Does Sector Affect IPO Underpricing in Hong Kong?

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Abstract: IPO underpricing is a scenario which has been studied from lots of different perspectives. I use Hong Kong main board data from 2002 to 2020 to study IPO underpricing phenomenon. Instead of study certain factors or certain sectors, I compare data across different sectors to check sector effect in Hong Kong IPO underpricing. There is sector effect in Hong Kong IPO underpricing. New industries like Communication Service, Health Care and Information Technology, they have more underpricing IPOs. Traditional industries like Financials, Utilities and Real Estate, they have fewer underpricing IPOs.

Keywords: Hong Kong IPO; IPO Underpricing; Sector Effect

1. Introduction

Hong Kong IPO market is one of the most important IPO markets in the world. It has ranked No. 1 in the world in seven of the last twelve years. Despite recent global market volatility, Hong Kong primary market continues to take a leading position in the world's IPO fundraising league tables. Hong Kong market attracts diversified investors which also attracts more and more companies considering to list here.

IPO underpricing is a common scenario across markets. This scenario has attracted much attention in the financial economics literature. Scholars try to research and explain this empirical regularity from different perspectives. Chourou et al. (2018) find the importance of national culture in explaining international IPO underpricing. Wang and Wan (2013) explore Venture Capital Backed IPOs underpricing by comparing Private and Corporate venture capital, while Lin et al. (2017) analyze from venture capital reputation to check IPOs underpricing. Fung et al. (2014) examine the relationship between investment banks' IPO market shares and their prior IPO underpricing. Some other interesting perspectives like local corruption (Wang and Song, 2021) & (Huang et al., 2021), pre-deal research (Wang, 2008) and firm ownership (Chen et al., 2015). They all contributed and tried to explain reasons behind IPO underpricing phenomenon.

In Hong Kong, most of the IPOs have good performance in the first day. Sometime IPOs from certain industries are more welcomed than other industries. Suppose investors are rational, good first day return is due to underpricing of IPOs. Whether industry sector of IPO affects underpricing or not? Some researchers focus on certain sector, like shipping sector (Klova, V. 2017) and insurance industry (Boulanouar and Alqahtani, 2016), but not comparison among sectors. This paper discusses data across different industry sectors and points out there is sector effect in Hong Kong IPO underpricing.

2. Data and Methodology

To track HK IPOs' first day performance and performance afterwards, I separate holding periods into short holding period, which is one month; medium holding period, which is six months; long holding period, which is three years. I run return distributions and statistics to monitor and compare different sector performances. The first day return distribution tells us whether there is underpricing or not in Hong Kong. The other three return distributions tell us how IPOs perform in different holding periods in Hong Kong. The underpricing can be the reason or the result of afterwards performance. If the sectors always perform well in the long run, which may

attract more subscription for that sector IPO, thus that sector perform well in the first day of listing. Or maybe it is a reallocation of performances. For sectors which perform well in the first day, they tend to underperform in the long run.

2.1 Raw Data

I get Hong Kong Mainboard IPO information from 2002 to 2020, and collect IPO Subscription Price on Hong Kong Exchange website. I download the first listing day Unadjusted Closing Price, Daily Total Return Index and Adjusted Closing Price of those IPO equities from DataStream since their listing date. I exclude by introduction IPO scenario, as usually those are equities transfer from Hong Kong Growth Enterprise Market or other exchange markets, which have secondary market prices for a long period already.

2.2 Data Analysis

I use the first day returns, one month, six months and three years total returns to run total return distributions separately and get the statistics results (Table 1). For the first day returns, the mean is 10.33% which is remarkable and median is 2.5%. The data shows there is underpricing fact in Hong Kong IPO market. Most of the IPOs perform well in the first day. But there are still IPOs having negative returns in the first day. 25 percentile is -1.98% while the lowest one has 56.87% loss just in the first day. The performances of IPOs diversify in the first day in Hong Kong. For longer holding periods, returns diversify into a larger range. Interesting scenario is that all of three different holding periods median are negative numbers.

Table 1 HK IPO Total Return Distribution Statistics

	First day return	1m return	6m return	3y return
count	1426.000000	1426.000000	1425.000000	1104.000000
mean	0.103335	0.008881	0.070537	0.377087
std	0.315659	0.274475	0.915940	1.951959
min	-0.568750	-0.813600	-0.860100	-0.957600
25%	-0.019839	-0.120650	-0.262900	-0.500425
50%	0.025028	-0.018000	-0.040700	-0.119500
75%	0.146939	0.080225	0.211500	0.519475
max	4.316667	3.419000	26.470900	31.487100

3. Sector Performances

To test sector effect, I use Global Industry Classification Standard (GICS) in my research. GICS is developed by MSCI and S&P Dow Jones Indices in 1999. It is widely used in industry. Some of other classification standards are also based on methodology of GICS. The GICS structure consists of 11 sectors, 24 industry groups, 69 industries and 158 sub-industries. For sector level, it includes energy, materials, industrials, consumer discretionary, consumer staples, health care, financials, information technology, communication services, utilities, and real estate.

For Energy Sector, the first day return has positive mean 9.75% but median is 0%, which means half of this sector IPO have positive return and half of this sector IPO have negative return. This is not strong evidence for underpricing fact in this sector. Mean of returns are all negative for the three-holding periods, especially for the long-term holding period. Besides, median of 3y return is -45.60%. This sector performs badly in the long term, which may cause investors don't like this sector IPOs. As a result, investors don't join subscription in this sector IPOs and it is not obvious in underpricing scenario in this sector.

For materials sector, mean of the first day returns is 9.36%. It is similar as the one of energy sector. Median is 2.99%. More than half of IPOs in this sector has positive returns. There is less outstanding performance IPOs. There isn't any IPO having first day return more 100% in this sector. Performances in different holding periods are much better than energy sector. In materials sector, 6m returns are similar as 1m returns. There is no significant benefit by holding five more months. However, there are several equities outstanding in the long term. These outstanding equities increase mean in the long holding period. Mean of 3y returns is 41.91%.

For Industrials sector, mean of the first day return is 11.22%, which is higher than energy sector and materials sector. Some IPOs have return more than 150% in the first day. Median is 2.83%, which is similar as materials sector. More than half of the IPOs in this sector have positive returns. There are several equities outstanding in the medium holding period and long holding period, with highest return 618.52% in 6m and 3148.71% in 3y. Mean of 6m returns is 8.21% and mean of 3y returns is 58.67%. They are higher than those of the whole sample. This sector performs well in general.

For consumer discretionary sector, mean of the first day return in this sector is 8.26%. It is lower than the whole sample. Median is 1.95%. More than half of this sector IPOs have positive returns. There are several equities outstanding in longer period, especially six months holding period. Mean of 6m returns is 16.81%, it is driven by several outstanding equities. Mean of 3y returns is 24.19%. It is lower than that of the whole sample. Median of 3y returns is -8.12%. Most of the equities didn't perform well in this sector in the long holding period.

For consumer staples sector, mean of the first day return is 21.98%, which is very remarkable and much higher than other sectors. There are several outstanding performance IPOs in the first day which are more than 100%. One IPO has return nearly 300%. Median of the first day return is 7.42%, which is also higher than other sectors. This sector IPOs perform better than other sectors in general. Mean of 1m returns is 4.07%. Mean of 6m returns drops to 2.87%. The performance didn't improve much by holding five more months in this sector, as more negative returns in the sample by holding six months. Mean of return of three years holding period is 48.04%. It is higher than that of the whole sample.

For health care sector, mean of the first day return, it is 12.64%, which is higher than that of whole sample. Median is 6.97%. More than half of this sector IPOs have positive returns in the first day. This is a new industry. Several IPOs have the first day return more than 100%.   Mean of 1m returns is 1.24%. Mean of 6m returns is 4.76%, while mean of 3y returns is 47.81%. There are several equities outstanding in the long run. Mean of 3y returns is higher than that of the whole sample. Returns in one month and six months are in general, but not outstanding compare with other sectors.

For financials sector, mean of the first day return is 4.28%, which is lower than that of the whole sample. This is a traditional sector. There isn't any IPOs having first day return more than 100%. Median is 1.09%.   Mean of 1m returns is -1.72%. Mean of 6m returns is 1.04%, and mean of 3y return is 8.66%. All of them are much lower than those of whole sample, which means this sector doesn't perform well than most of other sectors in the first day and other different holding periods. There are several equities outstanding in this sector in the long run, but in general, most of equities in this sector are not attractive.

For information technology sector, mean of the first day return is 11.74%, which is slightly higher than that of the whole sample. Median is 3%. More than half of this sector IPOs having positive returns. This is a new industry. Several IPOs have first day return more than 100%. Mean of 1m returns is -1.71% and mean of 6m returns is 1.79%. They are both lower than those of the whole sample. In the long holding period, mean of 3y returns is 46.61%. It is driven by several outstanding equities. As most of equities didn't perform well, median of three years return is -33.98%. This sector is not attractive in general after the first day in different holding periods.

For communication services sector, mean of the first day return is 16.67%, which is very high compare with other sectors. Median is 2%. More than half of this sector IPOs have positive returns in the first day. Mean of 1m returns is -3.90%, while mean of 6m returns is -7.27%. Both of them are negative. For 3y returns, this sector has several equities outstanding, but most of them are not well with mean 20.51% and median -41.41%. Thus, it is attractive to subscribe and gain the first day return in this sector, but not attractive to hold in different holding periods after the first day.

For utilities sector, mean of the first day return is 7.45%, which is lower than other sectors. Median is 0%, only half of IPOs in this sector have positive returns in the first day. This is a traditional sector. There isn't any outstanding perform IPOs in the first day in this sector. This sector performs badly in both 1m and 6m. Mean of 1m returns is -3.12%, median is -2.27%. Mean of 6m returns is -7.39%, and median is -8.51%. All of them are negative numbers. For three years holding period, mean of return is 72.74% with median -26.05%. If we do not consider the only outstanding equity, this sector does not perform well in general.

For real estate sector, mean of the first day return is 6.57%. It is lower than that of the whole sample. Subscribe this sector and hold for the first day is not attractive in general. Median is 2.35%. This is a traditional sector as well. There isn't any outstanding

perform IPOs in the first day in this sector. Mean of 1m returns is 3.79%. Mean of 6m returns is 14.89%. Both of them are higher than those of the whole sample, as there is one outstanding equity in this sector. Mean of 3y returns is 26.97%. It is lower than that of the whole sample.

Compare with different sectors, I summarize mean of the whole sample and different sectors (Table 2). From analysis above, different sectors have different first day returns. Some sectors are good at the first day returns, like Consumer Staples, Communication Service, Health Care and Information Technology. Some sectors are not good at the first day returns, like Financials, Utilities and Real Estate. There is sector effect in Hong Kong IPO market. From the statistics, it shows that new industries usually have higher first day return than traditional industries. Some sectors do not perform well in general, neither the first listing day nor the different holding periods after that, like Energy and Financials. Some sectors are good to hold into different holding periods after listing date but not the first listing date, like Materials, Industrials and Utilities. Some sectors are not good to hold into different holding periods after listing date, but did well in the first day return, like Communication Service.

Besides the mean of different holding periods, I also look into outstanding equites in different sectors. Some sectors have more outstanding equities like industrials, consumer discretionary, consumer staples, health care, information technology, utilities and real estate sectors, while some sectors have less like energy, materials, financials, and communication service sectors. For sectors having more outstanding equities, they tend to have higher first day returns. For sectors having fewer outstanding equites, they tend to have lower first day returns.

Table 2 Mean of Returns for the whole sample and different sectors

	First day return	1m return	6m return	3y return
Total	0.103335	0.008881	0.070537	0.377087
Energy	0.097451	-0.030850	-0.008859	-0.050137
Materials	0.093609	0.024147	0.014436	0.522155
Industrials	0.112207	0.013204	0.082140	0.594688
Consumer Discretionary	0.082630	0.015781	0.168129	0.233498
Consumer Staples	0.219840	0.040738	0.028724	0.466039
Health Care	0.126383	0.012407	0.047610	0.581327
Finanials	0.042750	-0.017167	0.009953	0.081490
Information Technology	0.117414	-0.017126	0.017880	0.468834
Communication Service	0.166661	-0.038997	-0.072736	0.198330
Utilites	0.074467	-0.031160	-0.073949	0.529652
Real Estate	0.065704	0.037857	0.148948	0.306597

4. Discussion and Conclusion

To compare across the sectors, the data does not show that the better performing sectors in the first day also perform well in the long run; it does not indicate better performing sectors in the first day relocate their long run performance either. There is no clear evidence across sectors. For sectors having more outstanding equities in different holding periods after listing date, they tend to perform better in the first day as well. It may be because of good impression of certain sectors due to several outstanding equities. Then investors prefer to investing in those sectors and subscribe their IPOs. With high subscription ratio and high demand, these IPOs tend to perform well on listing day.

In all, it is clear that there is sector effect in Hong Kong IPO underpricing phenomenon. New industries have higher probability to have underpricing IPOs which can make higher first day returns. Traditional industries have more chances to have a fair value in IPOs which means their first day returns are not attractive. Different holding periods' performances after listing day can explain something but not everything behind this phenomenon. More work can be done in the future to explore the detail reasons behind this phenomenon.

References

[1] Boulanouar, Z., Alqahtani, F., 2016. IPO underpricing in the insurance industry and the effect of Sharia compliance: Evidence from Saudi Arabian market. International journal of Islamic and Middle Eastern finance and management, 2016-08-15, Vol.9 (3), p.314-332.

[2] Chen, Y., Wang, S. S., Li, W., Sun, Q., Tong, W. H. S., 2015. Institutional environment, firm ownership, and IPO first-day returns: Evidence from China. Journal of corporate finance (Amsterdam, Netherlands), 2015-06, Vol.32, p.150-168.

[3] Chourou, L., Samir, S., Zhu, H., 2018. How does national culture influence IPO underpricing? Pacific-Basin finance journal, 2018-10, Vol.51, p.318-341.

[4] Fung, Y. K. S., Gul, F., Radhakrishnan, S., Investment Banks' Entry into New IPO Markets and IPO Underpricing. Management science, 2014-05, Vol.60 (5), p.1297-1316.

[5] Huang, Y., Yan, C., Chan, K.C., 2021. Does aggressiveness help? Evidence from IPO corruption and pricing in China. Journal of corporate finance (Amsterdam, Netherlands), 2021-04, Vol.67, p.101901.

[6] Klova, V., 2017. IPO underpricing: What about the shipping sector? Journal of multinational financial management, 2017-12, Vol.42-43, p.95-115.

[7] Lin, R., Li, Y., Peng, T., Zhang, H., 2017. Venture capital reputation and portfolio firm performance in an emerging economy: The moderating effect of institutions. Asia Pacific journal of management, 2017-02-03, Vol.34 (3), p.699-723

[8] Wang, K., 2008. Does pre-deal research reduce IPO underpricing? Pacific accounting review, 2008-09-19, Vol.20 (3), p.234-253.

[9] Wang, X., Song, D., 2021. Does local corruption affect IPO underpricing? Evidence from China. International review of economics & finance, 2021-05, Vol.73, p.127-138.

[10] Wang, X., Wan, W.P., 2013. Explaining the Variance in Underpricing among Venture Capital-Backed IPOs: A Comparison Between Private and Corporate VC Firms. Strategic entrepreneurship journal, 2013-12, Vol.7 (4), p.331-342.