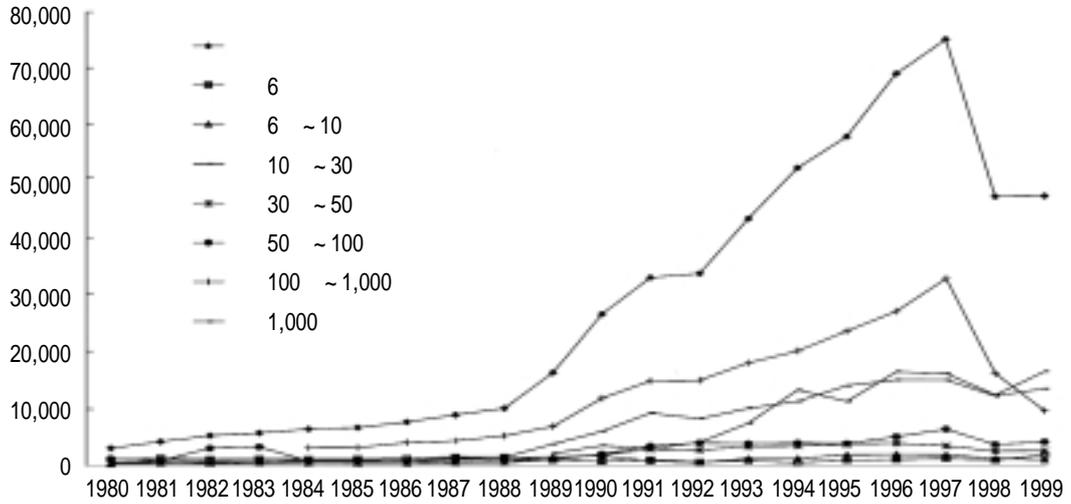
( : )



1,000 가 10 ~ 30 , 100 ~ 1,000 ,  
 IMF 가 100 ~ 1,000 가 82% 가  
 IMF 가  
 10 ~ 30 1,000 가

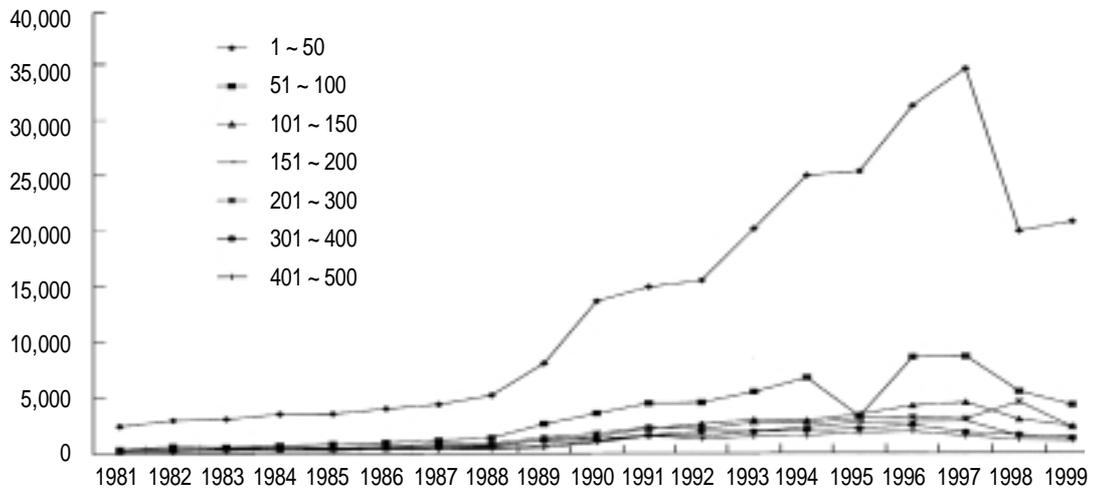
< -4>

( : )



< -5>

( : )



IMF

, 1 ~ 50

가

IMF

50

(2)

1999  
1997 1.61  
1999 2.24  
1997 2 5,620  
1997 30 5,716  
12% 가  
가  
가  
82%

< -4 >

	1995	1996	1997	1998	1999
	18,933	21,161	22,822	24,748	25,620
	28,254	31,726	36,760	43,895	57,310
	1,596	1,732	1,845	1,808	2,152
	4,422	4,990	5,855	7,085	9,049
	1,132	1,230	1,418	1,595	1,961
	550	658	839	1,601	2,542
	1,061	1,164	1,351	1,570	1,920
	184	189	222	252	309
	444	570	765	1,018	1,452
	1,396	1,444	1,533	1,506	1,673
	115	129	129	134	145
	6,498	7,551	8,989	10,708	13,284
	2,178	2,395	2,700	3,146	3,972
	3,110	3,288	3,537	3,681	4,954
	2,165	2,453	3,139	4,656	6,266
	654	753	897	1,049	1,228
	12	30	40	51	56
	828	910	1,050	1,304	1,501
	160	203	250	305	377
	307	370	446	570	797
	410	465	532	611	774
	310	377	413	432	487
	343	430	506	514	549
	185	186	170	158	152
			114	115	118
				6	6
			20	20	21
					1,224
	194	209			341

: 1995, 1996, 1999 ; 1999 ;

	1997		1998		1999	
	2,181,302	5.9	1,511,519	4.8	2,014,867	6.6
	7,110,924	19.1	6,227,225	19.7	5,702,526	18.7
	1,771,680	4.8	1,520,714	4.8	1,372,805	4.5
	566,811	1.5	518,346	1.6	637,007	2.1
	799,560	2.1	606,902	1.9	675,133	2.2
	295,241	0.8	245,503	0.8	183,690	0.6
	707,593	1.9	529,017	1.7	525,569	1.7
	1,437,335	3.9	1,406,039	4.5	1,275,002	4.2
	152,797	0.4	128,737	0.4	149,980	0.5
	8,929,884	24.0	8,094,223	25.6	7,009,394	22.9
	1,648,782	4.4	1,384,173	4.4	1,529,861	5.0
	5,204,401	14.0	4,037,036	12.8	3,856,153	12.6
	1,182,957	3.2	1,136,955	3.6	1,179,440	3.9
	680,226	1.8	517,390	1.6	447,499	1.5
	116,414	0.3	71,748	0.2	69,443	0.2
	801,103	2.2	701,070	2.2	774,786	2.5
	419,133	1.1	315,228	1.0	381,299	1.2
	497,629	1.3	440,251	1.4	553,771	1.8
	182,711	0.5	173,384	0.6	205,683	0.7
	341,344	0.9	223,006	0.7	241,226	0.8
	1,036,701	2.8	754,334	2.4	731,844	2.4
	82,862	0.2	76,493	0.2	60,122	0.2
	900,992	2.4	780,874	2.5	344,715	1.1
	-	-	109	0.0	3,617	0.0
	145,835	0.4	169,609	0.5	192,828	0.6
	184,957	0.5	-	-	75,799	0.2
	-	-	-	-	377,519	1.2
	37,194,231	100.0	31,569,896	100.0	30,571,592	100.0

가 1997 62%

29

가 1999

32 : 68 , 1999

10

< -6>

(1985 ~ 99 )

( : , , %)

1985	80,280	2,227,116	100.0	49,407	896,065	40.2	30,873	1,331,051	59.8
1986	87,533	2,426,844	100.0	56,614	1,030,206	42.5	30,919	1,396,638	57.5
1987	97,411	2,940,077	100.0	63,826	1,298,506	44.2	33,585	1,641,571	55.8
1988	98,634	3,755,907	100.0	65,109	1,631,978	43.5	33,525	2,123,929	56.5
1989	103,045	5,231,802	100.0	68,643	2,286,615	43.7	34,402	2,945,187	56.3
1990	118,681	8,072,841	100.0	81,638	3,557,644	44.1	37,043	4,515,196	55.9
1991	132,859	11,836,569	100.0	90,219	4,874,308	41.2	42,640	6,962,261	58.8
1992	145,900	13,662,345	100.0	99,443	5,862,452	42.9	46,457	7,799,893	57.1
1993	216,034	17,630,674	100.0	140,789	7,040,393	39.9	75,245	10,590,280	60.1
1994	241,953	22,564,535	100.0	158,672	9,148,056	40.5	83,281	13,416,478	59.5
1995	297,751	28,581,863	100.0	191,735	10,833,642	37.9	106,016	17,748,220	62.1
1996	334,498	35,167,186	100.0	217,022	12,670,154	36.0	117,476	22,497,032	64.0
1997	325,808	37,194,231	100.0	212,516	12,384,423	33.3	113,292	24,809,808	66.7
1998	291,935	31,569,896	100.0	193,167	9,066,635	28.7	98,768	22,503,261	71.3
1999	332,353	30,495,793	100.0	223,600	9,679,652	31.7	108,753	20,816,141	68.3

(3)

2000 . 8

673

1997

17% 가

< -7>

1995	60	50	156	266
1996	87	62	202	355
1997	172	79	305	575
1998	217	86	354	680
1999	232	101	319	681
2000 . 8	232	110	302	673

1996

. 1999

7,932

1996

52%

가

가

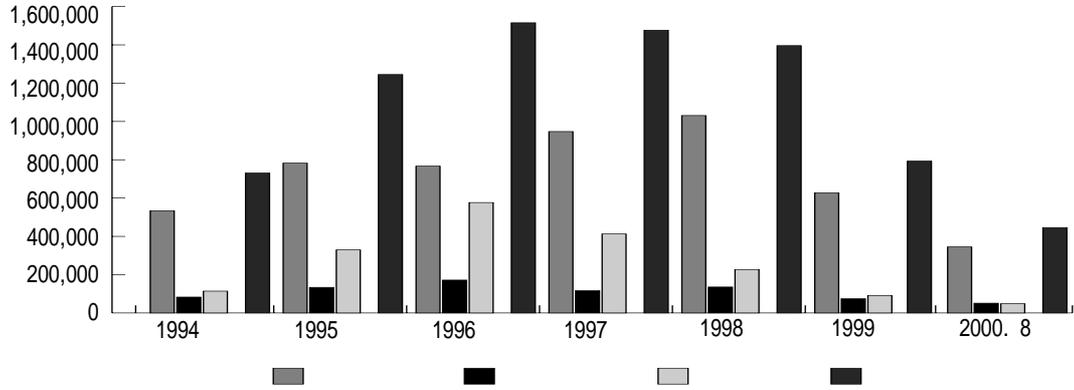
1999

79%

1996

< -6>

( : )



(4)

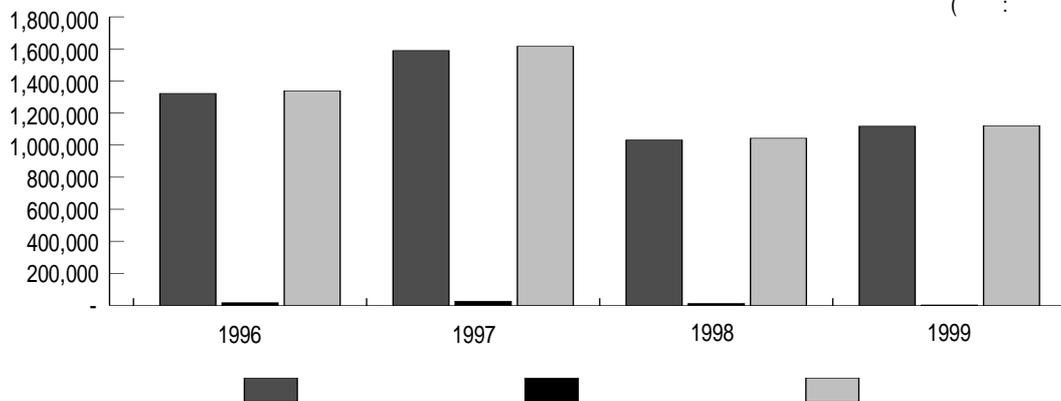
2000.8 813 1997 30% 가  
가 1997  
1999 7.4% 가 1 1,200

< -8>

Year	Series 1	Series 2	Series 3	Series 4
1996	327	89	75	491
1997	411	124	92	627
1998	491	109	84	684
1999	551	164	81	796
2000.8	579	170	64	813

< -7>

( : )



, 1997 (69.3%) .

(5)

( ), ( ), ( ) 가  
 가 74.6%

< -9 >

	( )	( )		
1995	3,225	558	18	3,801
1996	3,676	969	15	4,660
1997	3,781	1,343	13	5,137
1998	3,908	1,424	13	5,345
1999	4,407	1,495	15	5,917
2000 7	4,717	1,591	15	6,323

(6)

CM 36 , 42 ,  
 , , , CM

3

1975 4 「  
 」 . 1996 12  
 가 「 , 1999 4 「 」

(project delivery method)

(alternative proposals), (design-build),  
 (construction management), BTO(Build Transfer Operate),  
 ROT(Rehabilitate Operate Transfer), BLT(Build Lease Transfer), BOO(Build  
 Own Operate), BOT(Build Operate Transfer)

가 ( ) ,

(1) ( )

( ) 1977 ,

< -10> .

		( )	
1976	12		2
1977	11	1(9.1%)	
1978	13	1(7.7%)	1
1979	11		
1980	182	1(0.5%)	
1981	143	9(6.3%)	2
1982	156	11(7.1%)	1
1983	63	7(11.1%)	2
1984	97	29(29.9%)	2
1985	101	4(4%)	2
1986	104	4(3.8%)	7
1987	96	5(5.2%)	16
1988	83	4(4.8%)	3
1989	282	6(2.1%)	5
1990	323	8(2.5%)	3
1991	370	8(2.2%)	27
1992	490	36(7.3%)	13
1993	256	21(8.2%)	6
1994	360	41(11.4%)	18
1995	542	66(12.2%)	11
1996	557	85(15.3%)	14
1997	493	139(28.2%)	12
1998	298	58(19.5%)	4
1999	231	45(19.1%)	

: ( ) 가

< -11> 100

( : , %)

2000	68	2,591,270	100.00	56	2,017,699	77.87	10	492,534	19.01	2	81,036	3.13%
1999	141	6,757,358	100.00	111	4,455,937	65.94	30	2,301,421	34.06	0	0	0.00%
1998	149	7,268,216	100.00	123	5,695,242	78.36	26	1,572,973	21.64	0	0	0.00%
	358	16,616,845	100.00	290	12,168,879	73.23	66	4,366,929	26.28	2	81,036	0.49%

1990 가  
 가 1997 28.2% IMF  
 1999 100  
 가 19% < -10>  
 < -11>

(2)

CM 「 」  
 가 가  
 가  
 , CM , , CM  
 , CM , 가 < -12><sup>2)</sup>

(3)

1999 4 「 」  
 SOC ~ ( 가  
 ~ ) , , 2000 12

2) 「 」 , 1999. 9.

CM	( ) ( )	( ), , ICT	, - Corp.,	POS-A.C,	Eng., ,	POS-A.C.,	POS-A.C.,
			1998. 9 ~ 2002. 4	1998.11 ~ 2002. 3	1998.12 ~ 2002. 4	1999. 1 ~ 2002. 4	1999. 1.22 ~ 2001. 4.21
			43 60,000	21 7,968 8,000	24 700	21 8,130	15
	+	+	+	+	+	+	+
	(	(	+	+	+	+	+
	)	)	+	+	+	+	+
			+	+	+	+	
CM	.	.	.	.	.	.	.
CM	.	.	. FIFA	. FIFA	. FIFA	. FIFA	. 가
	CM		.				
가	. : 가 . : 가	. : 가	. : 가	. : 가	. : 가	. : 가	. : 가

1999 5  
2000 10 24 <sup>3)</sup>.  
가

3) , “ SOC . ” 「 , 2000. 11.

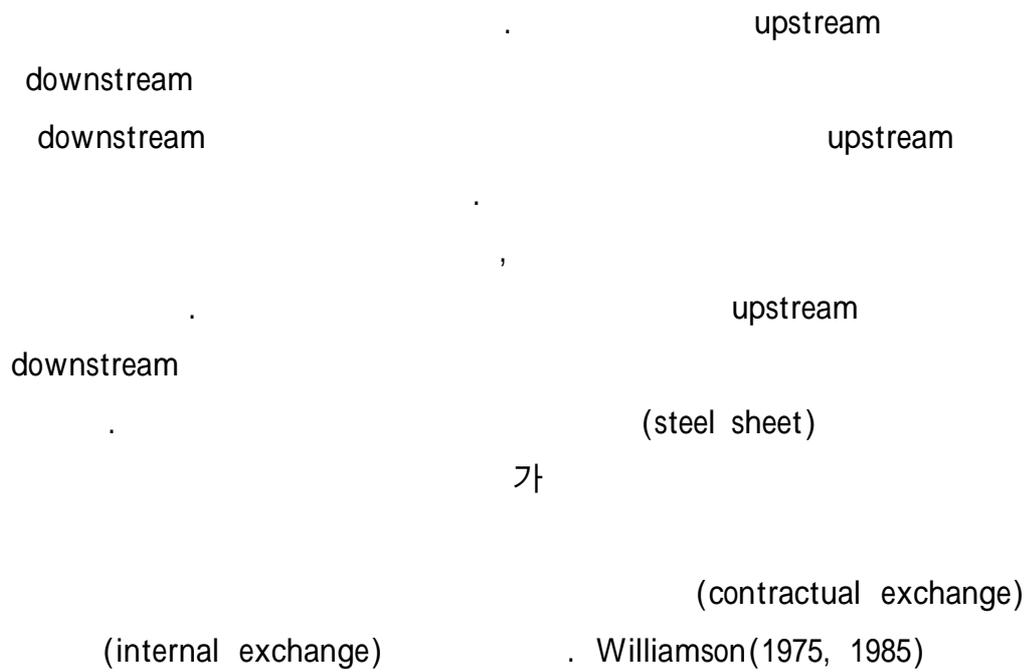
가  
, 가 ,  
.  
.  
가 가  
.

### III. 건설업역 자유화 논의의 이론과 배경

1

(1)

가



가  
 (governing)  
 (market exchange)  
 가  
 가 , ,  
 가 , , 가  
 (take-or-leave-it)  
 (anonymous spot market)  
 가  
 가  
 (asset specificity) upstream downstream  
 가 가 (value of  
 exchange)가 가 가  
 4).  
 가 5)(appropriable quasi-rent)  
 (Klein, Crawford, and  
 Alchian(1978). 가  
 가  
 (opportunistic) Goldberg(1976)  
 ‘ (hold-up) ’ 가  
 , 가

4) specific physical capital, specific human capital, site specific capital, brand name capital

5) 가 가

(indexing) , cost-plus ,

가

가

가

6).

7).

(2)

가

(improved coordination)

(rent)

가

가

(rent)

가

downstream

upstream

가

가

6) Riordan and Williamson(1985)  
7) Helfat and Teece(1987)

가 , 가  
 가 ,  
 (market procurement) 가 .  
 .  
 .  
 가 가  
 .  
 , .  
 , 가 가,  
 . (corporate culture)

(3)

,  
 , , .  
 .  
 (coordination)  
 . rent가  
 가 가 가 rent  
 .  
 가  
 , , 가 , ,  
 .  
 (post-contract bilateral monopoly)

가 . Winch(1988)

(efficiency)

(flexibility)

가

(bureaucratic inertia)

(rent-seeking activity)

가

가

1)

가 가 rent

가

( :

),

가

(general contractor)

(specialty

contractor)

(in-house production)

가

가  
 「 」 29  
 (2001)  
 (market)

< -13> 8)

	.	,	,	,	,	,	,	A	II
								B	I
								B	I
	.	,	,	,	,	,	,	A	II
								A	II
								A	II
								A	II
								A	II
	.	,	,	,	,	,	,	B	I
								B	I II
								B	I
								B	II
								B	II
								B	I
	.	,	,	,	,	,	,	A	II
								A	II
								A	II
								A	II
	.	,	,	,	,	,	,	A	II
								A	II
								AB	II
								A	II
								AB	II
								AB	II
								AB	II
								AB	II

8) ) ( : ( ), ( , , ), ( 가 ),  
 AB( , ) : A( ), B( ),  
 ( ) : ( ), ( )

(specificity)  
contract)

(long-term

가

가

가

가

가

가

가

가

< -14>

	(labor contract)	(long-term contract)	(market)
	가		P/C, 가

: 「 」, 2001.

2)

가

가

가

가

3)

(design)

AE(Architect Engineer)

ENR(Engineering News Record) 가 500

가 AE

174

AE

가 AE

가

가

4)

Design-Build

CAD

가

## 2 (rent-seeking activity)

	(rent)	(quasi-rent)		
가	(quasi-rent)	가	가	(average
variable cost)		가		(average total

9)

cost) <sup>9)</sup> (utility industry)

가 (regulatory process)

seeking activity) 가 (rent-seeking activity)

(social gains) (DUP : Directly Unproductive Profit Seeking) ’

(influence costs) 가 가 가

(entry barrier) 가

가 (art) 가 가 가

가

3

(1)

1984

(MFJ : Modified Final Judgement)

가 AT&T

AT&T  
Companies)  
AT&T

(BOC : Bell Operating

AT&T 가

, 1990

가

가

가

BOC

가

(one-stop shopping)

AT&T

가

1996 「 」  
가  
1996 「 」 가  
가

TV

(2)

가

(universal banking)가

1933

가 .  
가 . 가  
가 , 가  
가 .  
가  
1990 ,  
「 」 가 ,  
(in-house)  
가 .  
가 .  
가 .

# IV. 미국의 건설업역 실태

1

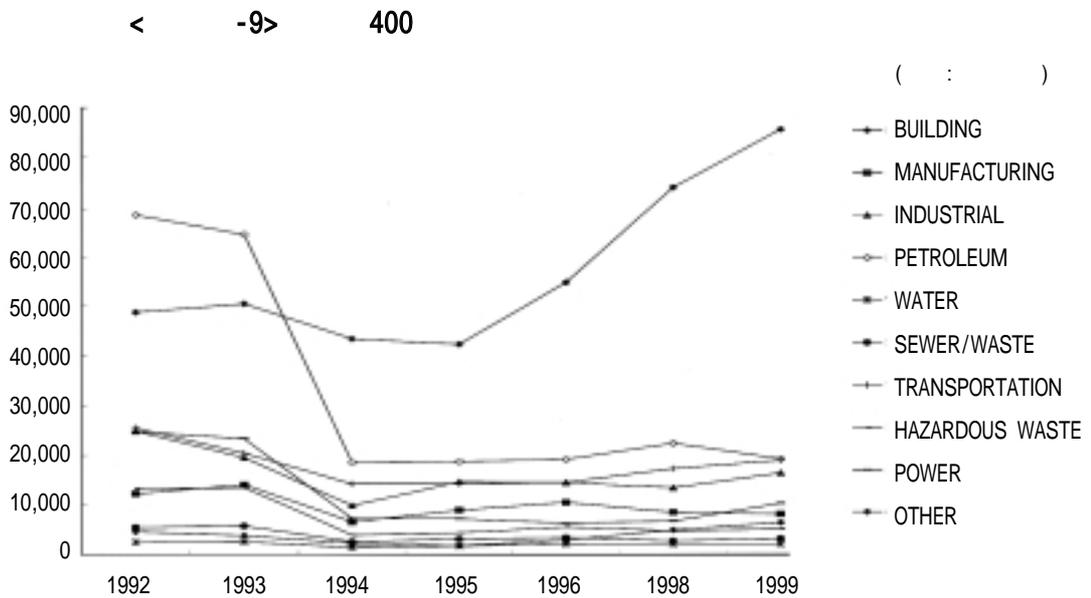
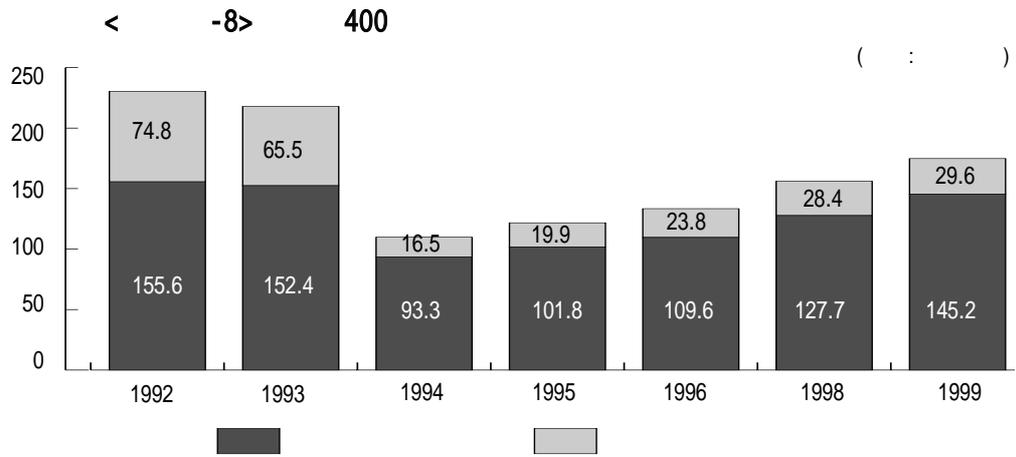
ENR(Engineering News Records)

가

A (Architect), E (Engineer), EC (Engineer-Contractor), CE (Consulting-Engineer), AE (Architect-Engineer)

(1)

ENR 가 400  
(general contractor) < -8>  
1994 가  
1999 1,748  
< -8> < -9>  
. < -9> 1996 가  
, 1995  
2000 49%,



11%, 11%, 9.3%, 5.7%,  
 4.5%, 2.9%, 1.8%,  
 1.2%

400

. 400

1992 1999 50%

< -15> . < -15>

1992 1999 50%

400 87%

< -15> 400

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE		
1992	221	9	7	11	33	52	6	352	88%
1993	235	11	7	5	28	49	8	343	86%
1994	226	10	6	13	28	57	6	346	87%
1995	231	14	4	8	34	53	8	352	88%
1996	234	13	3	10	32	50	7	349	87%
1998	264	5	3	1	29	48	5	355	89%
1999	262	5	5	4	26	48	2	352	88%
	60%	2%	1%	2%	8%	13%	2%	87%	87%

: 50%

400

50

가

가

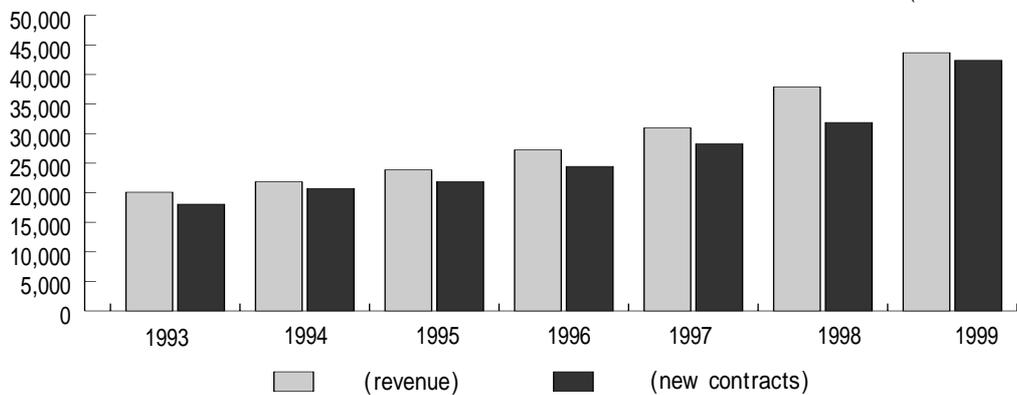
(2)

ENR 가 600

(specialty contractor)

< -10>

< -10> 600



ENR 600 1993 200 8,400 1999 436  
 8,400 118% 가 . 24%

가

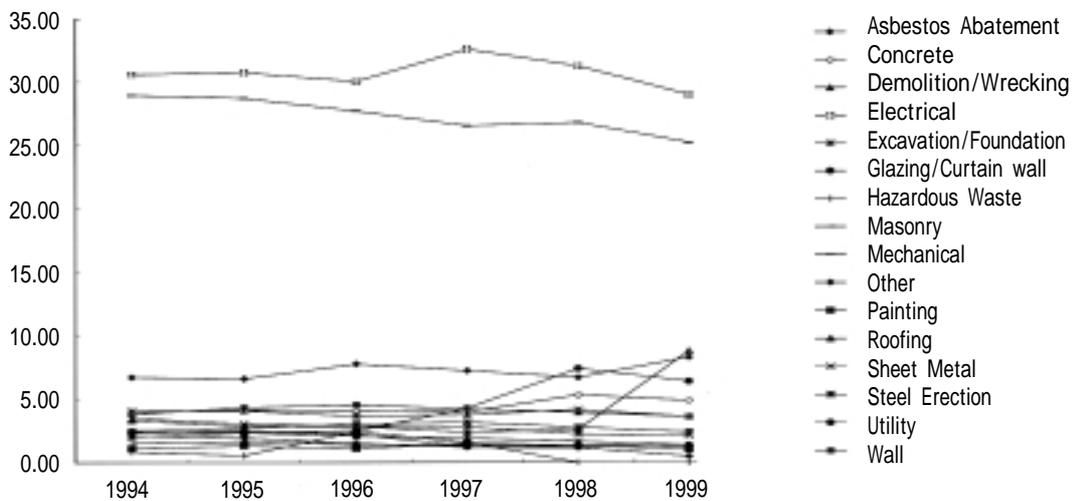
28 asbestos abatement, concrete, demolition/wrecking, electrical, excavation/foundation, glazing/curtain wall, hazardous waste, masonry, mechanical, other, painting, roofing, sheet metal, steel erection, utility, wall 15

1994 1999

< -11>

< -11> 600

( : %)



< -11> asbestos, glazing/curtain wall, mechanical, sheet metal, demolition/wrecking concrete, roofing, utility 가 . 1999

electrical 28.98%, mechanical 25.21%, roofing 8.77%, utility 6.39%, concrete 4.89%, wall 3.62%, excavation/foundation 3.61%, steel erection 2.42%, sheet metal 2.13%, glazing/curtain wall 1.39%, demolition/wrecking 1.39%,

masonry 1.33%, painting 1.06%, asbestos abatement 0.52%

electrical mechanical 50%

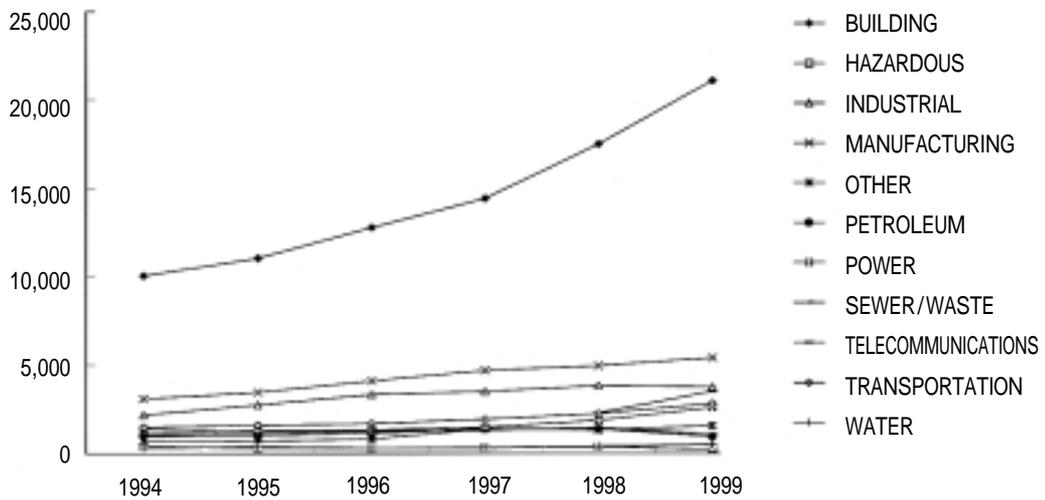
1994 1999 < -12>

12> . < -12>

가 가 가 ,  
가 . 가 .

< -12> 600

( : %)



ENR 가 600

mechanical sheet metal 가

600 31 가 , mechanical electrical

가 15 .

mechanical electrical, mechanical sheet metal

CM for Fee

가 가

< -16> 600

	A	C	D	E	X	G	MA	M	O	P	R	SH	ST	U	W	
A	5								5	2						12
C		28		1	2		2	1	2				1			37
D			21		1											22
E				129				15	3					5		152
X					26			2	6				1			35
G						20	1					1	2	8		32
MA							17				1				1	19
M								108	5			31		3		147
O									28	4	1	2	1	2	3	41
P										18		1				19
R											16				1	17
SH												7				7
ST													21			21
U														11		11
W															28	28
	5	28	21	130	29	20	20	126	49	24	18	42	26	29	33	600

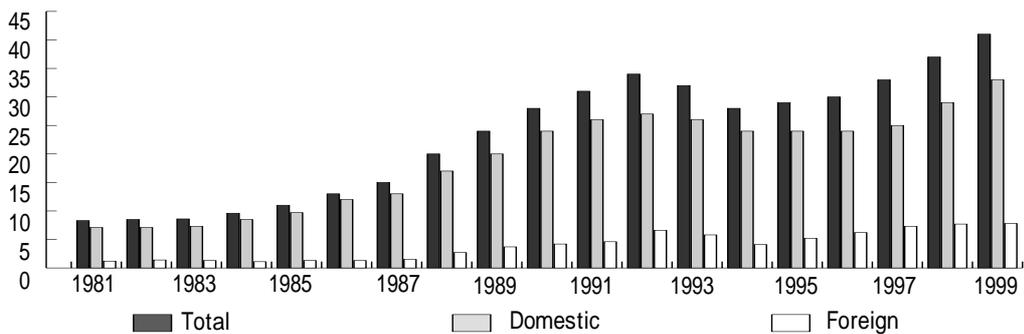
: A(Asbestos Abatement), C(Concrete), D(Demolition/Wrecking), E(Electrical), X(Excavation/Foundation), G(Glazing/Curtain wall), MA(Masonry), M(Mechanical), O(Other), P(Painting), R(Roofing), SH(Sheet metal), ST(Steel erection), U(Utility), W(Wall)

(3)

(design firm) ENR 가 500 1981 1999 <

< -13> 500

( : )



-13> ENR 가 500 410

ENR 가 500 EC(Engineer-Contractor), EA(Engineer-Architect), CE(Consulting-Engineer), AE(Architect-Engineer), A(Architect)

< -17> < -17> EC  
 1988 EA CE  
 , 1989 EC . 1999  
 EC 49%  
 CE EA EC 가  
 A

< -17> 500

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
EC								25	30	37	42	51	48	36	45	43	47	48	49
EA	46	44	45	40	52	49	46	33	21	17	16	15	15	18	17	19	19	18	16
CE	31	43	29	26	30	25	29	24	24	28	29	23	26	33	26	25	21	20	20
AE	17	10	19	24	11	15	15	11	11	12	8	8	8	9	9	9	9	9	8
A	6	3	7	7	4	6	7	5	4	4	3	2	2	3	2	3	3	3	5
Other				3	3	5	3	2	10	2	2	1	1	1	1	1	1	2	2

< -13> , , /  
 , , , , ,

< -18> < -18> , ,  
 가 , ,  
 . 1999 /

22%, 20%, 17%, 13%, 8.6%,  
 7%, 5.1%, 3.3%

< -17> < -18> ENR 가 500

500 1999 50%

< -18> 500 .

	1992	1993	1994	1995	1996	1997	1998	1999
General Building	12	13	16	15	17	17	19	20
Mfg. Plants	5	4	4.7	5	5.3	5.4	3.6	3.3
Industrial/Petroleum	26	27	21	23	24	24	25	22
Water Supply	3	4	4.3	4.6	4.9	4.5	4.6	5.1
Sewer/Waste	5	6	8.2	7.9	8.7	8.9	7.2	7
Transportation	12	13	15	15	15	15	16	17
Hazardous Waste	19	18	20	18	15	14	14	13
Power	13	10	6.8	6.6	5.6	6.5	6.5	8.6
Other	4	5	4.7	4.5	4.5	4.5	4	4.8

< -19> 500 .

		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petro.	Transportation	Haz. Waste	
1999	1 ~ 50	2	0	5	0	0	13	5	3	28
	51 ~ 100	15	0	1	0	2	5	9	3	35
	101 ~ 150	16	1	0	0	2	3	5	6	33
	151 ~ 200	13	0	1	1	1	4	7	2	29
	201 ~ 250	21	0	1	1	0	4	6	1	34
	251 ~ 300	13	0	0	0	1	4	10	0	28
	301 ~ 350	23	0	1	0	0	3	8	0	35
	351 ~ 400	25	0	1	0	1	4	6	0	37
	401 ~ 450	18	0	0	0	0	2	5	1	26
	451 ~ 500	22	1	0	0	0	3	1	1	28
		168	2	10	2	7	45	62	17	313

: 50% 1999

< -19> . < -19>

1999 50% 500

63% , /

가 EC

EC

A, AE, CE

. A, AE, CE

가

2

ENR 가 100 design-build firms, CM for fee firms, CM at risk firms < -20>, < -21>, < -22> . design-build, CM for fee, CM at risk 가 . 1999 design-build 504 . < -20> 100 design-build firm

( : )

	Total	Domestic	International
1999	50,381.9	29,363.1	21,018.8
1998	40,062.6	22,526.7	17,535.9
1997	39,379.8	21,194.2	18,185.6

< -21> 100 CM for fee firm

( : )

	Total	Domestic	International	Firm Type				
				EC	C	CM	D	ENV
1999	7,208.2	4,928.1	2280.1	23	37	18	22	
1998	7,121.7	4,212.9	2908.8	28	38	16	18	
1997	5,119.5	3,537.0	1582.5	26	36	17	19	2

< -22> 100 CM at risk firm

( : )

	Total	Domestic	International	Firm Type			
				EC	C	EAC	CM
1999	38,542.9	34,333.6	4209.3	21	79	0	0
1998	35,384.7	31,173.2	4211.5	19	77	3	1
1997	29,733.1	26,297.3	3435.8	19	81	0	0

ENR 가 100 CM for fee CM for fee  
 1999 72 , GC 37%, EC 23%, D  
 22%, CM 18% .  
 CM at risk 1999 385 ,  
 GC 79%, EC 21% GC .  
 GC(General Contractor), SC(Specialty Contractor),

AE(Architectural & Engineering) 3가 , design-build, CM for fee, CM at risk

EC(Engineer-Contractor), CM(Construction Management), ENV(Environmental Firm), EAC(Engineer & Architect-Construction)

GC(General Contractor), SC(Specialty Contractor), AE(Architectural & Engineering) 3가 , design-build, CM for fee, CM at risk

EC(Engineer-Contractor), CM(Construction Management), ENV(Environmental Firm), EAC(Engineer & Architect-Construction)

GC(General Contractor), SC(Specialty Contractor), AE(Architectural & Engineering) 3가 , design-build, CM for fee, CM at risk

# V. 건설시장 구조 전망과 기업의 전략

1

(1)

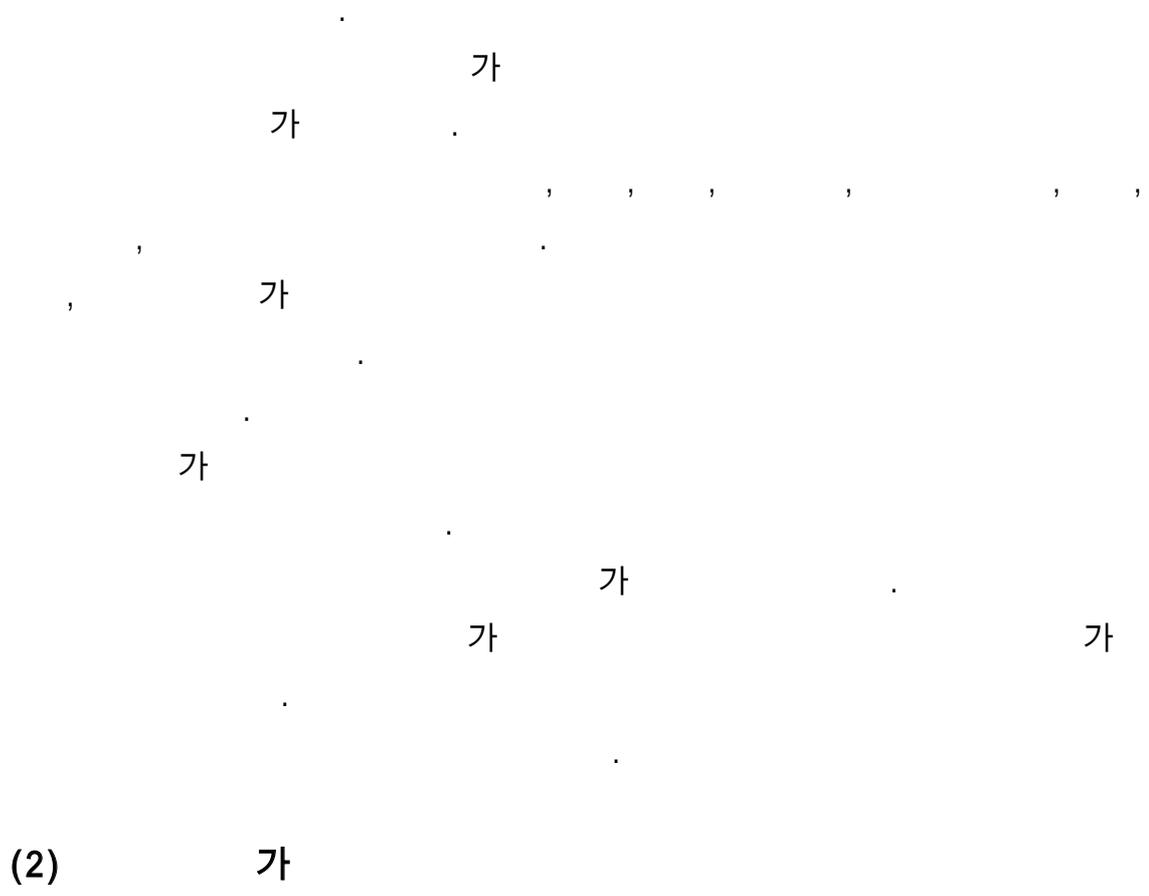
(post-contract bilateral monopoly)

Winch(1988)  
(efficiency) (flexibility)

(coordination)

rent가 가 가 가  
가 rent 가 가

가



(GC : General Contractor), (SC : Specialty Contractor), (AE : Architect Engineer)  
 design-build, CM EC(Engineer Contractor),  
 EAC(Engineer Architect Contractor), CM(Construction Management)

(EC) (CE), (AE),  
 (A)

Design-Build

가

가

가

GC가

Design-Build

EC가

CM-at-

Risk

GC

79%

CM for fee

GC, EC, D(Design), CM

ENR 가

400

가 1

가

(ENR

600

)

2

가

가

(EC)

가

가

가

(3)

1)

가

가  
33 (11%), 28 (9.35%)  
20  
30 22 , 가 6 ,  
5  
22 , 가 5 , 1  
( , , )  
( , , CM ),

2)

가.

< -14 >

( : %)

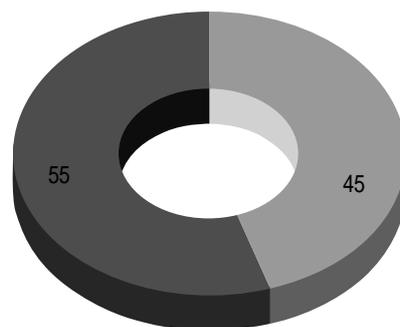
(33 )

25 ,

21

20 ,

7



(15 ) 45%

73%

(3 ) , 1

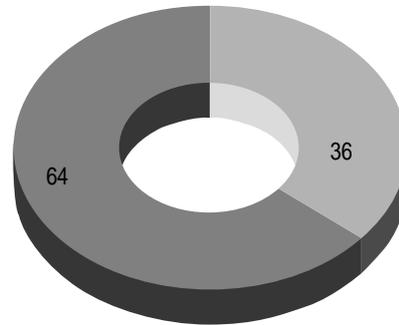
< -23>

(15 )	73%(11 )	27%(4 )
-------	----------	---------

< -15>

( : %)

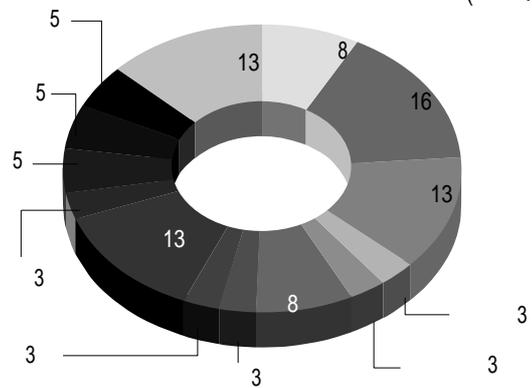
36%



(6),  
 (5), (4), (4),  
 (3),  
 (2), (2),

< -16>

( : %)



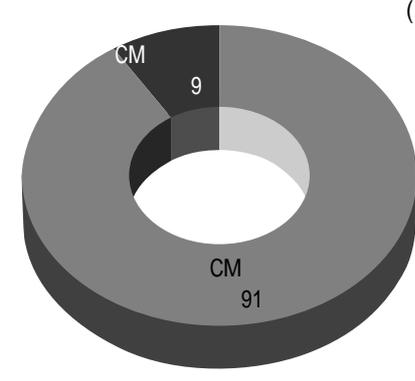
( 1)  
 4  
 (55%) . 1999

18.7%,

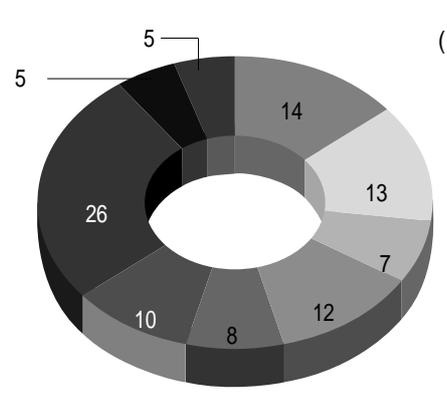
22.98%,

12.64% 3 (54.32%)  
 3  
 1  
 (CM)  
 가 91%(30 )  
 60%  
 30  
 CM 가 60%  
 60%, 20 ) CM (

< -17> (CM)  
 ( : %)  
 CM 가  
 CM 91  
 CM 9  
 CM



< -18> (26%) 가  
 (14%),  
 ( : %) (13%), (12%)  
 가  
 가



가 49%

가

가

76%,

84%

가

< -24>

.	6%(1 )	8%(1 )
.	18%(3 )	8%(1 )
.	76%(13 )	84%(11 )

< -25>

가	19%(3 )
.	69%(11 )
.	0%(0 )
.	12%(2 )

69%

(52%)

(36%)

가 IMF

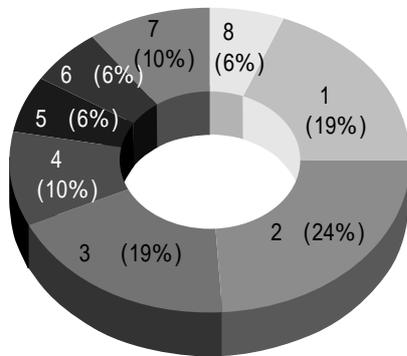
< -26>

	36%(11 )
	52%(16 )
가	6%(2 )
	3%(1 )
	3%(1 )

( )

63%

< -19>



(28 )

78%, 6

22%

62%

2

2

가

32%

50%

가

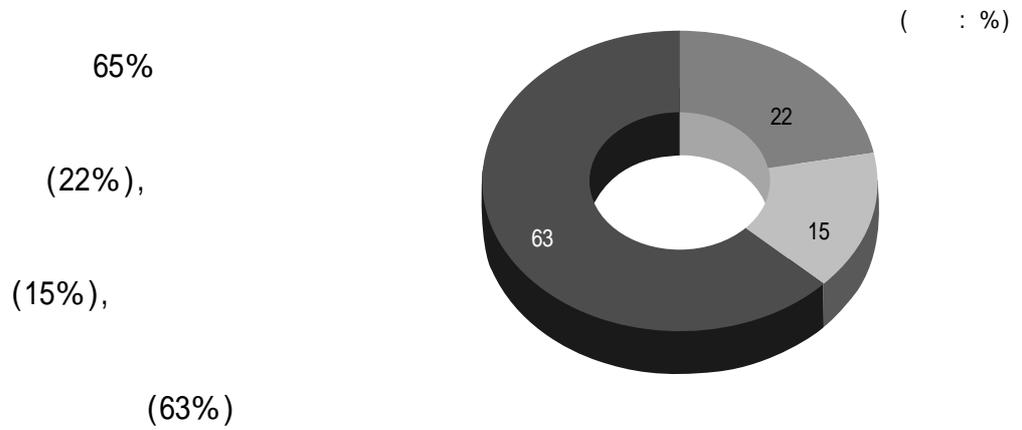
84%

6%

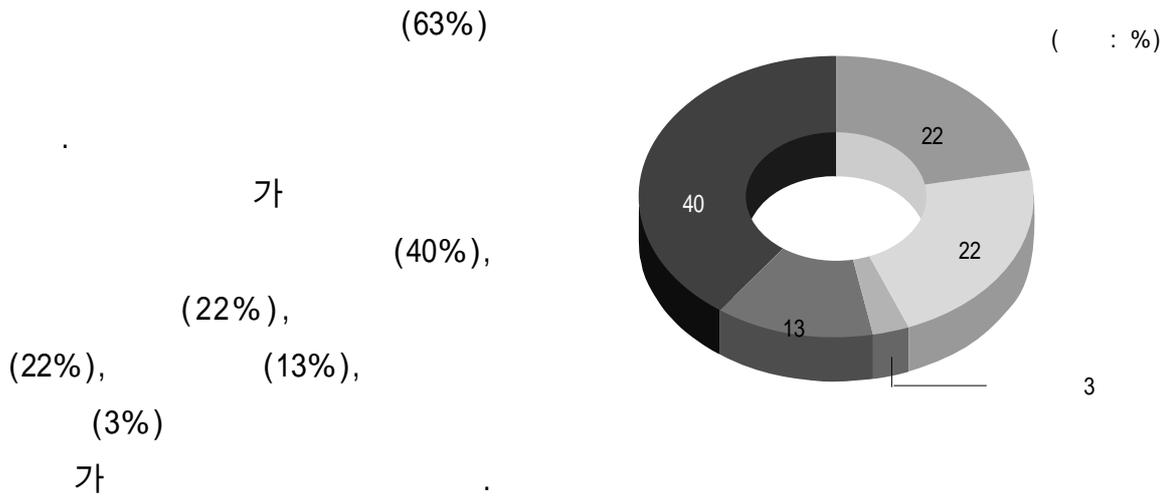
14%

(45%)

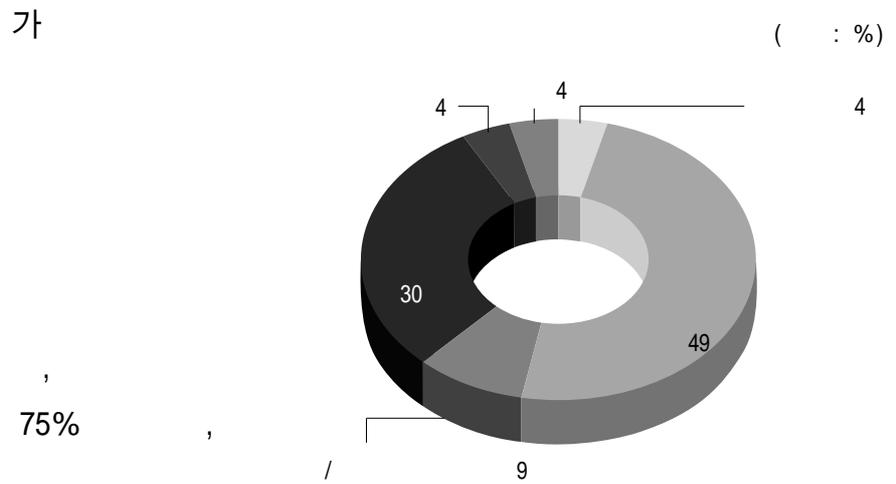
< -20>



가 < -21>



< -22> 가



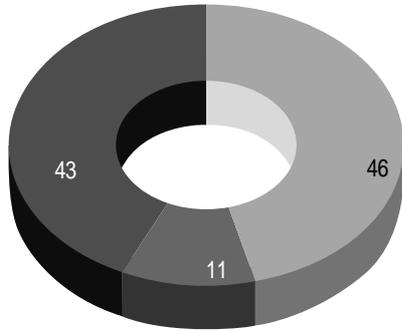
< -23>

가

( : %)

75%

가



49%

30%

가

43%가

, 46%가

, 11%가

가

3)

45%가

14%

36%,

65%

84%,

63%

가

가

가

(4)

가

가

(optimal business boundary)

< -27> 가

		A	CE	GC	SC
	A	A	AE	AC	
	CE	AE	CE	EC	
	GC	AC	EC	GC	
	SC				SC

: 1) A+CE+GC가 EAC 가 .

2)

가 .

가

가

(A : Architect), (CE : Consulting-Engineer), (AE : Architect-Engineer), (EC : Engineer-Contractor), (GC : General Contractor), (SC : Specialty Contractor)

AE, EAC(Engineer-Architect-Contractor), AC(Architect-Contractor), (GC+SC)

, GC A  
Contractor) A (C :

A C, GC SC

AE

3

( )

EC

CM

, CM  
가

1 50

가

interface

가

가

EC EAC

가

가

가

가

가

가가

가가

가  
(project life cycle)

( )

가  
(GC+SC) (GC)  
( )

가

2

가  
가  
(positioning)  
( )  
1 50  
, CM 가

Bechtel  
가 . Bechtel  
(commodity market)

가  
가  
. Bechtel  
clean coal-fired

( )

가  
가 .  
가  
가 .

( )

가 . , ,

( )

(AE)

, ,  
가 (to

be either very big or very small to survive)

가

가가 가

Design-Build

가

가

Design-Build

3

가

가

가

(business

boundary) 가

가

가

가

가

가

가

가

가

가

가

가

가

A

EC

가

가

가

가

300

가

- , 「 , 1997.
- . , 「 , 1998.
- . , 「 , 1996.
- 3 , 「 , 1994.
- 2 , 「 , 1995.
- . , 「 , 1996.
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1

2

1

1	Top 400 General Contractors	50%	(1 50 )
2	Top 400 General Contractors	50%	(51 100 )
3	Top 400 General Contractors	50%	(101 150 )
4	Top 400 General Contractors	50%	(151 200 )
5	Top 400 General Contractors	50%	(201 250 )
6	Top 400 General Contractors	50%	(251 300 )
7	Top 400 General Contractors	50%	(301 350 )
8	Top 400 General Contractors	50%	(351 400 )
9	Top 400 General Contractors	70%	( )
10	Top 400 General Contractors	70%	(1 50 )
11	Top 400 General Contractors	70%	(51 100 )
12	Top 400 General Contractors	70%	(101 150 )
13	Top 400 General Contractors	70%	(151 200 )
14	Top 400 General Contractors	70%	(201 250 )
15	Top 400 General Contractors	70%	(251 300 )
16	Top 400 General Contractors	70%	(301 350 )
17	Top 400 General Contractors	70%	(351 400 )
18	Top 600 Specialty Contractors		
19	Top 500 Design Firms	50%	(1999 97 )
20	Top 500 Design Firms	50%	(1996 95 )
21	Top 500 Design Firms	70%	(1999 97 )
22	Top 500 Design Firms	70%	(1996 95 )
23	Top 500 Design Firms	(70%	)-1999
24	Top 500 Design Firms	(70%	)-1998
25	Top 500 Design Firms	(70%	)-1997
26	Top 500 Design Firms	(70%	)-1996

< 1> TOP 400 General Contractors 50% (1 ~ 50 )

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	16	0	1	1	14	2	0	34
1994	16	1	1	0	14	2	2	36
1995	22	0	1	0	10	3	0	36
1996	20	4	1	0	15	3	1	44
1997	23	4	1	0	12	3	2	45
1999	28	1	1	0	10	3	1	44
2000	21	1	3	0	10	1	1	37
	42%	3%	3%	0%	24%	5%	2%	79%

< 2> TOP 400 General Contractors 50% (1 ~ 100 )

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	29	2	1	0	5	3	2	42
1994	31	2	0	0	3	5	1	42
1995	25	1	1	0	3	7	2	39
1996	27	4	2	0	3	4	1	41
1997	28	3	1	0	0	2	0	34
1999	26	2	1	0	5	4	1	39
2000	27	1	1	1	5	7	0	42
	55%	4%	2%	0%	7%	9%	2%	80%

< 3> TOP 400 General Contractors 50% (101 ~ 150 )

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	26	1	0	3	5	8	0	43
1994	32	2	0	0	3	6	2	45
1995	32	3	0	1	4	8	0	48
1996	35	0	0	1	2	7	0	45
1997	30	0	0	3	7	8	1	49
1999	37	1	1	0	2	5	0	46
2000	37	0	0	0	2	5	0	44
	65%	2%	0%	2%	7%	13%	1%	91%

< **4> TOP 400 General Contractors 50% (151 ~ 200)**

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	31	1	0	1	2	7	1	43
1994	30	1	1	2	3	6	1	44
1995	26	3	1	4	2	7	1	44
1996	24	3	0	0	5	12	0	44
1997	29	2	0	0	1	7	1	40
1999	37	1	0	0	0	7	1	46
2000	34	1	0	0	1	7	0	43
	60%	3%	1%	2%	4%	15%	1%	87%

< **5> TOP 400 General Contractors 50% (201 ~ 250)**

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	28	0	2	2	2	9	E	44
1994	28	2	2	0	1	10	1	43
1995	26	2	0	0	4	11	0	44
1996	31	2	1	1	1	8	1	45
1997	32	1	0	0	5	7	1	45
1999	38	0	0	0	0	10	0	48
2000	36	1	0	0	0	10	0	47
	63%	2%	1%	1%	4%	19%	0	90%

< **6> TOP 400 General Contractors 50% (251 ~ 300)**

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	29	2	2	0	1	6	0	40
1994	33	2	1	0	1	5	0	42
1995	36	0	0	0	2	7	1	46
1996	33	0	0	2	1	4	1	41
1997	33	1	0	0	1	11	1	47
1999	32	0	0	1	7	7	0	47
2000	37	0	0	0	2	8	0	47
	67%	1%	1%	1%	4%	14%	1%	89%

< 7> TOP 400 General Contractors 50% (301 ~ 350)

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	29	3	0	3	3	10	0	48
1994	28	0	1	2	3	9	1	44
1995	30	1	1	3	1	10	0	46
1996	31	1	0	3	3	6	1	45
1997	31	1	0	2	3	7	1	45
1999	27	0	0	0	1	9	1	38
2000	35	1	0	1	3	7	1	48
	60%	2%	1%	4%	5%	17%	1%	90%

< 8> TOP 400 General Contractors 50% (351 ~ 400)

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	33	0	1	1	1	7	2	45
1994	37	1	1	1	0	6	1	47
1995	29	0	2	5	2	4	1	43
1996	30	0	0	1	4	9	3	47
1997	28	1	1	5	3	5	1	44
1999	39	0	0	0	4	3	1	47
2000	35	0	1	2	3	3	0	44
	66%	1%	2%	4%	5%	11%	3%	91%

< 9> TOP 400 General Contractors 70% ( )

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE		
1992	172	6	5	4	33	26	SP	255	64%
1993	196	3	4	2	28	22	37	269	67%
1994	180	4	4	4	28	21	35	262	66%
1995	178	5	3	3	34	27	44	265	66%
1996	185	5	2	4	32	23	44	264	66%
1998	217	2	1	1	29	19	40	284	71%
1999	233	2	1	2	26	19	41	299	75%
					8%		38		68%

< 10> TOP 400 General Contractors 70% (1 ~ 50)

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	11	0	1	0	12	0	0	24
1994	9	0	0	0	10	1	2	22
1995	14	0	0	0	7	2	0	23
1996	11	1	1	0	11	2	1	27
1997	12	1	1	0	8	2	1	25
1999	19	0	0	0	7	1	1	28
2000	15	0	1	0	5	0	1	22
	26%	1%	1%	0%	17%	2%	2%	49%

< 11> TOP 400 General Contractors 70% (51 ~ 100)

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	17	1	1	0	3	2	2	26
1994	25	0	0	0	3	3	1	32
1995	18	0	0	0	2	5	1	26
1996	22	1	1	0	1	4	0	29
1997	23	1	0	0	0	2	0	26
1999	15	0	0	0	3	3	0	21
2000	22	0	0	0	4	4	0	30
	41%	1%	1%	0%	5%	7%	1%	54%

< 12> TOP 400 General Contractors 70%

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	20	0	0	1	4	7	0	32
1994	28	1	0	0	2	4	2	37
1995	23	0	0	0	4	6	0	33
1996	21	0	0	0	2	3	0	26
1997	24	0	0	0	4	5	1	34
1999	27	1	1	0	1	4	0	34
2000	35	0	0	1	2	3	1	42
	51%	1%	0%	1%	5%	9%	1%	68%

< 13> TOP 400 General Contractors 70%

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	26	1	0	0	1	6	1	35
1994	24	0	0	0	2	4	1	32
1995	19	2	0	1	2	6	1	32
1996	20	0	0	0	4	10	0	34
1997	22	1	0	0	1	6	1	31
1999	31	1	1	0	0	6	0	38
2000	30	1	0	0	1	5	0	37
	49%	2%	0%	0%	3%	12%	1%	68%

< 14> TOP 400 General Contractors 70%

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	28	0	0	1	1	4	1	35
1994	29	0	1	0	0	5	0	35
1995	27	0	2	2	2	4	1	38
1996	25	0	0	1	4	6	1	37
1997	25	0	1	3	2	3	0	34
1999	32	0	0	0	2	2	1	37
2000	33	0	0	1	2	3	0	39
	57%	0%	1%	2%	4%	8%	1%	73%

< 15> TOP 400 General Contractors 70%

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	23	2	1	0	1	5	0	32
1994	30	1	1	0	1	4	0	37
1995	33	0	0	0	1	5	1	40
1996	29	0	0	0	1	7	1	38
1997	23	1	0	0	1	9	1	35
1999	29	0	0	0	5	6	0	41
2000	33	0	0	1	2	7	0	42
	57%	1%	1%	0%	3%	12%	1%	76%

< 16> TOP 400 General Contractors 70%

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	24	2	0	1	3	7	0	37
1994	26	0	1	2	3	5	1	38
1995	27	0	1	1	1	8	0	38
1996	25	1	0	1	3	4	1	35
1997	26	0	0	1	3	6	1	37
1999	31	0	0	0	1	10	1	43
2000	31	0	0	0	3	6	2	42
	54%	1%	1%	2%	5%	13%	2%	77%

< 17> TOP 400 General Contractors 70%

	GEN. BLDG.	MFG.	Power	WTR./SWR. Waste.	INDUS./ PETRO.	TRANSP	HAZ. WASTE	
1993	28	0	0	1	1	4	1	35
1994	29	0	1	0	0	5	0	35
1995	27	0	2	2	2	4	1	38
1996	25	0	0	1	4	6	1	37
1997	25	0	1	3	2	3	0	34
1999	32	0	0	0	2	2	1	37
2000	33	0	0	1	2	3	0	39
	57%	0%	1%	2%	4%	8%	1%	73%

< 18> Top 600 Specialty Contractors

	A	C	D	E	X	G	MA	M	O	P	R	SH	ST	U	W	
A	107.8								245.1	32.9						358.8
C		1,911.7		75.2	78.5		162.5	19.7	111.4				24.0			2,383.0
D			656.0		33.0											689.0
E				8,870.5				7,197.5	644.1					1,225.7		17,937.8
X					1,234.1			140.2	410.1				27.0			1,811.4
G						671.2	46.0					20.0	150.8	346.7		1,180.7
MA							473.1				24.0				36.9	534.0
M								7,856.9	208.4			1,469.7		83.0		9,618.0
O									1,520.1	139.1	45.0	42.9	42.4	1,167.3	541.5	3,498.3
P										398.9		30.8				429.7
R											1,051.3				149.4	1,200.7
SH												273.7				273.7
ST													936.8			936.8
U														1,580.6		1,580.6
W															1,224.9	1,224.9
	107.8	1,911.7	656.0	8,945.7	1,345.6	671.2	681.6	15,214.3	3,139.2	570.9	1,120.3	1,837.1	1,181.0	4,403.3	1,952.7	43,684.4

< 19> TOP 500 Design Firms 50% (1999 ~ 97 )

		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
1999	1 ~ 50	2	0	5	0	0	13	5	3	28
	51 ~ 100	15	0	1	0	2	5	9	3	35
	101 ~ 150	16	1	0	0	2	3	5	6	33
	151 ~ 200	13	0	1	1	1	4	7	2	29
	201 ~ 250	21	0	1	1	0	4	6	1	34
	251 ~ 300	13	0	0	0	1	4	10	0	28
	301 ~ 350	23	0	1	0	0	3	8	0	35
	351 ~ 400	25	0	1	0	1	4	6	0	37
	401 ~ 450	18	0	0	0	0	2	5	1	26
	451 ~ 500	22	1	0	0	0	3	1	1	28
	168	2	10	2	7	45	62	17	313	
1998	1 ~ 50	3	0	4	0	2	13	5	5	32
	51 ~ 100	12	0	1	0	1	3	7	4	28
	100 ~ 150	16	2	0	0	2	5	6	6	37
	151 ~ 200	16	0	0	0	2	6	3	1	28
	201 ~ 250	15	2	0	0	1	3	6	1	28
	251 ~ 300	21	0	0	0	2	3	9	0	35
	301 ~ 350	18	0	0	1	0	3	6	0	28
	351 ~ 400	18	0	0	0	1	4	4	0	27
	401 ~ 450	24	1	0	0	1	1	6	0	33
	451 ~ 500	21	0	0	0	2	3	4	0	30
	164	5	5	1	14	44	56	17	306	
1997	1 ~ 50	3	0	3	0	0	12	4	4	26
	51 ~ 100	10	0	1	0	1	5	6	3	26
	101 ~ 150	13	1	0	0	3	8	7	2	34
	151 ~ 200	17	2	1	0	3	2	3	1	29
	201 ~ 250	16	1	2	0	0	4	8	0	31
	251 ~ 300	23	0	0	0	2	1	8	0	34
	301 ~ 350	16	0	0	0	2	4	6	0	28
	351 ~ 400	14	0	1	0	1	0	8	0	24
	401 ~ 450	19	1	0	0	1	1	4	0	26
	451 ~ 500	16	0	1	0	1	2	8	0	28
	147	5	9	0	14	39	62	10	286	

< 20> TOP 500 Design Firms 50% (1996 ~ 95 )

		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
1996	1 ~ 50	2	0	2	0	3	13	6	5	31
	51 ~ 100	8	2	1	0	2	3	7	9	32
	101 ~ 150	15	2	0	0	4	6	7	4	38
	151 ~ 200	12	0	0	0	2	3	7	3	27
	201 ~ 250	20	0	0	0	1	2	4	2	29
	251 ~ 300	17	0	0	1	2	1	11	0	32
	301 ~ 350	13	0	2	0	2	3	8	2	30
	351 ~ 400	20	1	0	1	1	1	8	1	33
	401 ~ 450	18	0	0	1	0	2	8	0	29
	451 ~ 500	17	0	1	1	0	2	4	1	26
	142	5	6	4	17	36	70	27	307	
1995	1 ~ 50	2	1	3	0	0	10	6	7	29
	51 ~ 100	7	1	2	0	1	5	4	13	33
	101 ~ 150	9	1	0	0	4	8	5	3	30
	151 ~ 200	18	0	1	0	2	4	4	1	30
	201 ~ 250	15	0	0	0	1	2	8	1	27
	251 ~ 300	14	0	0	0	3	2	10	1	30
	301 ~ 350	18	1	2	0	1	1	10	2	35
	351 ~ 400	15	0	0	0	2	4	7	1	29
	401 ~ 450	18	1	0	0	0	1	8	1	29
	451 ~ 500	24	0	0	0	2	2	5	1	34
	140	5	8	0	16	39	67	31	306	

< 21> TOP 500 Design Firms 70% (1999 ~ 97 )

		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
1999	1 ~ 50	2	0	1	0	0	8	1	1	13
	51 ~ 100	13	0	0	0	0	4	6	2	25
	101 ~ 150	14	0	0	0	1	1	3	3	22
	151 ~ 200	9	0	0	1	1	3	3	1	18
	201 ~ 250	19	0	1	0	0	2	2	1	25
	251 ~ 300	11	0	0	0	0	4	4	0	19
	301 ~ 350	19	0	1	0	0	2	6	0	28
	351 ~ 400	21	0	1	0	0	4	3	0	29
	401 ~ 450	15	0	0	0	0	1	5	0	21
	451 ~ 500	20	0	0	0	0	1	1	0	22
	143	0	4	1	2	30	34	8	222	
1998	1 ~ 50	3	0	1	0	0	7	3	2	16
	51 ~ 100	11	0	0	0	0	3	5	2	21
	101 ~ 150	13	1	0	0	1	3	4	5	27
	151 ~ 200	12	0	0	0	2	3	2	0	19
	201 ~ 250	12	0	0	0	0	1	1	1	15
	251 ~ 300	17	0	0	0	0	2	4	0	23
	301 ~ 350	14	0	2	0	0	2	5	0	23
	351 ~ 400	17	0	0	0	0	4	1	0	22
	401 ~ 450	20	0	0	0	1	1	5	0	27
	451 ~ 500	20	0	0	0	1	3	3	0	27
	139	1	3	0	5	29	33	10	220	
1997	1 ~ 50	3	0	1	0	0	6	2	1	13
	51 ~ 100	10	0	0	0	0	5	5	2	22
	101 ~ 150	10	0	0	0	2	7	4	2	25
	151 ~ 200	14	0	0	0	1	2	0	0	17
	201 ~ 250	12	0	1	0	0	3	3	0	19
	251 ~ 300	20	0	0	0	0	1	4	0	25
	301 ~ 350	13	0	0	0	1	3	5	0	22
	351 ~ 400	13	0	0	0	0	0	6	0	19
	401 ~ 450	18	0	0	0	1	1	1	0	21
	451 ~ 500	15	0	0	0	0	1	5	0	21
	128	0	2	0	5	29	35	5	204	

< 22> TOP 500 Design Firms 70% (1996 ~ 95 )

		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
1996	1 ~ 50	1	0	1	0	0	7	4	3	16
	51 ~ 100	8	0	0	0	0	2	4	5	19
	101 ~ 150	14	0	0	0	3	4	3	3	27
	151 ~ 200	10	0	0	0	0	3	1	1	15
	201 ~ 250	14	0	0	0	0	2	1	2	19
	251 ~ 300	16	0	0	1	1	1	7	0	26
	301 ~ 350	8	0	0	0	0	1	5	1	15
	351 ~ 400	17	0	0	0	1	1	6	0	25
	401 ~ 450	15	0	0	0	0	2	5	0	22
	451 ~ 500	13	0	1	0	0	2	2	0	18
		116	0	2	1	5	25	38	15	202
1995	1 ~ 50	1	0	1	0	0	6	4	3	15
	51 ~ 100	6	0	1	0	0	2	3	7	19
	101 ~ 150	9	0	0	0	3	6	3	2	23
	151 ~ 200	15	0	0	0	0	3	1	1	20
	201 ~ 250	14	0	0	0	0	2	3	0	19
	251 ~ 300	11	0	0	0	2	2	6	1	22
	301 ~ 350	13	0	0	0	0	1	6	2	22
	351 ~ 400	14	0	0	0	1	3	6	0	24
	401 ~ 450	16	0	0	0	0	0	3	0	19
	451 ~ 500	19	0	0	0	1	1	4	1	26
		118	0	2	0	7	26	39	17	209

< 23> TOP 500 Design Firms (70% ) – 1999

type		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
A	58	47	0	1	0	0	1	1	0	50
AE	78	56	0	0	0	0	2	1	0	59
CE	179	30	0	1	0	2	10	23	4	70
EA	99	5	0	2	0	0	4	8	0	19
EC	50	2	0	0	0	0	13	1	0	16
ENV	19	2	0	0	1	0	0	0	4	7
GE	9	1	0	0	0	0	0	0	0	1
	492	143	0	4	1	2	30	34	8	222

< 24> TOP 500 Design Firms (70%) – 1998

type		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
A	54	47	0	0	0	0	0	0	0	47
AE	94	57	1	0	0	1	1	0	0	60
CE	177	24	0	0	0	4	10	22	2	62
EA	101	7	0	3	0	0	7	9	0	26
EC	36	2	0	0	0	0	12	1	2	17
ENV	21	1	0	0	0	0	0	0	6	7
GE	10	1	0	0	0	0	0	0	0	1
	493	139	1	3	0	5	30	32	10	220

< 25> TOP 500 Design Firms (70%) – 1997

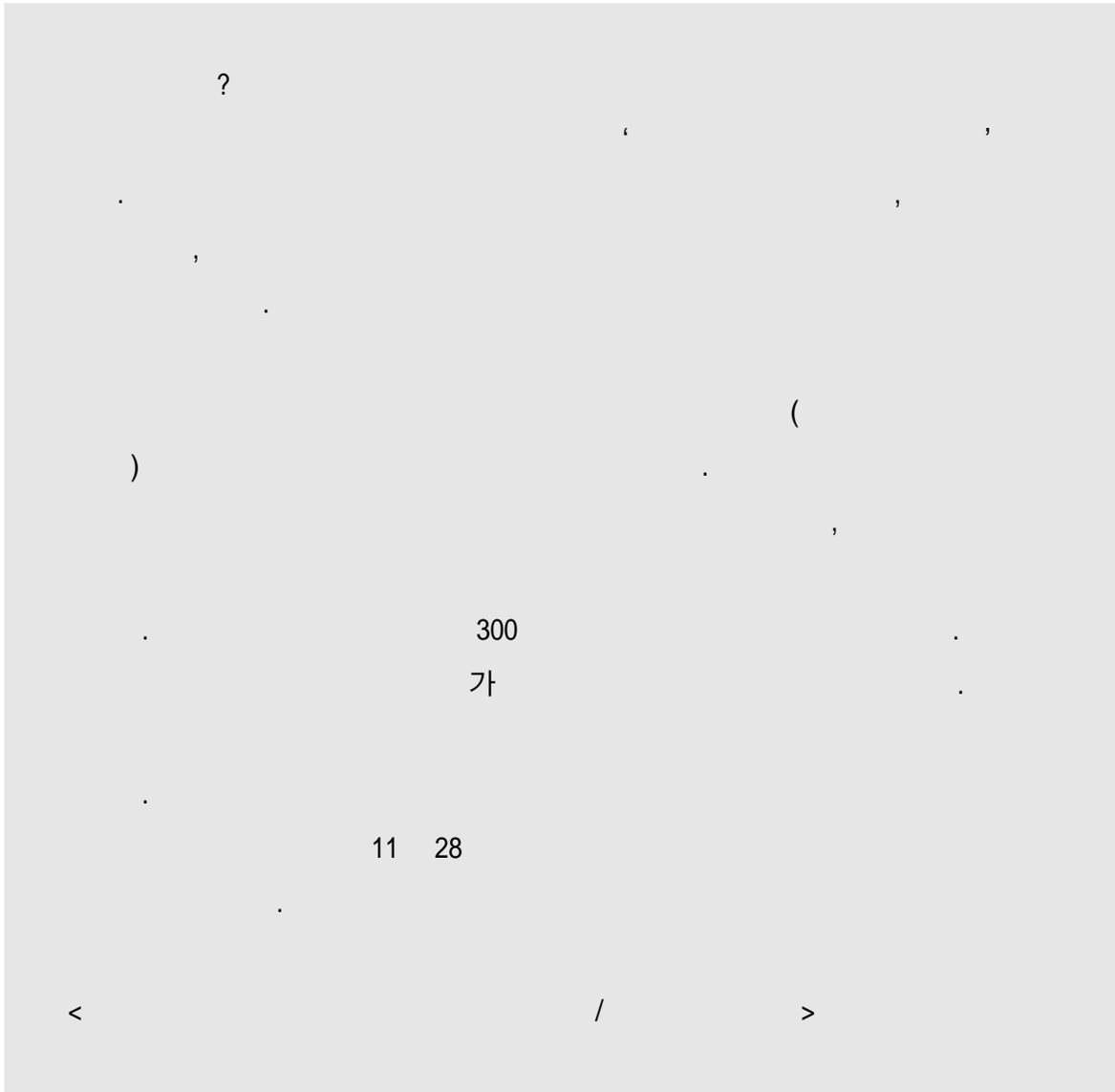
type		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
A	53	48	0	0	0	0	0	0	0	48
AE	78	50	0	0	0	0	0	1	0	51
AEC	6	4	0	0	0	0	0	0	0	4
CEP	1	0	0	0	0	0	0	1	0	1
E	177	20	0	0	0	3	8	21	0	52
EA	97	3	0	2	0	1	7	9	0	22
EAP	5	0	0	0	0	0	0	1	0	1
EC	56	2	0	0	0	1	14	2	3	22
ENV	12	0	0	0	0	0	0	0	2	2
GE	10	1	0	0	0	0	0	0	0	1
	495	128	0	2	0	5	29	35	5	204

< 26> TOP 500 Design Firms (70%) – 1996

type		General Building	Mfg. Plants	Power	Water Supply	Sewer/Waste	Industrial/Petroleum	Transportation	Hazardous Waste	
A	49	45	0	0	0	0	0	0	0	45
AE	74	45	0	0	0	0	0	0	0	45
AEC	3	3	0	0	0	0	0	0	0	3
CEP	1	0	0	0	0	0	0	1	0	1
E	182	17	0	0	0	3	7	28	2	57
EA	101	3	0	2	1	2	4	7	0	19
EAP	6	0	0	0	0	0	0	2	0	2
EC	55	2	0	0	0	0	14	0	9	25
ENV	12	0	0	0	0	0	0	0	4	4
GE	13	1	0	0	0	0	0	0	0	1
	496	116	0	2	1	5	25	38	15	202

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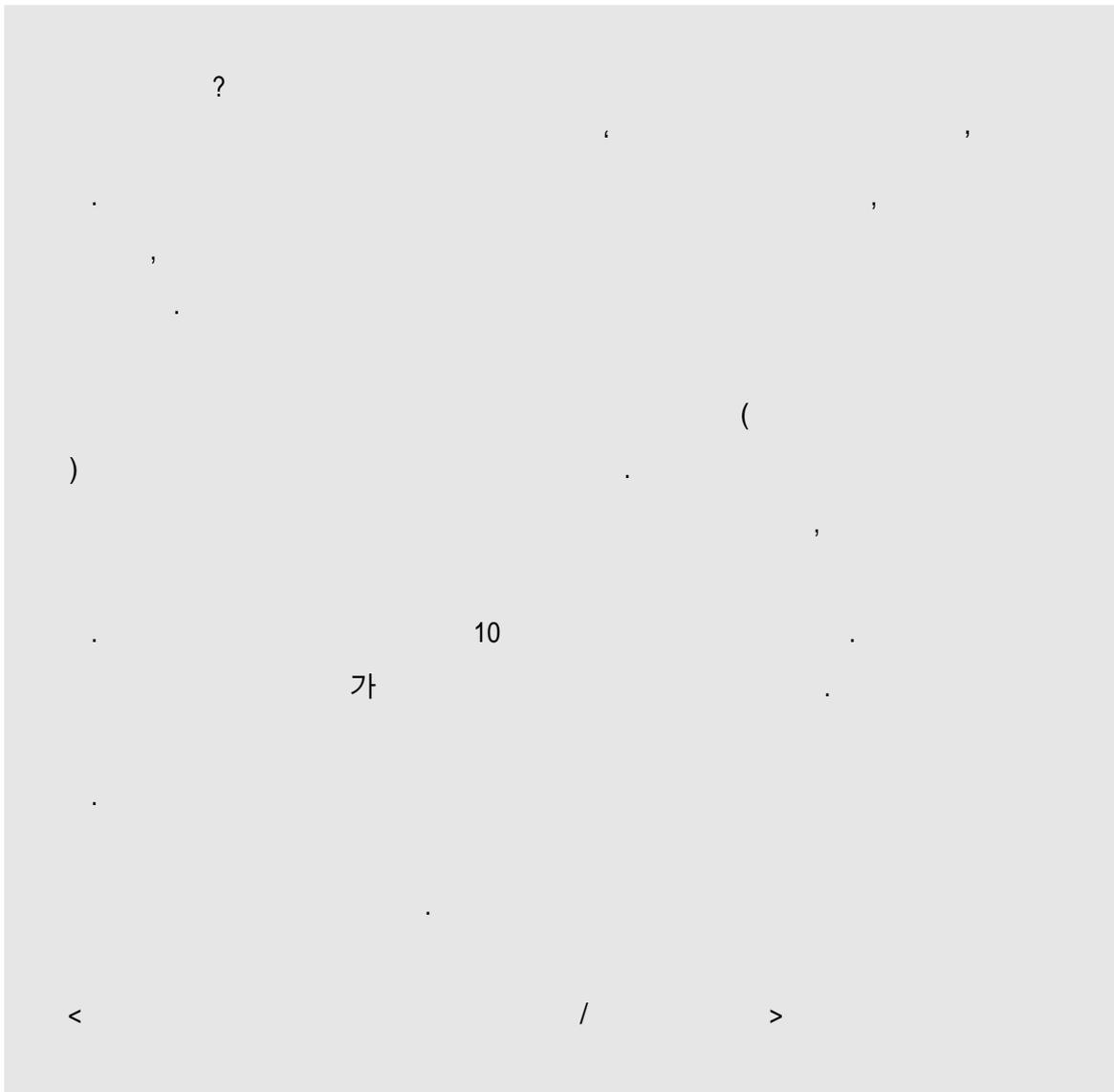
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## Abstract

### **A Study on Structural Changes in Business Boundaries in the Korean Construction Industry**

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Business boundaries of firms in the construction industry are strictly regulated in Korea. Under the current law, firms involved in construction processes are classified into 5 categories; general contractors, specialty contractors, architects' offices, engineering firms, and firms specialized in inspection. Among these types of firms, general contractors are prohibited to enter into specialty contractors' market and vice versa by the Basic Law on the Construction Industry. Also general contractors are not allowed to provide architectural services. In this study, we focus on the effects of the liberalization in business boundaries in the Korean construction industry.

From the perspective of transaction cost economics, firm's decision to integrate other vertical production processes depends on various factors. Among these factors, the specificity of assets involved, the uncertainty about the results of transactions, frequencies of transactions, and difficulties with measuring the performance are important. Construction firms may benefit from the integration of other vertical processes because construction projects are complex and the results from out-sourcing are uncertain. The relationship between a contractor and a subcontractor has the characteristic of a post-contract bilateral monopoly. Contractors are able to avoid the so-called 'hold-up' problem by merging subcontractors' jobs into their main works. However, when firms put much

emphasis on flexibility than efficiency, they prefer subcontracting methods to in-house productions.

In the U.S., business types of firms in the construction industry have evolved in response to changes in clients' demands. In the past, firms were classified into three categories; general contractors(GC), specialty contractors(SC), and architect-engineers(AE). As new types of contracts such as the Design-Build and the CM(construction management) were introduced, new types of firms emerged in the market. These were engineer-contractors(EC), engineer-architect-contractors(EAC), and CM(construction management) firms.

We surveyed general contractors and specialty contractors in Korea to estimate the effects of the liberalization on the construction industry. 36 % of general contractors answer that they will enter into specialty contractors' market if the entry barrier is lifted. Also 45 % of the general contractors intend to merge architects' offices. Like general contractors, many specialty contractors want to provide general contractors' services. Most of the contractors point to the enhancement of production efficiency as the motivation to integrate other construction processes.

If current regulations, which limit firms' decisions on business boundaries, are eliminated, firms will choose optimal business scopes taking into account types of contracts adopted by the Government for public works. Based on the cost/benefit analyses, they will decide whether to integrate other production processes or not.

In the construction design market, major types of business will be architects' offices(A), consulting-engineering firms(CE), architect-engineers(AE) and engineer-contractors(EC). In the(post-design) construction market, engineer-contractors(EC), general contractors(GC), and specialty contractors(SC) will be major players. We predict that new types of firms will emerge in response to the liberalization. These will be architect-engineers(AE), engineer-architect-contractors(EAC), architect-contractors(AC), and comprehensive contractors(GC+SC).

The comprehensive contractors who will provide both general and specialty contractors' services will not prevail in the long run as we see in the U.S. market. In the U.S., the in-house integration of both general and specialty contractors' services is rare. The combination of a general contractor and an architect office will be affected by the change in the types of contracts adopted for construction of general buildings.