

Korean Verbs That Express Rising Stock Market Situations^{*}

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Lee, Dong-Young. 2009. Korean Verbs That Express Rising Stock Market Situations. *The Linguistic Association of Korea Journal*. 17(2). 43-63. This paper investigates the behavior of diverse verbs that are used to convey the rising situations in Korean stock markets on the basis of the constructed corpus that contains everyday online news on stock markets. Since situations in stock markets change constantly, a lot of verbs are used in the stock market news to report their situations. The occurrence frequency and the collocate of the verbs related to rising situations vary from verb to verb. Some verbs occur together with various types of expressions (a rising rate, a rising level, a rising amount, a degree adverbial, a scale adverb, a temporal adverbial, and so on), whereas others occur with only a few types of them. The knowledge about the constraint on the behavior of these verbs makes it possible to find out whether a very high-rising situation occurs or not by just looking at them in stock market news.

Key Words: behavior of verbs, corpus, Korean stock market news, types of collocate

1. Introduction

There has been a lot of research on lexical items (Botley and McEnery 2001, McEnery and Xiao 2005), phrases (Petch-Tyson 2000, González-Díaz 2008), constructions (Kreyer 2003, Riordan 2007), and expressions (Couper-Kuhlen 2004, Nesselhauf and Römer 2007) on the basis of empirical data drawn from a

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corpus. Some research (Kennedy 2002, Szmrecsanyi 2003, Nokkonen 2006) has also been conducted on the meaning, use, or distribution of verbs among lexical items, based on the corpora of written or spoken English. In particular, Kennedy (2002) analyzed the distribution of nine modal verbs with the help of the relative frequency of their occurrence in the British National Corpus. He showed that there are substantial differences in the frequency with which these modal verbs are used depending on text types (spoken or written), contexts (affirmative or negative), genres, and the structure of verb phrases in which these verbs appear. Following the study that is based on the frequency of a bundle of verbs appearing in a corpus, this paper explores the use and behavior of many verbs that convey the rising situations in Korean stock markets. To conduct the research I constructed the corpus that contains diverse online stock market news. This is the first attempt to comprehensively investigate the environment of Korean verbs that express bullish stock markets based on real data from stock market news.

In the constructed corpus of stock market news a large number of verbs are used in various forms. For example, the sentences in (1) contain some forms of the verbs.

- (1) a. *khosuphi-ka* 1380-*sen-ul* *hoypokha-ko* *iss-ta*.¹⁾
 Kospi-nom line-acc recover-conj prog-dec
 'Kospi is recovering the 1380 line.'
 (www.eaily.co.kr updated at 10:17 on Dec. 13, 2006)
- b. *ceyilmocik-i* 2.3% *sangsunghayss-ta*.
 Cheil Textile Inc.-nom rose-dec
 'Cheil Textile Inc. rose 2.3%.'
 (www.hankyung.com updated at 16:12 on Sept. 1, 2006)
- c. *eylcikhatu-nun* 4.3% *olu-mye* *sangsungsey-lul*
 LG Card-top go up-conj rising trend-acc
iekass-ta.

1) The abbreviations used in glosses are as follows:

nom: nominative:	top: topic	acc: accusative
conj: conjugational	prog: progressive	dec: declarative
postp: postposition	mod: modifier	

continued-dec

'LG Card continued the rising trend, going up 4.3%.'

(www.mk.co.kr updated at 15:51 on Aug. 16, 2006)

d. tayhanwhasem-un

20-manwen-ul

Daehan Synthetic Fiber Co.-top ten thousand won-acc

tolphahayss-ta.

broke through-dec

'Daehan Synthetic Fiber Co. broke through 0.2 million won.'

(www.akn.co.kr updated at 15:17 on Sept. 19, 2006)

In (1a) the form *hoypokha-ko*, which is a member of the verb HOYPOKHA-TA 'recover,' appears. In (1b) the form *sangsunghayss-ta*, which belongs to the verb SANGSUNGHA-TA 'rise,' appears. In (1c) the form *olu-mye*, which is a member of the verb OLU-TA 'go up,' is used. Finally, in (1d) the form *tolphahayss-ta*, which belongs to the verb TOLPHAHA-TA 'break through,' is used.

This paper shows that there are differences between the verbs related to bullish stock markets in their frequency and collocation unlike general understanding of their behavior. Some verbs occur far more frequently than other verbs even though they have similar meanings. There are various types of expressions with which these verbs co-occur (for instance, a rising rate, a rising level, a rising amount, a degree adverbial, a scale adverb, a temporal adverbial, etc.). The collocates of some verbs are diverse, whereas those of others are restricted. The reason the corpus of the stock market news is used in this study is that it contains a lot of data that clearly show the behavior of these verbs.

2. Corpus

I constructed the corpus that contains financial reports of various situations occurring in Korean stock markets by collecting daily online news of many newspapers (*Asia Economy Newspaper, Donga Daily Newspaper, Korea Economic Daily, Mael Business Newspaper, Chosun Daily Newspaper, Seoul Economic Daily*, and so forth). Both the realtime news on situations in trading hours (9am-3pm) and the comprehensive news on the final result of daily trading are included in the corpus.

- (2) a. ocen 9-si 47-pwun hyencay khosutak-ciswu-nun
 morning o'clock minute as of Kosdaq-index-top
 cenil-pota 1.61 phointu olu-n 580.22-lul
 previous day-postp point go up-mod acc
 kilokha-ko iss-ta.
 record-conj prog-dec
 'As of 9:47am the Kosdaq index is recording 580.22 that moved 1.61
 point higher than the previous day.'
 (www.sedaily.co.kr updated at 10:03 on Oct. 19, 2006)
- b. oykwukin-kwa kayin-i kakkak 27-ek-wen
 foreigner-postp individual-nom each 0.1 billion-won
 mich 423-ek-wen-ul swunmayswuha-n panmyen,
 and 0.1 billion-won-acc buy net-mod whereas
 kikwan-un 338-ek-wen-ul swunmaytohayss-ta.
 institution-top 0.1 billion-won-acc sold net-dec
 'Foreigners and individuals bought (stocks that are worth)
 2.7 billion won and 42.3 billion won net respectively, whereas
 institutions sold (stocks that are worth) 33.8 billion won net.'
 (www.edaily.co.kr updated at 15:59 on Sept. 21, 2006)

The sentence in (2a) conveys realtime information about the index of a stock market during daily trading hours. On the other hand, sentence (2b) summarizes the total value of stocks bought or sold by participants in a stock market after trading is finished.

I collected the financial reports on Korean stock markets from August to November 2006. The corpus of the stock market news consists of four texts, each of which contains the news on the situations that occurred in stock markets during a whole month. The number of words that appear in each text is around 13,300. The total size of the stock market corpus that contains the data collected during the period is 53,106 words.²⁾ In total 5,419 sentences appear in the corpus. Thus, the average length of these sentences is 9.8 (=53,106/5,419) words. Since the constructed corpus contains everyday financial news from diverse

2) In the constructed corpus the word separated by a space in a sentence is counted as one word.

sources in the period of four full months, it has enough and balanced data on the ever-changing stock markets.

3. Verbs and Their Forms

The price of stocks and the index fluctuate constantly in stock markets. Thus, the reports about these markets contain diverse forms of verbs that convey bullish situations. In the constructed corpus of stock market news many verbs are used to convey various rising situations.

Table 1. Verbs Conveying Bullish Situations

verb	form:frequency	number of forms	frequency of verb
OLU-TA 'go up'	olu-n:328, ollass-ta:208, ollass-ko:102, olla:94 olu-mye:57, olu-ko:51, olu-nun:23, ollass-supnita:16 ollass-umye:12, ollass-una:10, ollass-ciman:6 ollass-ten:5, olu-myense:4, olu-ci:2, ollass-ul:1 ollass-taka:1, olu-n-teyta:1, olu-myen:1	18	922
SANGSUNGHA-TA 'rise'	sangsunghayss-ta:164, sangsungha-ko:105 sangsungha-n:82, sangsunghayss-ko:54 sangsungha-mye:44, sangsungha-nun:23 sangsunghay:15, sangsunghayss-supnita:13 sangsunghayss-ta-nun:11, sangsungha-myense:9 sangsunghayss-umye:9, sangsunghayss-ciman:6 sangsunghayss-ul:5, sangsung-cwung-ita:5 sangsunghayss-una:5, sangsungha-l:3 sangsunghayss-ten:3, sangsungha-n-tey:3 sangsungha-myen:2, sangsunghayss-taka:1 sangsung-cwung-iko:1, sangsungha-n-tey:1	22	564
KUPTUNGHA-TA 'skyrocket'	kuptunghayss-ta:48, kuptunghayss-ko:15 kuptungha-n:12, kuptunghayss-ten:10 kuptungha-ko:5, kuptungha-mye:4 kuptungha-n-tey:3, kuptunghayss-ta-nun:3 kuptungha-nun:2, kuptunghay:2 kuptungha-n-ci:1, kuptungha-ki-pota-nun:1 kuptungha-taka:1, kuptungha-myense:1 kuptungha-n-teyta:1, kuptunghayss-umye:1 kuptunghayss-ciman:1	17	111
HOYPOKHA-TA 'recover'	hoypokhayss-ta:41, hoypokha-n:13, hoypokha-mye:8 hoypokhayss-ko:6, hoypokha-ci:3, hoypokha-ki-to:3 hoypokha-ko:2, hoypokhay:1, hoypokhayss-ten:1 hoypokha-ca:1, hoypokha-nun:1, hoypokha-nuntey:1 hoypokha-ki-pota:1, hoypokhayss-ta-nun:1	14	83

PANTUNGHATA 'rally'	pantunghayss-ta:19, pantungha-ko:15, pantunghayss-supnita:12, pantungha-mye:10 pantunghayss-ko:10, pantungha-n:6 pantunghayss-ciman:3, pantunghayss-una:2 pantunghay:2, pantunghayss-ten:1 pantungha-l-kka:1, pantungha-myen:1 pantunghayss-umye:1	13	83
TOLPHAHA-TA 'break through'	tolphahayss-ta:11, tolpaha-mye:5, tolpaha-nun:3 tolpaha-n:3, tolpaha-ki-to:2, tolpahayss-ko:1 tolpaha-ki-ka:1, tolpaha-nun-tey:1, tolpahay:1 tolpaha-n-tey:1, tolpahayss-ciman:1 tolphahayss-ta-nun:1, tolpaha-n-teyta:1	13	32
CHISOS-TA 'soar'	chisosass-ta:15, chisosass-ko:5, chisos-umye:5 chisos-nun:4, chisosass-ten:1, chisos-ul:1	6	31
NEMESE-TA 'go over'	nemesess-ta:11, nemese-n:5, nemese-mye:4 nemese-kito:2, nemesess-supnita:2, nemese-myen:1 nemese-myense:1, nemesess-ciman:1, nemesess-taka:1 nemesess-tanun:1	10	29
TTWI-TA 'leap'	ttwiess-ta:10, ttwi-e:9, ttwiess-ko:3	3	22
KUNCEPHA-TA 'come near'	kuncepha-ko:4, kuncephayss-ta:3, kuncepha-nun:2 kuncephayss-tanun:2, kuncepha-myense:2 kuncepha-l:1, kuncepha-kito:1, kuncephay:1	8	16
NEM-TA 'cross'	nemess-ta:4, nem-kito:4, nem-ci:2, nemess-una:1 nem-kinun:1, nemess-taka:1	6	13
TAKASE-TA 'approach'	takass-ta:8, takase-kito:2, takase-ko:1 takass-supnita:1	4	12
TTWIEOLU-TA 'jump'	ttwieollass-ta:8, ttwieolu-mye:2, ttwieollass-umye:1	3	11
MANHOYHA-TA 'retrieve'	manhoyhayss-ta:4, manhoyha-n:2, manhoyha-nun:1 manhoyha-nuntey:1, manhoyhayss-tamyen:1	5	9
KKULEOLLI-TA 'drag up'	kkuleollyess-ta:6, kkuleolli-n:1, kkuleolli-ko:1 kkuleolli-nun:1	4	9
KUPPANTUNGHATA 'rally sharply'	kuppantunghayss-ta:3, kuppantungha-mye:2 kuppantungha-myense:1	3	6
THALHWANHA-TA 'recapture'	thalwhanhayss-ta:4, thalwhanha-n:1 thalwhanhayss-ko:1	3	6
TAKAKA-TA 'go near'	takaka-kito:3, takakass-ta:2	2	5
KUPSANGSUNGHATA 'surge'	kupsangsungha-ko:2, kupsangsunghayss-ko:2	2	4
TTWIENEM-TA 'jump over'	ttwienemess-ta:2, ttwienem-un:1	2	3

KKOCHI-TA 'stick'	kkochyess-ta:3	1	3
TALI-TA 'run'	tallyess-ta:1, tallyess-ko:1	2	2
LAYLLIHA-TA 'rally'	layllihayss-ta:2	1	2
CAYPANTUNGHA-TA 'rally again'	caypantungha-nun:1	1	1
PALTOTWUMHA-TA 'stand on tiptoe'	paltotwumhayss-ta:1	1	1

As illustrated in Table 1, a total of 25 verbs is used to describe a rising stock price or index. To extract the verbs related to rising stock markets from the corpus I obtained the list of all words that appear in the corpus by using a concordancing program. From the list I first selected the words whose part of speech is verb and then manually collected only the words that convey rising market situations on the basis of their meanings and concordances. The frequency of these 25 verbs ranges from only 1 to 922. Figure 1 shows the percentage of occurrences with regard to the top five verbs in total frequency.

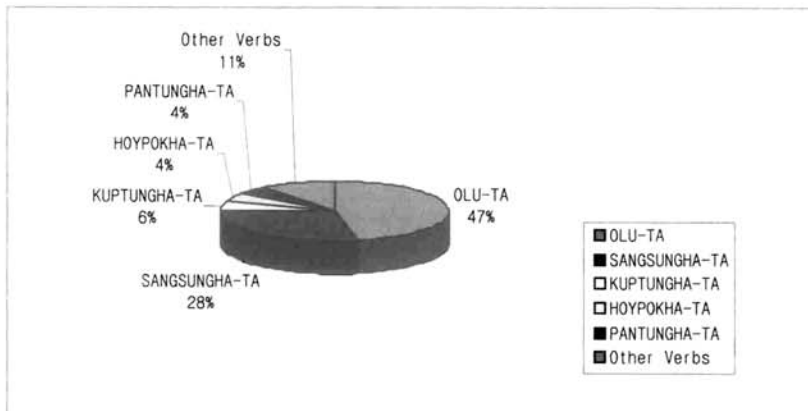


Figure 1. Percentage of Occurrences

As shown in Figure 1, the verb OLU-TA 'go up' occurs most frequently and occupies 47% (=922/1980) of total occurrences. Thus, the verb is used in about

one half of the cases of expressing rising situations in stock markets. The second most frequently-occurring verb SANGSUNGHA-TA 'rise' occupies 28% (=564/1980). Accordingly, the verb is used in more than a quarter of rising cases. The top five verbs in frequency (namely, OLU-TA 'go up,' SANGSUNGHA-TA 'rise,' KUPTUNGHA-TA 'skyrocket,' HOYPOKHA-TA 'recover,' and PANTUNGHA-TA 'rally') occupy as much as 89% (=1763/1980) of all occurrences, whereas the remaining 20 verbs occupy only 11%. It follows from this that the five verbs are used in about 9 out of 10 cases of expressing bullish situations in stock markets. Therefore, the reporters of financial news on Korean stock markets have a strong tendency to use these five verbs in describing various rising situations.

The meaning of the verb OLU-TA 'go up' is very similar to that of the verb SANGSUNGHA-TA 'rise,' and they are used broadly to convey diverse rising situations in stock markets. The former verb, however, occurs over 1.6 times (=922/564) more frequently than the latter one. In particular, when the total number of rising items in stock markets is mentioned, the verb OLU-TA 'go up' is predominantly used.

- (3) a. i-nal cwuka-ka olu-n congmok-un
 this-day stock price-nom go up-mod item-top
 sanghanka 2-kay-lul phohamhay 319-kay-yess-ta.
 upper limit price unit-acc including unit-was-dec
 'This day the items whose stock prices went up were 319, including
 2 items that rose to the upper limit price.'
 (www.edaily.co.kr updated at 16:31 on Aug. 18, 2006)
- b. hanphyen i-nal cwusik kaps-i
 on the other hand this-day stock price-nom
 sangsungha-n cong mok-swu-nun sanghanka
 rise-mod item-number-top upper limit price
 18-kay-lul phohamhay 380-kay-lul kilokhayss-ta.
 unit-acc including unit-acc recorded-dec
 'On the other hand, this day the number of items whose stock prices
 rose recorded 380, including 18 items that rose to the upper limit
 price.'
 (www.moneytoday.co.kr updated at 15:50 on Aug. 21, 2006)

Both sentences in (3) convey information about the number of rising items in a trading day. In (3a), however, the expression *olu-n cong mok* 'items that went up,' which contains a form of the verb OLU-TA 'go up,' is used, whereas in (3b) the expression *sangsunggha-n cong mok*, 'items that rose,' which contains a form of the verb SANGSUNGHA-TA 'rise,' is used. In the constructed corpus of Korean stock market news, the former expression occurs 48 times, but the latter expression occurs only twice. Thus, this result shows that the expression containing a form of the verb OLU-TA 'go up' is used in almost all cases that mention the number of rising items in stock markets.

Likewise, the two verbs, KUPTUNGHA-TA 'skyrocket' and CHISOS-TA 'soar,' are very similar in their meanings. These two verbs are used when a stock price or an index rises by a large percent. The former verb, however, occurs about 3.6 times (=111/31) more frequently than the latter one. This means that the use of the verb KUPTUNGHA-TA 'skyrocket' is preferred to that of the verb CHISOS-TA 'soar' in the report on very bullish situations in Korean stock markets.

Therefore, when rising situations occur in general, the verb OLU-TA 'go up' is used by reporters of financial news more frequently than the verb SANGSUNGHA-TA 'rise.' In addition, when stock markets are very strong in particular, the verb KUPTUNGHA-TA 'skyrocket' is used far more frequently than the verb CHISOS-TA 'soar.'

Among the 25 verbs that are used in describing bullish situations, the verbs such as TALI-TA 'run,' TTWI-TA 'leap,' and TTWIEOLU-TA 'jump' convey the image of a quick movement by legs and feet.

- (4) a. *sin-sengcangtonglyek-ul hwakpohayyss-ta-nun*
 new-growth power-acc secured-dec-mod
phyengka-lul pat-un thieylai-ka 9% tallyess-ta.
 evaluation-acc receive-mod TLi Inc.-nom ran-dec
 'TLi Inc. that was evaluated to have secured new growth power ran
 9%.'
 (www.hankyung.com updated at 15:28 on Sept. 13, 2006)
- b. *thaykwangsane-p-i tasi*
 Taekwang Industrial Co.-nom again
kakyekceyhanphok-kkaci ttwiess-ta.

range of price restriction-postp leapt-dec
 ‘Taekwang Industrial Co. leapt to the range of price restriction again.’
 (www.edaily.co.kr updated at 15:55 on Aug. 29, 2006)

- c. aipulisci-ka 9.8% ttwieollass-ta.
 iBridge Inc.-nom jumped-dec
 ‘iBridge Inc. jumped 9.8%.’
 (www.hankyung.com updated at 15:35 on Aug. 22, 2006)

In (4a) and (4c) the verbs TALI-TA ‘run’ and TTWIEOLU-TA ‘jump’ co-occur with the rising rate of a stock price. Since these verbs have the meaning of a fast or powerful movement, the daily rising rate with which they occur is very high. Moreover, in (4b) the verb TTWI-TA ‘leap’ occurs together with the expression indicating the maximum range of rising within a day. Thus, these verbs are used when a stock price rises considerably high in stock markets.

The verbs such as TOLPHAHA-TA ‘break through’ and THALHWANHA-TA ‘recapture’ have the meanings of moving forward and winning back respectively. These verbs are literally associated with a successful combat in a war and thus it makes sense to use them in describing the rising situations in stock markets.

The 25 verbs illustrated in Table 1 can be classified into four groups according to the morphemes that appear in them. The first group has only a single root without any affix. The four verbs (OLU-TA ‘go up,’ TTWI-TA ‘leap,’ NEM-TA ‘cross,’ and TALI-TA ‘run’) belong to this group. The second group has one root and an affix. The two verbs, CHISOS-TA ‘soar’ and KKOCHI-TA ‘stick,’ which have the affixes CHI and HI respectively, are members of the group. The third group has two roots that are related serially in the aspect of the actions they express. For example, the verb TTWIEOLU-TA ‘jump’ contains two successive roots, TTWI and OLU, the combination of which literally means ‘rise by leaping.’ The other five verbs (NEMESE-TA ‘go over,’ TAKASE-TA ‘approach,’ KKULEOLLI-TA ‘drag up,’ TAKAKA-TA ‘go near,’ and TTWIENEM-TA ‘jump over’) are also members of this group. The last group has the root HA, which combines with a noun to make a verb.³⁾ The remaining thirteen verbs (HOYPOKHA-TA ‘recover,’ SANGSUNGHA-TA ‘rise,’

3) There are claims that the expression consisting of a noun and the root HA functions as a verb phrase in a sentence. Since all such expressions appear as a single word without a space between a noun and the root in the corpus of stock market news, they are regarded

KUPTUNGHA-TA 'skyrocket,' THALHWANHA-TA 'recapture,' and so on) belong to the group. Since one of the most productive ways of making a verb in Korean is to combine a noun with the root HA, the last group has the largest number of members among the four groups explained above. But, the total frequency of the four verbs that belong to the first group (959 occurrences) is higher than that of the thirteen verbs belonging to the last group (918 occurrences). This is ascribed to the fact that the verb OLU-TA 'go up,' which has one single root, is used far more frequently than any other verbs in describing bullish situations in stock markets.

Now, let us look at the number of forms that belong to a verb. Their number ranges from just 1 to 22. Among the 25 verbs, the verb SANGSUNGHA-TA 'rise' has the most diverse forms (that is, 22 forms). The verb OLU-TA 'go up,' which ranks top in total frequency, has the second most diverse forms (namely, 18 forms). A close look at the rankings of verbs in the number of their forms shows that it is not always the case that the higher total frequency a verb has, the more forms it has. Among the verbs whose total frequency is higher than 10, the verb KUNCEPHA-TA 'come near' is highest in the ratio of the number of forms to the total frequency. In the case of this verb the ratio is 8 to 16 (=1 to 2). This means that on average a new form is used for every 2 occurrences of the verb. The reason several verbs have diverse forms in Korean stock market news is that they appear in the positions that function variously within a sentence. In other words, in addition to being used just as the main verb of a sentence, they are also used in modifying a noun, ending a participle construction, ending a sentence except the final one in a compound sentence, closing a conditional clause, and so on.

4. Behavior of Verbs

Various verbs mentioned in the previous section behave differently from each other in that the type of expressions with which they co-occur varies. To find out the types of these expressions, I obtained the concordances of all verbs

as a verb in this paper.

illustrated in Table 1 by using a concordancing software. Based on these concordances displayed in KWIC (Key Word In Context) format, I first collected the expressions that appear immediately before a verb and then manually classified them into several types according to the meanings they convey. The result of this classification shows that the frequent types of expressions that immediately precede verbs in the sentences of Korean stock market news are a rising rate, a rising level, a rising amount, a degree adverbial, a scale adverb, a temporal adverbial, and the subject of a sentence.⁴⁾

A rising rate is expressed by percent (2.3% *sangsunghayss-ta* 'rose 2.3%'). A rising level is the position to which a stock price or an index rose (*1350-sen-ey takase-ko iss-ta* 'is approaching 1350s'). A rising amount is the gap between a rising level and a previous level and is indicated by points or won, which is the unit of money used in Korea (*1500-wen olu-n* 'going up 1500 won' or *27-phointu kuptunghayss-ta* 'skyrocketed 27 points'). A degree adverbial (*yakkan* 'a little,' *manhi* 'much,' *sophok* 'within a narrow range,' *khukhey* 'to a great extent,' *kaphalukey* 'steeply,' *khun phok-ulo* 'by large width,' and so forth) conveys the feeling about a rising amount (*yakkan olu-n sangthay-ta* 'is in a state of having risen a little'). A scale adverb (*motwu* 'all,' *taypwupwun* 'mostly,' *taycheylo* 'on the whole,' *cenpancekulo* 'generally,' *cwulcwuli* 'in rows,' *nalanhi* 'side by side,' *hamkkey* 'together,' and so on) indicates whether or not rising situations occur on a large scale (*taycheylo sangsungha-ko iss-ta* 'is rising on the whole'). A temporal adverbial (*sa-il tongan* 'for four days,' *sahul maney* 'in three days,' *ithul yensok* 'for two consecutive days,' *kkwucwunhi* 'steadily,' *cinancwu* 'last week,' and so on) conveys information about the duration, the time point, and the turning point of rising situations (*nahul maney pantunghayss-ta* 'rallied in four days'). Finally, when the subject of a sentence immediately precedes verbs, no expressions modify the verb (*cosencwu-ka pantungha-ko iss-ta* 'the stocks of shipbuilding industries are rallying').

Among the seven types of expressions mentioned above, the cases in which verbs co-occur with a rising rate, a rising level, or a rising amount occupy about

4) The infrequent types of expressions that immediately precede verbs are a phrase of reason, a part of a subordinate clause, a part of a participle construction, a direction adverb, and a repetition adverb. The frequency of these types of expressions is extremely low and thus they are not considered here in this paper.

63% (=1242/1980) as illustrated in Table 2. Thus, these three types of expressions are the main collocates of verbs that are used to convey bullish situations in Korean stock markets.

Table 2. Main Collocates of Verbs

verb	three main collocates		
	rising rate	rising level	rising amount
OLU-TA 'go up'	388	134	162
SANGSUNGHA-TA 'rise'	187	18	44
KUPTUNGHA-TA 'skyrocket'	48	14	12
HOYPOKHA-TA 'recover'	3	71	0
PANTUNGHA-TA 'rally'	2	0	0
TOLPHAHA-TA 'break through'	0	22	0
CHISOS-TA 'soar'	11	19	0
NEMESE-TA 'go over'	0	25	0
TTWI-TA 'leap'	14	7	0
KUNCEPHA-TA 'come near'	2	12	0
NEM-TA 'cross'	0	12	0
TAKASE-TA 'approach'	0	3	0
TTWIEOLU-TA 'jump'	5	4	1
MANHOYHA-TA 'retrieve'	0	1	5
KKULEOLLI-TA 'drag up'	0	2	0
KUPPANTUNGHA-TA 'rally sharply'	1	0	0
THALHWANHA-TA 'recapture'	0	6	0
TAKAKA-TA 'go near'	0	3	0
KUPSANGSUNGHA-TA 'surge'	3	0	0
TTWIENEM-TA 'jump over'	0	2	0
KKOCHI-TA 'stick'	0	2	0
TALI-TA 'run'	2	0	0
LAYLLIHA-TA 'rally'	1	0	0
Total	667	357	218

As shown in the above table⁵⁾, 13 verbs co-occur with a rising rate among the 25

5) The verbs that do not co-occur with any of those three types of expressions (namely, a rising rate, a rising level, and a rising amount) are excluded from the table.

verbs, and that type of expression is the most frequent collocate in the news about bullish stock markets. In Korean stock markets the highest rising rate that is allowed within a trading day is 15%. Thus, a rising rate ranges from more than 0% up to 15%. Some verbs occur together with a fairly high rising rate, whereas others occur together with a wide range of rising rates.

Table 3. Range of Rising Rates

verb	range of rising rates
OLU-TA 'go up'	0.06%---15%
SANGSUNGHA-TA 'rise'	0.14%---15%
KUPTUNGHA-TA 'skyrocket'	2.39%---15%
TTWI-TA 'leap'	3.00%---15%
TTWIEOLU-TA 'jump'	3.11%---15%
CHISOS-TA 'soar'	3.25%---15%

Table 3 shows the range of rising rates that are collocates of verbs.⁶⁾ The verb KUPTUNGHA-TA 'skyrocket' co-occurs with a rising rate that is at least 2.3%. In addition, the three verbs, TTWI-TA 'leap,' TTWIEOLU-TA 'jump,' and CHISOS-TA 'soar,' occur together with a rising rate that is 3.0 or more percent. Thus, these four verbs do not take as their collocate the expression of a rising rate that is lower than 2%. On the other hand, the two verbs, OLU-TA 'go up' and SANGSUNGHA-TA 'rise,' co-occur with any expressions of a rising rate. It is found from this that although the two verbs, OLU-TA 'go up' and TTWIEOLU-TA 'jump,' have the root OLU in common, the latter verb is not used when a rising rate is lower than 3%. For example, when a stock price rises 1.27%, the sentence in (5a), not the one in (5b), is used in Korean stock market news.

- (5) a. cwuka-ka 1.27% [olu-ko / sangsungha-ko] iss-ta.
 stock price-nom go up-conj rise-conj prog-dec
 'The stock price is [going up/rising] 1.27%.'
- b. *cwuka-ka 1.27% [kuptungha-ko / chisos-ko /
 stock price-nom skyrocket-conj soar-conj

6) For the sake of reliability of range, only the verbs that co-occur with rising rates five or more times are included in the table.

ttwi-ko / ttwieolu-ko] iss-ta.
 leap-conj jump-conj prog-dec
 'The stock price is [skyrocketing/soaring/leaping/jumping] 1.27%.'

Therefore, some verbs which co-occur with the expression of a rising rate (namely, KUPTUNGHA-TA 'skyrocket,' TTWI-TA 'leap,' TTWIEOLU-TA 'jump,' and CHISOS-TA 'soar') are constrained by the percent indicated by that expression.

A total of 18 verbs takes the expression of a rising level as their collocate. A rising level is usually expressed by a number. When a stock price rises to the maximum level that is allowed in a trading day, the expressions, *sanghanka-kkaci* 'to the upper price limit' and *kakyekecyhanphok-kkaci* 'to the range of price restriction,' are used to indicate that level.

Table 4. Verbs Co-occurring with Maximum Rising Level

verb	frequency of maximum rising level	relative percentage within rising level
OLU-TA 'go up'	71	53% (=71/134)
CHISOS-TA 'soar'	14	74% (=14/19)
SANGSUNGHA-TA 'rise'	10	56% (=10/18)
KUPTUNGHA-TA 'skyrocket'	7	50% (=7/14)
TTWI-TA 'leap'	4	57% (=4/7)
TTWIEOLU-TA 'jump'	2	50% (=2/4)
KKOCHI-TA 'stick'	1	50% (=1/2)

As illustrated in Table 4, in total 7 verbs occur together with the expressions indicating a maximum rising level. The verb OLU-TA 'go up' co-occurs with these expressions most frequently. But, the verb CHISOS-TA 'soar' has the highest percentage of co-occurring with the expression of a maximum rising level (on average, in 3 out of 4 cases) when a rising level is used along with each of these 7 verbs.

In total 5 verbs co-occur with the expressions of a rising amount, as illustrated in Table 2. In particular, the verb OLU-TA 'go up' occupies a predominant percentage (about 74% (=162/218)) of occurring together with these expressions. This means that when the expression of a rising amount appears in a sentence, the verb that follows that expression is most likely to be OLU-TA.

Among the 25 verbs that are used in Korean stock market news on rising situations, only 4 verbs (that is, OLU-TA ‘go up,’ SANGSUNGHA-TA ‘rise,’ KUPTUNGHA-TA ‘skyrocket,’ and TTWIEOLU-TA ‘jump’) co-occur with all the three main types of expressions (namely, a rising rate, a rising level, and a rising amount). For example, in conveying the situation in which a stock price rises from ₩64,000 to ₩66,240, all the options in sentence (6) can be used.

- (6) cwuka-ka [3.5% / 66,240-wen-ulo / 2,240-wen]
 stock price-nom won-postp won
 [olu-ko / sangsungha-ko / kuptungha-ko / ttwieolu-ko]
 go up-conj rise-conj skyrocket-conj jump-conj
 iss-ta.
 prog-dec
 ‘The stock price is [going up/rising/skyrocketing/jumping] [3.5%/to ₩66,240/₩2,240].’

In sentence (6) there are three options in the expressions preceding verbs and four options in verbs themselves. Thus, sentence (6) represents a total of 12 (=3×4) sentences.

Let us now consider the adverbs/adverbials that are frequent collocates of verbs conveying bullish situations.

Table 5. Adverb/Adverbial Collocates of Verbs

verb	adverb/adverbial collocates		
	degree adverbial	scale adverb	temporal adverbial
SANGSUNGHA-TA ‘rise’	32	32	64
OLU-TA ‘go up’	32	19	23
PANTUNGHA-TA ‘rally’	15	0	43
KUPTUNGHA-TA ‘skyrocket’	0	2	11
TAKASE-TA ‘approach’	9	0	0
KUPPANTUNGHA-TA ‘rally sharply’	0	0	5
HOYPOKHA-TA ‘recover’	0	2	1
NEMESE-TA ‘go over’	2	0	0

TOLPHAHA-TA 'break through'	0	0	1
CHISOS-TA 'soar'	1	0	0
TTWI-TA 'leap'	1	0	0
KUNCEPHA-TA 'come near'	1	0	0
NEM-TA 'cross'	1	0	0
TTWIEOLU-TA 'jump'	0	1	0
KKULEOLLI-TA 'drag up'	0	1	0
THALHWANHA-TA 'recapture'	0	0	1
TAKAKA-TA 'go near'	1	0	0
TTWIENEM-TA 'jump over'	1	0	0
PALTOTWUMHA-TA 'stand on tiptoe'	0	1	0
Total	96	58	149

A degree adverbial conveys the feeling of a reporter on the rising degree in stock markets. The two verbs, SANGSUNGHA-TA 'rise' and OLU-TA 'go up,' co-occur with this type of adverbial most frequently. This means that the reporter of stock market news prefers to express his/her emotion (surprise, disappointment, satisfaction, and so on) on a rising degree when he/she uses the two verbs.

A scale adverb shows the extent to which rising situations occur. The verb SANGSUNGHA-TA 'rise' occurs together with this type of adverb most frequently. The scale adverbs that are used in the news on bullish stock markets emphasize that several or most stocks, not just one stock, are rising together. Thus, the more rising instances happen in stock markets, the more scale adverbs are used in the financial news.

A temporal adverbial indicates when a rising situation occurred, how long the situation lasted, and how many days it took for a rising situation to resume. The verb SANGSUNGHA-TA 'rise' co-occurs with this type of adverbial most frequently. In particular, the verb occurs mostly with the expression conveying the duration of rising situations. This means that when a rising situation lasts for more than one trading day, the verb is preferred. On the other hand, the verb PANTUNGHA-TA 'rally,' which is the second most frequent one that takes a temporal adverbial as its collocate, co-occurs predominantly with the expression conveying the period between the current rising situation and the previous rising situation. Thus, when a rising situation resumes after an interval, the verb PANTUNGHA-TA 'rally' is most preferred.

When a verb immediately follows the subject of a sentence, no modifiers intervene. In this case the reporter of stock market news directly and neatly conveys a rising situation by using just a verb.

Table 6. Verbs Taking Subject Collocate

verb	subject collocate
SANGSUNGHA-TA 'rise'	170
OLU-TA 'go up'	156
KUPTUNGHA-TA 'skyrocket'	19
PANTUNGHA-TA 'rally'	18
Total	363

As illustrated in Table 6, there are only 4 verbs that immediately follow a subject. The name of a company or a sector, a stock price, an index, a stock, and a stock market appear as the subject. The two verbs, SANGSUNGHA-TA 'rise' and OLU-TA 'go up,' occupy about 90% (=326/363) of the cases in which no modifying expressions appear between the subject and a verb. Accordingly, when brief information on bullish stock markets is conveyed quickly, these two verbs are mainly used in the financial news.

Therefore, the environment in which some verbs occur is restricted. For example, the verbs such as PANTUNGHA-TA 'rally,' KUPSANGSUNGHA-TA 'surge,' and TALI-TA 'run' co-occur⁷⁾ only with the expression of a rising rate among the three main expressions shown in Table 2. In addition, the verbs such as TAKASE-TA 'approach' and NEMESE-TA 'go over' occur together only with the expression of a degree adverbial among the adverb and adverbials shown in Table 5. On the other hand, the verb KUPPANTUNGHA-TA 'rally sharply' co-occurs only with the expression of a temporal adverbial among the adverbial expressions.

7) Only the verbs whose frequency of co-occurrence with an expression is at least 2 are mentioned here for reliability.

5. Summary and Conclusion

This paper has shown in detail that the environment in which the diverse verbs that convey rising situations occur is different from each other. Some verbs co-occur with three main expressions in stock market news (that is, a rising rate, a rising level, and a rising amount), but others do not. In addition, not all verbs take a degree adverbial, a scale adverb, and a temporal adverbial as their collocate. Furthermore, only a small number of verbs is used in the context in which no modifiers occur between the subject of a sentence and a verb. Thus, some verbs occur rather freely without much constraint, but others occur in a restricted environment. The two verbs, OLU-TA 'go up' and SANGSUNGHA-TA 'rise,' is freest with respect to the environment in which they can occur. Due to this free behavior, they have higher frequency than any other verbs.

Since various verbs behave differently in a sentence, it is possible to know whether a stock price or an index rises a lot or a little by just looking at them. For example, when the verbs such as CHISOS-TA 'soar,' TTWIEOLU-TA 'jump,' and TTWI-TA 'leap' are frequently used in the stock market news, it can be inferred that very bullish situations (namely, the rises of at least 3%) occur in stock markets. Moreover, when the verb PANTUNGHA-TA 'rally' is used in the news, it is very likely that after an interval of trading days in falling situations, rising situations occur again. This analysis of different behaviors of verbs conveying rising situations in stock markets may be applied to that of verbs that are used to report *falling* situations (for example, HALAKHA-TA 'drop,' TTELECI-TA 'fall,' NAYLI-TA 'decline,' CHWULAKHA-TA 'plunge,' and so forth). Therefore, the corpus-based study of verbs discussed in this paper can be practically useful in finding out stock market situations.

Finally, when people learn the specified restrictions on the co-occurrence environments of the verbs expressing bullish markets, they can avoid writing awkward sentences in their report or thesis on economic situations.

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