

經營學博士 學位論文

釜山港 物流中心型 自由地帶 機能  
經濟的 效果 研究

The Function and Economic Effects of Establishing Logistic  
Free Zone in the Port of Pusan

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貿易學科

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< >

<b>1</b>	.....	<b>1</b>
1	.....	1
2	.....	4
<b>2</b>	.....	<b>6</b>
1	.....	6
2	.....	12
<b>3</b>	.....	<b>21</b>
1	.....	21
2	가가	45
<b>4</b>	.....	<b>55</b>
1	.....	55
2	.....	58
<b>5</b>	.....	<b>71</b>
1	.....	71
2	.....	80
<b>6</b>	.....	<b>84</b>
	.....	88
	.....	97

< >

< 2- 1> 가	.....	7
< 2-2>	.....	8 · 9
< 2-3> Marc Evertse & Bert Kruk	.....	15
< 2-4>	.....	15
< 2-5>	.....	17
< 2-6>	.....	18
< 3- 1> . 가	.....	23
< 3-2> ECT	.....	25
< 3-3>	.....	25
< 3-4>	.....	27
< 3-5> 5	.....	28
< 3-6> 가	.....	28
< 3-7> 가 (Pasir Panjang )	.....	29
< 3-8>	.....	31
< 3-9>	.....	31
< 3-10>	.....	32
< 3-11>	.....	32
< 3-12>	(1996 )	..... 33
< 3-13>	( )	..... 34
< 3-14>	- km	..... 35
< 3-15>	.....	35
< 3-16>	가	..... 35
< 3-17> . 가	.....	36
< 3-18> 가	.....	39
< 3-19>	.....	41

< 3-20>	· 가	.....	42
< 3-21>	· 가	.....	44
< 3-22>	EDC 가가	.....	46
< 3-23>	Distripark	.....	46
< 3-24>	가 Distripark	.....	47
< 3-25>	· 가 Distripark	.....	48
< 3-26>	1·2	.....	48
< 3-27>	(1996 )	.....	52
< 3-28>		.....	53
< 3-29>	· 가	.....	54
< 4-1>	(2001 )	.....	62
< 4-2>		.....	65
< 4-3>	가가	.....	67
< 4-4>		.....	69
< 4-5>	가	.....	70
< 5-1>	· 가	.....	74
< 5-2>		.....	76
< 5-3>	가 Keppel Distripark	.....	77
< 5-4>		.....	78
< 5-5>		.....	81
< 5-6>		.....	83

# **The Function and Economic Effects of Establishing Logistic Free Zone in the Port of Pusan**

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## **Abstract**

This paper probes the necessity and feasibility of establishing a logistic free zone in Port of Pusan. It considers the logistics function of Pusan Port and the economic effects of establishing the logistic free zone, and suggests policy prescriptions for introducing the free zone system and improving the logistics functions of Pusan Port.

Major research findings from this study were as follows.

First, we found that the logistics promotion function of Pusan Port is competitive relatively, and specifically, and Pusan Port needs to make up the foundation for establishing the value-added logistics function and to supplement some of the remaining inadequacy in logistics function.

Second, this study analyzed influences on the Pusan regional economy of the logistic free zone system through a regression analysis. Using input-output table data, the regression analysis was able to provide a

quantitative prediction on effects of making the Pusan Port a tariff-free zone. Influence for the regional economy due to the enforcement of the free zone system, we found that a strong positive effects should be expected on the Pusan regional economy once the logistic free zone would be set up at the Port of Pusan.

Third, the positive economic effects on Pusan regional industries might be further strengthened if the value-added logistics function of Pusan Port could be supplemented by linking to the hinterland of Pusan Port.

# 1

1

21

, 가

EU, NAFTA

가

1)

. 1970

가 , 1998

가

가

1997

가

---

1) Munasser(1995), p.11)

1,856 가

81

.(Saeed

가  
가  
21  
1999  
2000  
3  
2000  
1920  
1950  
가 1999 12  
7 2  
1960



. 가  
FAZ ,

. 가  
가

가 ,

2

, 가  
,  
,  
,





< 2-1> 가

	가
Free Trade Zone	ILO(1982), 가 (1969), (1990) (1959( ) 1987)
Foreign Trade Zone	(1936), (1983)
Industrial Free Zone	(1970 ), UNIDO(1971), (1975)
Free Zone	UNCTAD(1973), USAID(1982), United Arab Emirates(1983), (1984), (1888)
Maquiladoras Industry Plan	(1964)
Export Free Zone	(1975), UNIDO(1976)
Free Export Zone	(1970)
Integrated Bonded Area	(1993), (1999)
Customs Free Zones	(1994)
Export Processing Free Zone	UNIDO(1976), UNCTAD(1983)
Free Production Zone	Starnberg Institute(1977)
Export Processing Zone	Harvard Univ.(1977), APO(1977), WEPZA(1978) UNIDO(1978), World Bank(1978) The Economist(1979), ILO(1983), (1965) (1977), (1980), (1980)
Exporting Processing Entrepots	(1993)
Special Economic Zone	(1979)
Free Port	가 (1819), (1842)
Investment Promotion Zone	(1981)
Free Economic Zone	UN(1991), (1994)
Free Export Processing Zone	OECD(1984)
Foreign Access Zone	(1992)
Free Warehouse	(1988), (1980 )
Science-Based Industrial Zone	(1978)

: UN(1991), (1995), (1997), (1998), (1998),  
(1998)

< 2-2>

	/ 가( )	
(Free Port)	Alan E. Branch(1986)	.
	Ernest G. Frankel(1987)	, . 가 .
	UNCTAD (1996)	.
(Free Zone)	H.G.Grubel (1984)	가 .
(Free Economic Zone)	(1994)	, , , , ,
	Saeed Munasser (1995)	, 가 .
(Free Trade Zone)	(1993)	가 , , , , , 가가 .
(Free Trade Zone)	(1998)	가 , , , , , 가 , .
(Free Trade Zone)	(1995)	가 . . . .
(Special Zone)	(1998)	가가 , , , , , 가 , 가 .



2.

Ernest G. Frankel(1987;236- 241) 가  
가 ,  
(Free Trade Zones),  
(Free Ports), (Industrial Free Port) ,  
(Enterprise Zones)  
矢野剛(1933;325- 328)  
(Free Port) ,  
(自由港市, Free Port City), (自由港區, Free Port  
Quarter), (自由地區, Free Zone) 가  
秋山龍・佐藤肇(1973;255- 268) (水際線)  
가  
가  
(精製)  
가 , , 가 , , ,  
가  
Saeed Munasser(1995;4- 5)  
(Free Fort), (Free Trade  
Zones), 가 (Export Processing Zones), (Enterprise Zones),  
(Special Economic Zones), (Free Banking Zone),  
(Free Insurance Zone) 가

(Foreign Trade Zones) ,  
(Customs Free Zone) .  
가 , 가  
(Production Zones) .

Eric. E. Pollock(1999;27- 29)

(Free Ports) (Transit Zones) , 가  
(Export Processing Zones) 가 (Import Processing Zones)

(1994;30- 31)

가 ,

(1995;17- 18)

(Territorial

Approach)

(Free Economic Zones) .

(Integrated Special Industrial Economic Zone),

(Foreign Trade Economic Zone), (Functional · Sectoral  
Economic Zone), 가

(1996;194- 195)

(Free Trade Zone), 가 (Export Processing Zones),  
(Special Economic Zone), (Free Perimeter),

(Special Customs Privileges)  
(1998;46-47)

.  
가

2

1.

1)

2000

가 (Livorno)

가 . 1547

(Leghorn)

1861

가 1876

가

1880

2

20

가

가

1936

((Foreign Trade Zones)

, 1950



가 .

,

,

,

가 .

가

< 2-3>

가 ,

,

,

가 .(

(1998);20- 23) 가

(Maquiladoras Industry Plan)

가 .

MSC<sup>2)</sup>, ((新竹 Science-Based Industrial Zone)

---

2) (MSC: Multi-Media Super Corridor)  
 15km, 40km Kuala Lumpur City Centre

2-4>

< 2-3> Marc Evertse & Bert Kruk

	가					( / )
			가 free access	· free access,		(stock, )
		· free access		Free Zone 가	Free Zone	
	· 輸入稅		가			

: Marc Evertse & Bert Kruk(1995), pp.3-6

< 2-4>

	가	· CIQ	가 · FAZ
	가	· R&D	· EPZ

2.

1)



3) Hub & Spoke

< 2-5 >

	(1970)	秋山龍·佐藤肇 (1973)	Frankel (1992)	Evertse & Kruk (1995)
	(well-locates)	/ 9		
	(well-equipped)	6,000m		
	(well-administered)	100		
		(1996)		(1998)
				가

< 2-6 >

	Willingale (1982)	Slack (1985)	Murphy (1987)	Murphy (1992)	Peters (1990)		
	· · · · 가 · · · · · · · ·	· · · · · · · · · ·	· · · · 가 · · · · ·	· · · · · , ·	· · · ·		
	Hayuth (1991)	UNCTAD (1992)	Hayuth & Fleming (1994)	Starr (1994)	McCalla (1994)		
	· · · ·	· · 가 · ·	· · · ·	· · · ·	· · · ·		
	(1992)	(1993)	(1996)	(1996)	(1996)	(1998)	(1998)
	· , · · 가 ·	· , · · 가 ·	· · · · ·	· · · ·	· · · , · ·	· · · ·	· · · ·

2) 가가

Added Logistics) , 가가 (VAL: Value 가가

가가

. ( ) 1 , ( 가

)가 2 ,

3 , ( )가 4

, 5 가가 ( VAL (2-3 )

) 가 . 가가

. . . ,

. , ,

, .

가가 가 가가

, , ,

.( (1998);83, (1998);11)

가가 가

(EDC: European Distribution Center)

(Centralized European

Distribution) EU 가 가 가

, , ,

. .

가 , 가

. .

, .

가가

,

가

가

가가

가가

### 3

1

1.

1)

가

가

가

, 3

75%

6

가

가

가

가

가  
 가  
 가<sup>4)</sup> 가 Pasir Panjang

2)

3  
 90%  
 , 1998 ODCY(Off-Dock CY)  
 72.2%  
 52.2% ,  
 5)  
 가  
 300  
 가

4) 1996 가 62.5% .( (1997), p.277, p.364)

5) 25.1%, 22.1%, 15.7%, 14.4% , ODCY .( (1999a), pp.37-38)

< 3-1>

< 3-1> 가

			가
			가
(m)	- 14	- 13 - 16	- 14
( )	6	22	4
( )	274	22	4
	( )		Pasir Panjang

: 가 - - - - 20  
가

2.

1)

3 1 76 2 (10,500ha)  
98 6 Waalhaven/Eemhaven Maasvlakte

< 3-2>

Maasvlakte Delta Sea-Land(DSL) 1988 1993  
 , AGV(Automated Guided Vehicle)  
 ASC(Automated Stacking Crane)  
 ECT(Europe Combined Terminals)  
 Sea-Land ECT ECT Delta  
 Multiuser(DMU) , ECT Delta Dedicated East(DDE)  
 , 1999 1 ECT Delta Dedicated West(DDW)  
 , 6 TEU 6  
 가 가  
 'Delta 2000-8 ' , 2,600m  
 8  
 1996 DDE , DDW  
 . DDW 가 2004 1 40 TEU  
 , DDE DDW 24  
 3 TEU 가  
 1998 40%  
 , 70% 가 . <  
 3-3> 1  
 .6)

6) 1998

4 , 1

< 3-2>

ECT

	Delta Container Division			Home Container Division
	Delta Multi-User Terminal	Delta Sea-land	Delta Dedicated East	
( )	741,125			226,875
	278,300	187,550	275,275	
( TEU)	410			100
( TEU, )	350(58%)			90(15%)
(m)	1,650	970	1,030	1,600
	8	3	6	-
(m)	13	16.6	16.6	10-13
( )	11	5	7	13
(m)	260	-	-	
( )	3	-	-	1
	Multi-Trailer System			-
AGV/ ASC	-	26/52	31/58	-
On-Dock Rail	4 (600m x 4 )	-	58	3 (550m x 3 )

: 1998

: (1999b), p.1, — (1998a), pp.171-178, — (1998b), p.157

CI Yearbook 1999, p.64

[www.port.rotterdam.nl/port/GB/cont\\_fac.html](http://www.port.rotterdam.nl/port/GB/cont_fac.html)

(RMPM: Rotterdam Municipal Port Management)

< 3-3>

( : TEU)

	1974	1978	1982	1986	1990	1994	1995	1996	1997	1998
Rotterdam	94	159	216	287	367	454	479	494	534	603
Hambrug	29	60	89	125	197	273	290	350	334	355
Bremerhaven	42	58	80	100	120	150	153	154	170	-
Antwerp	39	43	85	131	155	221	234	265	297	327
Le Havre	21	40	54	60	86	87	92	102	n/a	-
Felixstowe	22	30	63	90	144	173	192	204	235	225

: [www.port.rotterdam.nl/port/GB/cont\\_dev.html](http://www.port.rotterdam.nl/port/GB/cont_dev.html),

[www.port.rotterdam.nl/port/statistieken/throughput1.html](http://www.port.rotterdam.nl/port/statistieken/throughput1.html)(RMPM)

가 가 (Sea - Air) (Schiphol) 70 가 1 5 3 5 1 14 2 40 가 2 1996 26%, 22%, 11%, 41% 가 7) 1 10 24 48 4TEU 2

7) 가 76.2%, 15.9%, 7.9% ( ) (1998b), pp.3-4 )

48 가 .

< 3-4>

< 3-4>

	feeder/ short - sea
	48 가

가 , 78 3 ,  
 44 3 1 50 .  
 < 3-5> 가 1998 1

, < 3-6> 1 6 TEU 가 Tanjong  
 Pagar , Keppel , Brani 98%  
 , 8)

< 3-7> 가 ,  
 Pasir Panjang 30 4  
 . 1·2 26  
 1 8 TEU , 가 3 6 TEU  
 49 .

8) 가 91%가 .(1996 )

< 3-5> 5

( : TEU)

	1994	1995	1996	1997	1998	
가	1,040	1,185	1,294	1,412	1,510	1
	1,105	126	1,346	1,450	1,465	2
	490	505	506	569	627	3
	454	480	494	535	603	4
	383	450	476	523	575	5

: 1998

: [www.port.rotterdam.nl/port/GB/statistieken/cargo8.html](http://www.port.rotterdam.nl/port/GB/statistieken/cargo8.html)(RMPM)  
[www.kca.or.kr/Statistics/index.html](http://www.kca.or.kr/Statistics/index.html)( )

< 3-6> 가

	Tanjong Pagar	Keppel	Brani	Pasir Panjang
( )	251	290	242	196
(m)	9- 14.8	9.6- 14.6	12- 15	15
	6 main	5 main	7 main	4 main
	2 feeder	8 feeder	2 feeder	31
(m)	2,330	3,300	2,627	1,455
	29	36	30	12
( TEU)	1,070		550	
1998 ( TEU)	465	552	434	47

: (1998a), pp.164- 167

[www.psa.com.sg/mktg/container/terminal.html](http://www.psa.com.sg/mktg/container/terminal.html)  
(PSA: Port of Singapore Authority Corp.)

< 3-7> 가 (Pasir Panjang )

( : , , TEU)

	1	2	3-4
	38	67	-
	8	18	23
	1993-2000 (1998 4 )	1995.12-2009 (2001 2 )	2027
	540	1,290	1,770

: www.psa.com.sg/mktg/container/terminal.html(PSA)

가

, 가 .

, 가 7 가  
4 60 , 3 , 4 , 5 ,  
22 .

가

, 가

, (Changi)

2 4

(One-Stop)

가 , 1996 1 50 , 54 가

3 1

69

(14.2 ) ,

7 ,

4 (20,570 ) ,

(2,600 )

,

3

가  
가  
가  
가  
가  
가  
(Jurong)  
, 30

2)

1999 < 3-8> 1 4  
83 4 , 18  
1977 45 4 TEU  
1998 5  
75 3 TEU 13.1% 가  
, 1977 12  
< 3-9> 1998 90.4%,  
100%

ODCY  
90%  
< 3-10>  
1 90 1 19  
9) 1996 7 2011 12  
( < 3-11> )

< 3-8 >

	(1 2 )	(3 )	(4 )		
	1974- 1996	1985- 1997	1991- 1997	1991- 1999	1988- 1997
( m )	5 4 +1 1 (1,447)	5 4 (1,200)	5 4 (1,400)	2 1 +5 2 (500)	5 2 (600)
( TEU )	100	128	120	36	36.5
(m)	- 12.5	- 14 - 15	- 15	- 11	- 13
	1978. 9 ( :1996. 9)	1991. 6 (1 :1997. 9)	1998. 4	1996. 9	1998
( m <sup>2</sup> ( ))	648 (196)	1,039 (314)	750 (227)	180 (54)	142 (43)
(m)	820	925	950	-	-

: 1999

:

< 3-9 >

( : TEU, % )

	1992	1993	1994	1995	1996	1997	1998
(A)	2,751,006	3,070,681	3,825,565	4,502,596	4,760,507	5,233,880	5,752,955
( )	(95.6)	(95.8)	(94.8)	(93.8)	(91.5)	(89.9)	(90.4)
가	6.3	11.6	24.6	17.7	5.7	9.9	9.9
(B)( 가 )	155,933	263,315	594,008	859,298	941,352	1,104,827	1,213,864
	(10.8)	(68.9)	(125.6)	(44.7)	(9.5)	(17.4)	(9.9)
	100	100	100	100	99.8	99.9	99.9
(B/A)	5.6	8.6	15.5	19.1	19.8	21.1	21.1

:

:

9)

'(1996.12)

'가

1999 6

< 3-10>

	(4 )	
	1995 2001	1996 2011
( , )	5 × 2.5 × 1	5 × 15.2 × 9
(m)	846	7,800
( TEU)	48	430

: (1999),

< 3-11>

				CY	
1 (1997-2005)	<3.5km> ' ' 3.2km 300m	<11 > 5 7 2 3 1	<*262 TEU> ' ' 255 7	' ' 58 4	93
2 (2006-2011)	<4.3km>	<14 > 5 8 2 6	<*330 TEU>	78	26
	<7.8km>	<25 >	<*592 TEU>	140	119

: \* 430 TEU.

: ( ) (1999),

가

1999 1  
5  
1996 - 33 13 ,  
- 19 9 가 .(< 3-12> )  
1972 가 ,  
가



1960

가

< 3-14>

- km

가

< 3-15>

ICD

10

가 2010

가

3-16>

1994

1998

가

21.8%

1998

1997

54.3%

가

가

< 3-13>

( )

( : TEU, %)

	1994	1995	1996	1997	1998
( )	3,231 (100)	3,643 (100)	3,819 (100)	4,129 (100)	4,539 (100)
( )	2,774 (85.9)	3,105 (85.2)	3,227 (84.5)	3,484 (84.4)	3,779 (83.3)
( )	404 (12.5)	478 (13.1)	508 (13.3)	546 (13.2)	607 (13.4)
( )	53 (1.6)	60 (1.7)	84 (2.2)	99 (2.4)	153 (3.3)

: (1999a), p.8

< 3-14>

- km

( : )

38.3	198.7	452.5	10,046.3

: [www.momaf.go.kr/9B4269C7ECE53164492567020001E7A6?OpenDocument](http://www.momaf.go.kr/9B4269C7ECE53164492567020001E7A6?OpenDocument)  
( )

< 3-15>

			1	
( )-	10 /	13 /	731TEU	8 10
( )-				8 40
( )-	3 /			
- ( )	10 /	13 /	731TEU	8 10
- ( )				8 40
- ( )	3 /			

: (1997a), p.183

< 3-16>

가

( : %)

1994	1995	1996	1997	1998	1994 1998 가
17.3	13.6	39.6	18.9	54.3	21.8

: (1999a), p.8

, 가

< 3-17>

.

,

,

.

,

.

< 3-17>

가

				가
/	( )	83.4	96.8	78.3
		, , ,	DMU, DSL, DDE, Home	Tanjong Pagar, Keppel, Brani
	( TEU)	420	510	1,600
	( TEU)	394	440	1,451
	( TEU, )	575(5 )	603(4 )	1,510(1 )
		18	26	30
	(TEU, )	31.9 (100)	23.2 (73)	50.3 (163)
		21.1%	60-70%	80-90%
		100	-	113
			Delta 2000-8	Pasir Panjang
	( 13 )	95 (11 )	113 (2 )	114 (1 )
	가	가	feeder 가	
	가	EU 가		

: 1) 1998 ,

1995 .

2)

6 ( , , , 가

, , VTS, ), 5 ( , , , ,

, , ), 5 ( , , , , ,

T/S ), 6 ( , , , , , ,

) . , , 가 , , , , , ,

, , , , , 13 .

3)

: (1999a, 1999b, 1998a, 1998b), CI Yearbook 1999,

(1997a), (1997), (1999), . 가

3.

1)

가 , ,  
 . EU 가 EU 11)  
 , EU 3 0 20%  
 5 8%,  
 가가 (Excise Tax)  
 가 .  
 ‘ , ((Periodic  
 Declaration) ‘ ,  
 , 가 EDI  
 Sagitta ( ) , Profile  
 C/S ( ) 12) EMS(External Message  
 Server)  
 EDI . EDI  
 가 (SAD 13))  
 RODES , RODES EDI  
 , 가  
 . 가  
 2 , 가  
 . EU 가

11) European Community Customs Law(Council Regulation 2913/92)

12) Profile White ( 60% ) , Green (15%), Orange (20%), Red .

13) EU ( : SAD, Single Administrative Document)



14) 가 Port-Net

가  
가

Keppel, Pasir Panjang, Sembawang, Jurong, Changi

4 , 1 < 3- 18>

5 76 15)가

가

GST

< 3- 18> 가

Keppel FTZ	PSA( )	783	• Keppel, Brani, Tanjong Pagar (30 )
Pasir Panjang FTZ	PSA( )	197	• (49 )
Jurong FTZ	Jurong Town Corp.	186	• (15, 7)
Sembawang FTZ	PSA( )	60	• (4 ) hub,
Changi FTZ	CAAS	73	• 6

: Jurong Town Corp( ), CAAS(Civil Aviation Authority of Singapore, ),

: (1998), p.153

14) 가 (Customs Act, Chapter 70)

(Free Trade Zones Act: Chapter 114)

15) Bonded Warehouse(55 , ), Government Warehouse(1 , ),  
Licensed Warehouse(20 , )

2)

가

8%

가

EDI

對 가 對

, 60 가

, , , ,

, 3

3

, 가

ODCY 가<sup>16)</sup>

< 3-19>

가 18 28 9 9 . 1998

, , ( ),

, 1999 1 가

가

16)

T ,

·

'R'

가 . 1999 4  
 , 1  
 1 , 13 17  
 5 .  
 (1998. 6.  
 ), (1998. 8. ), PL (Paperless,  
 , 1999.5. )<sup>17)</sup> , 30 ,  
 가 . (1998. 12.  
 28) 가 1999 4 ,  
 ( , , .가 , , ,  
 )

< 3-19> .

	1998	1999
	12 (20 ) / / / / / / / / / / /	5 (5 ) / / / /
	6 (8 ) / / / / /	4 (4 ) / / /

: [www.momaf.go.kr/doc/policy/02019a.htm](http://www.momaf.go.kr/doc/policy/02019a.htm) ( )

< 3-20> , , 가

17)

. PL

가 , 가 .

< 3-20> . 가

			가
	)		
.			
	7.9%	0- 20% (EU 가)	(4 )
.	/		,

: 5 30 , ‘ ’  
 ‘P/L ’ 30 .

4.

1)

INTIS B.V  
 (INTIS: International Transport  
 Information System) 1985 . INTIS  
 , , EDI  
 , Sagitta  
 가가 . Sagitta 1980  
 RODES 가 2003 가  
 Sagitta 2000 .

INTRACON(Intermodal Transport of Containers)

EDI

DSL, DDE

가 1985 가

CITOS(Computer Integrated Terminal Operation System,

) , , Port-Net

Trade-Net 1989

Port-Net

가 Air Cargo Community

2)

(Port-MIS),

, EDI

(KL-Net) ( ) (KTNet) ,

(CAMIS) . , ,

KL-Net KTNet .

Port-MIS KL-Net , CAMIS KTNet

, KL-Net KTNet .

< 3-21>

INTIS

, 가 CITOS Port-Net Trade-Net

, KL-Net, KNet

< 3-21> . 가

	: KL-Net, KNet Port-MIS,	. KL-Net KNet . Port-MIS KL-Net CAMIS KNet . KL-Net, KNet
	: INTIS, Sagitta : DSL · DDE	. INTIS: Rotterdam . . Sagitta Rodge 가
가	: Trade Net/Port Net : CITOS	. (Trade Net) (Port Net) . Trade-Net : , , 600 가 가 EDI . Port-Net : On-Line Service , , , 1400 가 가 . CITOS:

## 2 가가

### 1. 가가

1)

Distripark 가가  
Distripark 가 가  
1993 Maasvlakte  
38  
가 , Distripark  
Distripark  
Distripark 가  
가 가  
18)  
30 40% 7%  
< 3-22> (EDC)  
가가 , 가가  
Distripark  
< 3-23> Eemhaven Distripark, Botrek

18) 28,000-32,000 (12-14.5 /m<sup>2</sup>) 5% .(  
( ) (1998b), p.6)

Distripark ( ), Maasvlakte Distripark

< 3-22> EDC 가가

( : US\$)

	<sup>1)</sup>	VAL <sup>2)</sup>	2) - 1)
	34,500,000	34,500,000	0
	168,711	98,672	70,039
	6,446,639	2,900,079	3,546,560
	1,329,251	868,302	460,949
	0	937,500	937,500
	42,444,601	39,304,553	3,140,048

: 1) EDC

2) EDC 가가 (VAL)

: (1998), p.84

< 3-23> Distripark

( : )

Eemhaven Distripark	1989	72,000	Home Terminal - 가가 - .
Botlek Distripark	1990	50,000	Botlek Terminal -
Maasvlakte Distripark	1997 - 가 (2005 )	257,000(1 )	Delta Terminal - (EDC) - 378,000
	-	379,000	

: ( ) (1998c), p.84,

(1997), p.287

가 Distripark

.(< 3-24> )

, Distripark , ,

가

, 20km .

, Pasir Panjang Distripark 3 1 70  
 , Alexandra Distripark 10 3 가

, 가 Distripark , Pasir Panjang

< 3-24> 가 Distripark

Keppel Distripark	112,000m <sup>2</sup> (34,000 )	· :2 4 · :5 1 · CY:800cgs · · ,	· Tanjung Pagar, Keppel, Brani 3 · 2 (14m ) · CFS · PSA EDI ·
Alexandra Distripark	211,600m <sup>2</sup> (64,000 )	· :10 5 · , ·	· Distripark · , , 300 · 가
Pasir Panjang Distripark	200,000m <sup>2</sup> (60,000 )	· :1 8 · :3 1	· 가 9m, rack 가 · 170
Tanjung Pagar Distripark	65,200m <sup>2</sup> (20,000 )	· :5 2	· , , ·

: [www.psa.com.sg/warelog/html/whse.html](http://www.psa.com.sg/warelog/html/whse.html)(PSA)

< 3-25> 가 Distripark

, Distripark

< 3-25>

가

Distripark

( : m<sup>2</sup>)

		가
	· Distripark	· Distripark
	· Maasvlakte Distripark 850 · Eemhaven Distripark 238 · Botlek Distripark 165	· Keppel Distripark 112 · Pasir Panjang Distripark 200 · Alexandra Distripark 211 · Tanjong Pagar Distripark 65
	·	· PSA( )
	· ( , , )	· PSA( )
	· HIDC	· PSA( )
	· , ,	· , ,
	· ( 가 )	· ( 가 )
	· 가 · Maasvlakte Distripark	· Pasir Panjang Distripark ·

2)

Distripark

.19)

< 3- 26>

19) 1 (1999- 2001 ) Distripark  
( : ) Distripark  
(2002- 2006 ) 3 (2007- 2011 )

2  
Distripark

,20)

5 15%

< 3-26>

1 -2

( : , %)

		1 (2007 )	2 (2011 )
		230,000	100.0
		76,600	36,900
		68,100	51,100
	C F S	27,300	20,500
		5,800	6,600
		177,800	77.3
가	가 / /	36,900	34,100
		1,000	1,000
		37,900	16.5
		775	400
		871	1,100
		621	300
		227	900
		2,494	3,000
	( )	300	300
		8,100	3.5
	( )	200	
		4,700	
		200	
		100	
		5,200	2.3
-	1,000	0.4	
		1,000	0.6

: ( , )

: ( ) (1998a), pp.176- 178

.( (1998), pp.97-99)

20) ( ) (1998a), pp.157- 189

2.

1)

가 , , 가 .

International Distribution Council)가 , (HIDC: Holland  
Netherlands Foreign Investment Agency) (NFIA: .

HIDC , 6 50 가 .  
HIDC  
EDC ,  
3 (Third Party

Logistics)  
HIDC 가 ,

NFIA (The Dutch Ministry of Economic Affairs)  
가 , , 가 ,

가 가

2000 Plan) , ' 2000'(Logistics

1997 7 (LEAP)

10

PSA( ) ' ,

Sale , PSA( )

2)

< 3-27>

1996 40.7% , 28.7%

62.2% ,

14.9% , 11.2% ,

88.3%

1995 6.2% , 가가 40.5% ,

27.4% , 23.0% , 1

.( (1997))

가 ,

가  
가  
가  
< 3-28>  
가

< 3-27> (1996 )  
( : , , %)

		13,669	5,567	40.7	100.0	834	239	28.7	100.0
		9,433	3,777	40.0	67.8	211	27	12.8	11.3
		8,623	3,461	40.1	62.2	161	22	13.7	9.2
		293	219	74.7	3.9	29	5	17.2	2.1
		517	97	18.8	1.7	21	-	-	-
		4,236	1,790	42.3	32.2	623	212	34.0	88.7
		733	226	30.8	4.1	144	30	20.8	12.6
		1,411	830	58.8	14.9	294	129	43.9	54.0
		1,963	625	31.8	11.2	168	40	23.8	16.7
		129	109	84.5	2.0	17	13	76.5	6.4

: (1997b)

< 3-28 >

			가
		3 , 4	
	( )	2 , 2	
	,	( 17 , 18 , 27 ), ( 14 ), ( 7 )	가
		25	
	,	34	
		8	
		4	
		29	
		3	
		7	가
		48 2 5	
		58 2	
		8 , 24 , 39	
		15	
		6,7	

: (1998), p.276

3535 ) ' ( 1999.5.20 가 .



# 4

## 1

가  
( ),  
가 ,  
, , 가 .  
, , , .  
, , , .  
,  
(E. G. Frankel(1987);240, (1998);117)  
(1998;313- 327) (1999;115- 134)  
( ) , , 가가  
,  
가  
5TEU, 3TEU , ,  
4TEU, 1.2TEU  
2001 7 61 TEU가 가 ,  
2011 2 2 75 TEU 가 , 2001 2 83 TEU,  
2011 8 72 TEU .

ODCY 0.0129  
, 2001

1 4 7 , 1 5 7 , 2011 3

9 3 , 5 4 4 .

가가 가 가가 1 32 110% 1 1 35

, 2001 12 9 5 , 2011 34 6

3 , 2001 13 8 5 , 2011 47 9

가 .

, 2001 95 7 2011 2 13 5

2 .

, ,

가 가

, ,

가 가

21)

, 가 25% 50%

가 , 가

. 28 9 8 52 7 3

21) LFIQ = 2.94 - 0.47LRP + 0.77LGDP

LFIQ = log , LRP = 가 log  
 LGDP = log



가 ,  
 가 ,  
 가 .

2

1.

가  
 .  
 , (TEI), (GDP), (TTP)  
 (THC)  
 .  
 (TAR) (FRE)  
 가 .  
 (TAR), (TEI), (FRE),  
 (THC), (GDP) (4.1)

$$TTP = f(TAR, TEI, FRE, THC, GDP) \dots \dots \dots (4.1)$$

(TTP)

(TAR)

(1999) (HS )  
가

(TEI) 「 」  
, 1995 1995 가  
가 가 .23)

(FRE)  
HS10

(THC) 1998 90%  
ODCY , ODCY ITEU  
가<sup>24)</sup> 1995 가 가  
1998 4%  
가 가 4%  
(GDP) 「 」 1995  
가

(TAR) (TEI)  
(4.2)

SPSS8.0 ,  
가 1977 1998  
22 .

$$TTP_t = a + b TAR_t + c TEI_t + \mu_t \dots \dots \dots (4.2)$$

23) 가 가 가  
가 , 가 .  
24) 1998 ODCY ITEU 94,589 ,  
ODCY , ODCY .

2.

(TAR)

가

(4.2)

(4.3)

(OLS)

(4.4)

$$LTTP_t = b LTAR_t + c LTEI_t + \mu_t \dots \dots \dots (4.3)$$

( $LTTP_t = \log(TTP_t)$ ,  $LTAR_t = \log(TAR_t)$ ,  $LTEI_t = \log(TEI_t)$ )

$$LTTP_t = 3.876 - 0.406LTAR_t + 0.639LTEI_t \dots \dots \dots (4.4)$$

(0.960) (- 1.317) (3.607)

$$adj R^2 = 0.96 \quad F = 216.203$$

(TAR)

가 (-)

가

0.406

(TEI)

(+)

0.639

3.

0.406 가 1% (TAR) (-) 0.406%

가 , 100% ,  
40.6% 가 ,25)  
가 40.6% , 가

2001

1999 12 「

」 26) 6 3 9 TEU

가 , (4.5)

2 45 2 TEU 가 . 1974 1997

1 3 1998

2 42 4 TEU 가 .

25) 가 40.6% 가

가 2001 , 3 가

7 61 TEU , 2001 7 91 TEU 96%

2001 96% 가

2 가 ,

가 ,

1997 52 2 4

28 9 8 52 7 3 , 1997 55% 101%

가 . 가

26) 2000 1 .

< 4-1> , 2001  
 가 8 49 1  
 TEU .

$6,039,000\text{TEU} \times 0.406 = 2,452,000\text{TEU} \dots \dots \dots (4.5)$

< 4-1> (2001 )  
 ( : TEU)

(A)	(B)	(A+B)
6,039	2,452	8,491

: .

4.

가  
 .  
 , 1999 On-Dock .  
 2000 On-Dock 가 .  
 , 1% 가  
 2001 . 1980 1997 4%  
 27) 가  
 2000 .  
 가 , 2001  
 , (4.6) 1 8 26 가

27) 1998  
 1999

2,452,000TEU x 74,467.3 \* 1,826 . . . . . (4.6)  
 ( \* : 2001 On-Dock TEU )

5.

1)

가 가 .

가가 .

가가 , 가

가 90% , (

)가 가 .

가 「 1995 」

가 , 402 ,

가 402

39

가 , 가 2.604347,  
1.746638, 1.571733 , ‘ 가 가

5.922718  
가 1 가 , ,  
1.000001, 1.000523, 1.000293 가  
3.000817 가 , 1.604346,  
0.746115, 0.571440 가 2.921901 가

가  
< 4-2> .  
5 6 57  
6 2 70 ,  
4 5 45 , 1 8 15

< 4-2>

( : )

1.	182,600	0.4	0.2	182,601
2.	16,173	182,695	97	198,965
3.	1,311	153	182,654	184,118
4.	5,123	80	57	5,260
5.	12,562	3,431	2,052	18,045
6.	898	2,615	100	3,613
7.	1,185	910	617	2,712
8.	636	452	365	1,453
9.	13,814	114	14	13,942
10.	185	146	106	437
11.	11,579	651	146	12,376
12. ( . )	1,516	1,047	949	3,512
13.	2,373	2,842	1,721	6,936
14.	16,746	4,496	4,325	25,567
15.	3,733	4,169	2,545	10,447
16. 가	1,348	1,776	1,936	5,060
17.	2,261	2,421	1,558	6,240
18. ,	2,130	1,728	1,369	5,227
19. .	26,969	8,036	5,349	40,354
20.	6,706	5,234	6,422	18,362
21.	563	444	632	1,640
22. 1	5,223	2,887	2,859	10,969
23.	1,893	856	786	3,535
24.	4,541	4,168	2,821	11,530
25. .	2,336	1,640	2,116	6,092
26.	431	242	436	1,109
27.	7,698	2,507	2,224	12,429
28.가	620	553	544	1,717
29. .가 .	2,842	2,901	11,427	17,170
30.	720	753	2,025	3,498
31.	2,946	2,122	1,885	6,953
32.	1,889	2,393	1,416	5,698
33.	3,576	3,134	2,640	9,350
34.	14,141	12,844	6,421	33,406
35.	105,346	44,246	22,493	172,085
36.	0	0	0	0
37.	1,963	2,503	7,049	11,515
38.	851	1,138	700	2,669
39.	8,123	10,151	5,866	24,140
	475,554	318,936	286,998	1,081,488

2) 가가

1 가 .  
 가가 가가 .  
 가가 , 0.358304,  
 0.943571, 0.951064 ‘ ’ 가가  
 가 .  
 가 1 가  
 1.571733 가 , 가가 0.951064  
 가 . 0.465866, 0.268033,  
 0.098352, ( - ) 0.118813 가  
 .  
 1 가 .  
 가가 0.943571 가  
 , 0.591702, 0.218894,  
 0.095431, 0.037545 가 .  
 가가 가 0.358304 가 ,  
 0.148580, 0.105056, 0.084104, 0.020564  
 가 .  
 가가 가가  
 < 4-3> 4 1 14 .  
 가가 1 7 37 , 1 7 23 ,  
 6 54 . 가가  
 가가 2 2 2 가

< 4-3>

가가

( : )

	27,131	108,045	85,067	220,243
	19,183	39,970	48,943	108,096
	15,357	17,426	17,959	50,742
-	3,755	6,856	21,695	32,306
가가	<b>65,426</b>	<b>172,297</b>	<b>173,664</b>	<b>411,387</b>

3)

「 1995 」 402 가  
168 35 ,  
. 168  
‘ ’ .  
0.010188, 0.033257,  
0.025235 ‘ ’ 가 가  
. ‘ ’ 가 0.003392,  
‘ ’ 0.002361 ,  
. ‘ ’  
, , ,  
가 ‘ ’  
가 가

< 4-4 >

9 4 57

,

1 25 ,

2 5 16

1 2 5 41

< 4-4>

( : )

1.	870	12	1	883
2.	13	4,930	2	4,945
3.	10	3	3,616	3,629
4.	5	5	4	14
5.	31	99	65	195
6.	2	4	2	8
7.	43	6	4	53
8.	274	21	3	298
9.	5	15	9	29
10.	1	2	4	7
11.	10	30	18	58
12. 가	9	26	28	63
13.	6	16	9	31
14. ,	21	29	24	74
15. .	12	5	4	21
16.	22	28	36	86
17.	3	5	6	14
18. 1	5	7	7	19
19.	12	9	9	30
20.	12	32	22	66
21. .	10	12	17	39
22.	2	2	4	7
23.	39	24	21	84
24.가	4	11	12	27
25. .가 .	4	10	47	61
26.	9	16	38	63
27.	26	35	31	92
28.	47	143	83	273
29.	23	32	27	82
30.	246	249	124	619
31.	61	168	202	431
32.	0	0	0	0
33.	14	49	106	169
34.	11	37	23	71
35.	0	0	0	0
	1,861	6,072	4,608	12,541

6. 가

1997  
 가 , < 4-5>  
 , 1 8 15 1997  
 (GRDP) 27 7 5 98 3.9%, 1997 17 6 9  
 50 6.1%  
 , 가가 4 1 14 1997  
 가가 5 1 2 8.0%  
 , 1 2 5 41 1997  
 1 9 5 7 18 1.2%, 24 3 3 62  
 5.2%

가

가가

가

< 4-5>

가

( : , , %)

		가가	
(1997 ) (A)	GRDP: 277,598 : 176,950	51,200	: 1,095,718 : 243,362
(2001 ) (B)	10,815	4,114	12,541
(B/ A)	3.9 6.1	8.0	1.2 5.2

: (1999a), (1999b), (1998)

5

1

가

, , , , , 가 ,

, ,

가

.

, 가

3

.

.

1.

.

4

2001

40.6% 가 8 49 1 TEU

2001

가 4 68 TEU, 8 98 TEU<sup>28)</sup>

가

On-Dock CY

2

3 4

CY

가

30

가

'29)

, 4

'30)

'31)

28) 1999 420 TEU 2001 48 TEU,

430 TEU 898 TEU

29) (1999b)

IC

· 54km, 25.6-35m

· : 1981-2005

가

2.

< 5-1>

가

1

가  
가

, ( , , , )

가

1999 1

가

가

On-Dock

가

32)가

30) 4

2010

TSR, TCR

31) 4

7

9

, 1998 87,000km ( . )

2020 200,000km

32) On-Dock

15% 20%

가

(www.shinsundae.co.kr/h\_news990101.html( ))

‘Transshipment Special Zone’

< 5-1> 가

		가
	· 가	·
	· (On-Dock 가 )	·
	· : 4 · : 3 · : 7 · On-Dock CY 10	· FCL - : 3 / : 2 - overweight/width: 2 · / : 7 -9 *CY가 가 28
	· ODCY 가	· Port-Net 가
	· 20% · 24	· 4km <sup>2</sup> · 80-90% · (24 )

: (1996), p.71,  
[www.customs.go.kr](http://www.customs.go.kr)( ), [www.momaf.go.kr](http://www.momaf.go.kr)( )  
[www.psa.com.sg](http://www.psa.com.sg) (PSA)

3.

, , , P/L  
 , 가 ,  
 , 가 , LCL  
 ,<sup>33)</sup>  
 ,  
 , 24  
 , 가 .

4.

, , ,  
 , , ,  
 , (KL-Net),  
 (KNet) DB ,  
 , (Port-MIS), (KROIS),  
 , ,

---

33) FCL

ODCY  
가

가

5.

가가

ODCY

3 4 , 3

26 8 TEU 6.7 9.0TEU 가 가

34)

가 , 5 10

.( < 5-2> < 5-3> )

< 5-2>

( TEU)	( TEU)	(TEU)	(TEU)
3,580	268	4.6	6.7 - 9.0

: 1) 1998 , 7.5%  
2) : 78 6

34) Distripark 5 10% (  
( ) (1998b), p.5) 7.5%

< 5-3> 가 Keppel Distripark

( TEU)	Distripark ( TEU)	(TEU)	Distripark (TEU)
14,510	1,088	18.5	20.1

: 1) 5-2

2) Keppel : (66 9 ) + Distripark(54 )

< 5-4>

1 19

1 37 3 , 2 19 3 56 6

, 1998 8 38 7

.( < 3-26 > )

6

1 29% ( ( ) (1998d);77),

가

가

가 가

< 5-4>

( : , %)

		1	2		
		932,745	260,000	1,192,745	100
( , )		373,240	192,580	565,820	47.4
		229,769	-	229,769	19.3
		105,619	-	105,619	8.9
		32,537	-	32,537	2.7
		35,149	-	35,149	2.9
		41,229	-	41,229	3.5
		3,558	-	3,558	0.3
		1,392	-	1,392	0.1
		10,285	-	10,285	0.9
		329,736	67,420	397,156	33.3
		3,680	-	3,680	0.3
		6,156	2,420	8,576	0.7
	.	134,408	37,000	171,408	14.4
		185,492	28,000	213,492	17.9

: ( ) (1999), p.5

6.

가 .35)

35) Mersey Docks and Harbour Company  
 Sheerness  
 , Hull Transport Development Group Ltd.  
 250 24  
 .( (1998), p.12)

가,

3

가

가 ,

, 3

가

가

가가

(가 )

2

· , 가 ,  
· , 가  
· , , 가  
· , 가  
· , 가  
· , 가 ,  
· ICD( ) ,

36)

---

36) , 가 ,  
, , 가 ,





< 5-6 >

		2		
		2		
distripark		2 7	( )	ICD
		2 9	,	
	가	2		
	( )	18		
		2		
	/	2		
	, , , ,	2		

: (1998), p.268

6

가  
가

가 가

가

가가

, 가

가

, 가가

, 2001

가



가 ,

가

가가  
가

가

가

가 ,

40%

1998 6

가

가 1999 12

가가



[ ]

- (1999), 「 가 」  
(1999), 「 」,  
(1996), 「 」,  
(NFIA) · (HIDC)(1999), 「 가 」,  
(1997), 「 가 」  
(1998), 「 」  
(1995), 「 」,  
(1999a), 「 」  
—— (1999b), 「 ( )」  
—— (1998), 「 」  
( ) (1999), 「 가( ) 」  
—— (1998a), 「 」  
—— (1998b), 「 Distri park - , 」  
—— (1998c), 「 」  
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1.	1.000001	0.000002	0.000001	1.000004
2.	0.088568	1.000523	0.000530	1.089621
3.	0.007183	0.000839	1.000293	1.008315
4.	0.028054	0.000439	0.000311	0.028804
5.	0.068794	0.018792	0.011239	0.098825
6.	0.004920	0.014320	0.000548	0.019788
7.	0.006489	0.004982	0.003382	0.014853
8.	0.003485	0.002474	0.002001	0.007960
9.	0.075654	0.000622	0.000077	0.076353
10.	0.001014	0.000801	0.000580	0.002395
11.	0.063412	0.003564	0.000798	0.067774
12. ( . )	0.008300	0.005733	0.005202	0.019234
13.	0.012995	0.015566	0.009425	0.037986
14.	0.091711	0.024623	0.023684	0.140018
15.	0.020445	0.022833	0.013938	0.057216
16. 가	0.007380	0.009726	0.010606	0.027712
17.	0.012385	0.013260	0.008530	0.034175
18. ,	0.011667	0.009463	0.007497	0.028627
19. .	0.147699	0.044008	0.029292	0.220999
20.	0.036728	0.028663	0.035167	0.100558
21.	0.003086	0.002434	0.003461	0.008981
22. 1	0.028606	0.015810	0.015659	0.060075
23.	0.010366	0.004689	0.004304	0.019359
24.	0.024872	0.022824	0.015449	0.063145
25. .	0.012792	0.008981	0.011590	0.033363
26.	0.002361	0.001327	0.002388	0.006076
27.	0.042157	0.013731	0.012179	0.068067
28.가	0.003395	0.003028	0.002979	0.009402
29. . 가 .	0.015563	0.015887	0.062578	0.094028
30.	0.003944	0.004122	0.011089	0.019155
31.	0.016133	0.011623	0.010325	0.038081
32.	0.010343	0.013107	0.007754	0.031204
33.	0.019586	0.017161	0.014459	0.051206
34.	0.077443	0.070341	0.035165	0.182949
35.	0.576924	0.242311	0.123183	0.942418
36.	0.000000	0.000000	0.000000	0.000000
37.	0.010751	0.013706	0.038603	0.063060
38.	0.004660	0.006233	0.003832	0.014725
39.	0.044485	0.055589	0.032127	0.132201
	<b>2.604347</b>	<b>1.746638</b>	<b>1.571733</b>	<b>5.922718</b>



