

# JPX Growth Board Analysis

## Background

This Analysis focuses on the growth board of JPX and will look at the valuation difference, price and fundamental performance of companies listed on the growth board vs the rest of the market and try to give suggestions on actions post IPO for an electronic appliance/service company.

## 1. Compare growth board valuation vs the overall market

### 1.1 Valuation comparion

As there are many unprofitable companies on the growth board, given the early stage nature, we look at also the price/sales, and price/book. Ideally we would also look at FCF yield and EV/EBITDA, but these were not available for the Nikkei 225.

As figure 1 shows, growth board stocks in general as an order of magnitude more expensive compared with the rest of the market, and is also much more expensive than the growth-oriented JASDAQ section. This is in part due to the early stage nature of the companies on the board, which tend to have faster growth and depressed margins due to investment in growth.

- Valuation trend tend to be similar, but growth board tend to be a bit mroe volatile and has seen more pull back recently.

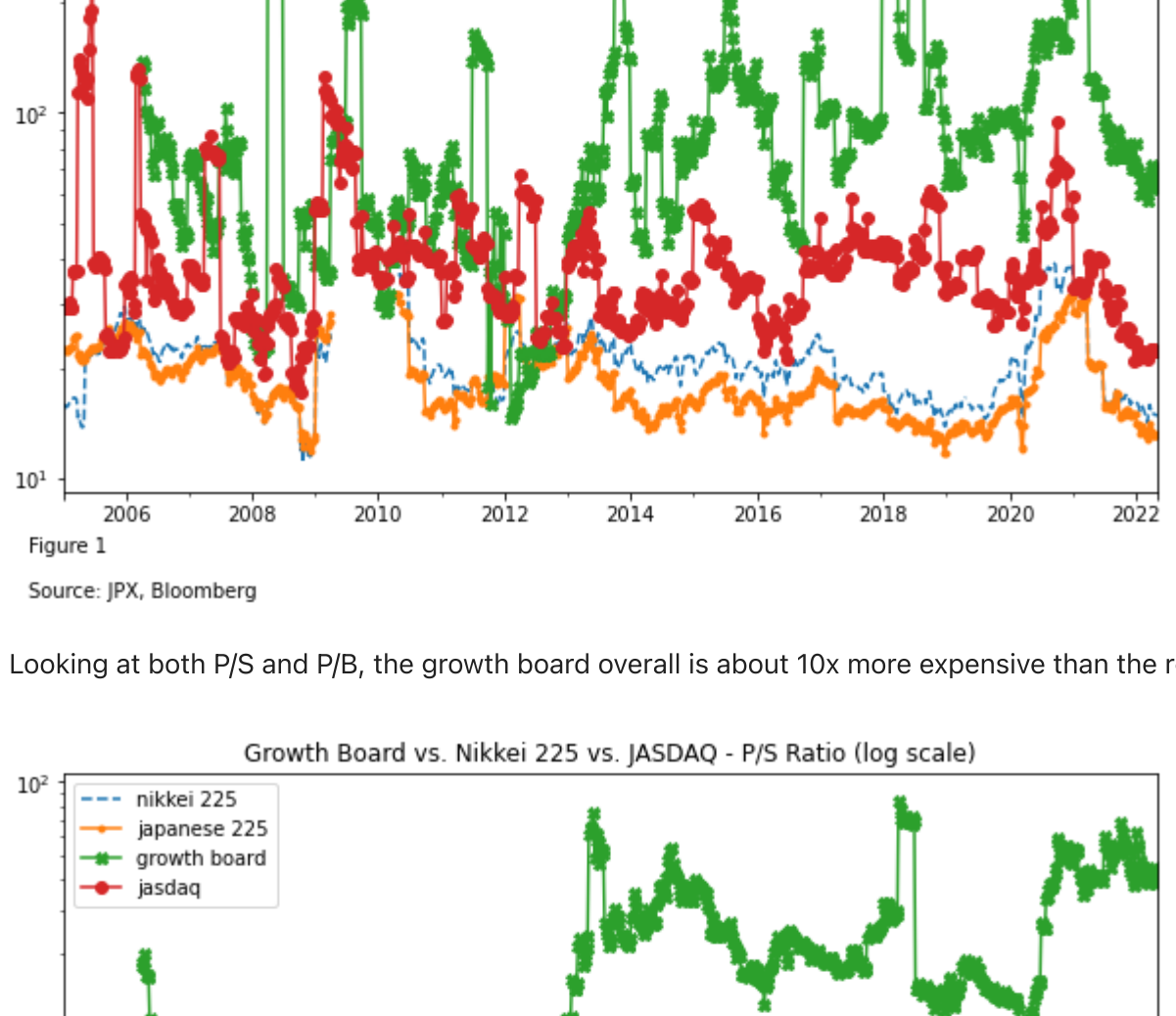


Figure 1  
Source: JPX, Bloomberg

Looking at both P/S and P/B, the growth board overall is about 10x more expensive than the rest of the market.

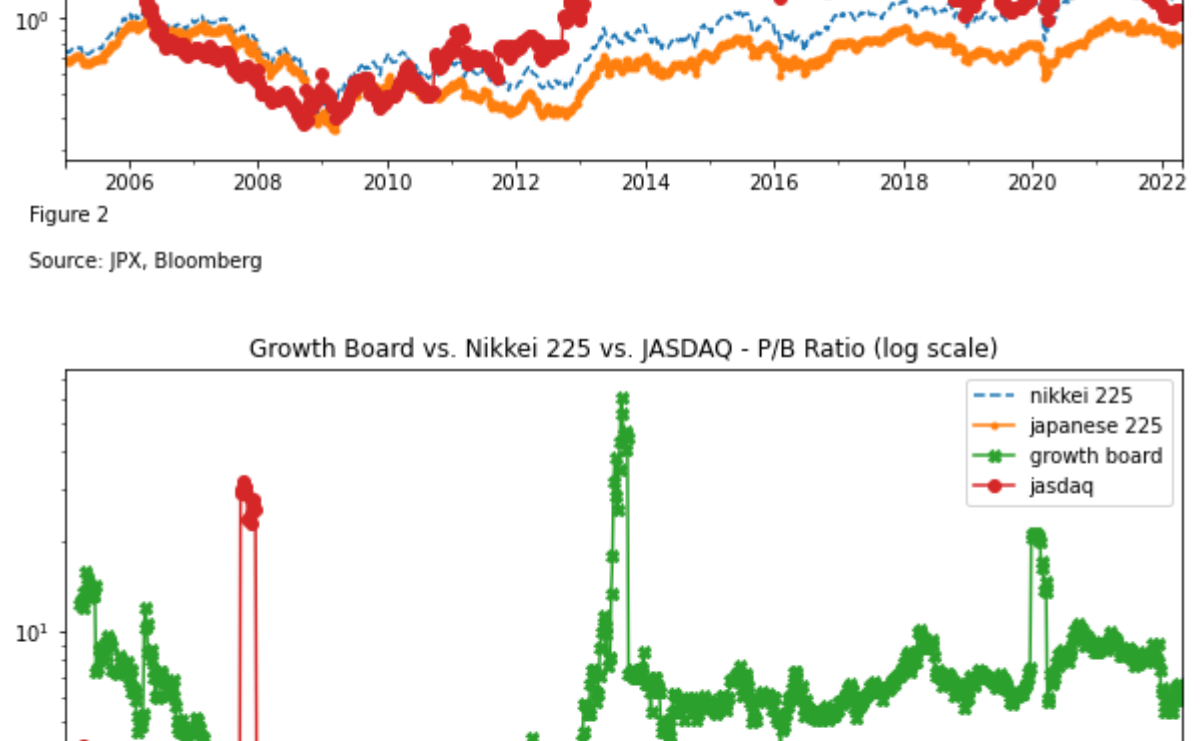


Figure 2  
Source: JPX, Bloomberg

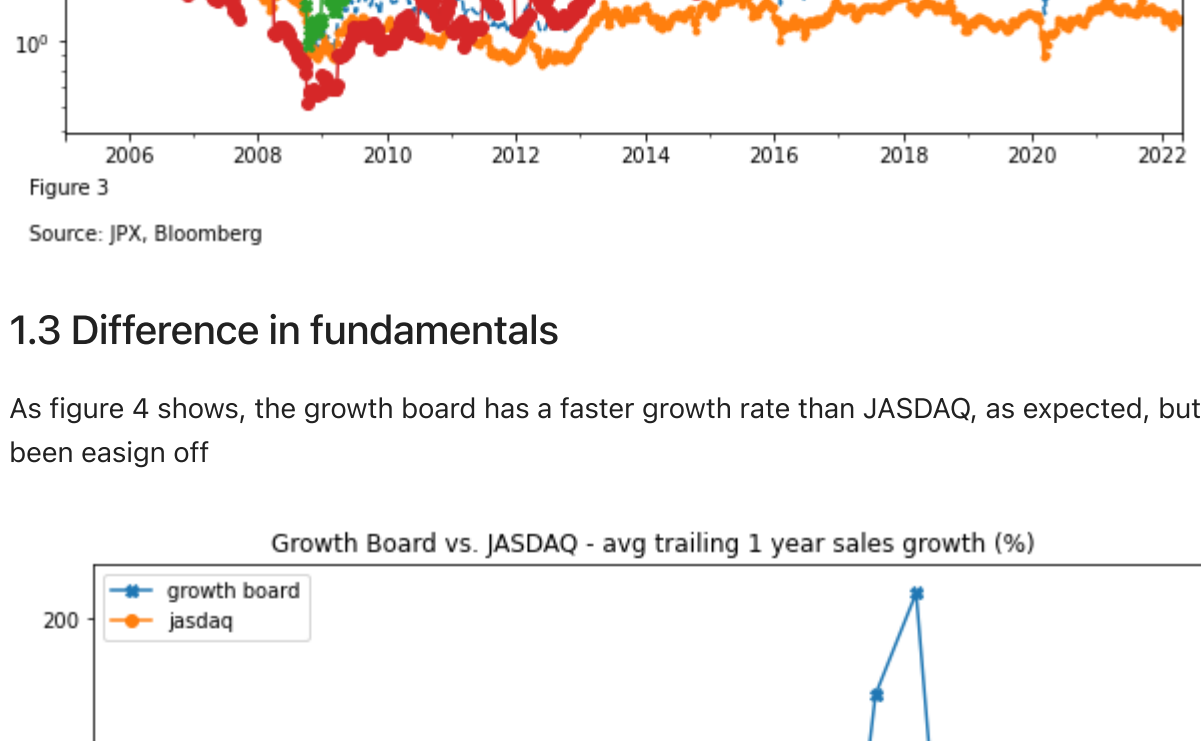


Figure 3  
Source: JPX, Bloomberg

### 1.3 Difference in fundamentals

As figure 4 shows, the growth board has a faster growth rate than JASDAQ, as expected, but growth in new listings in the recent 2 years have been easign off

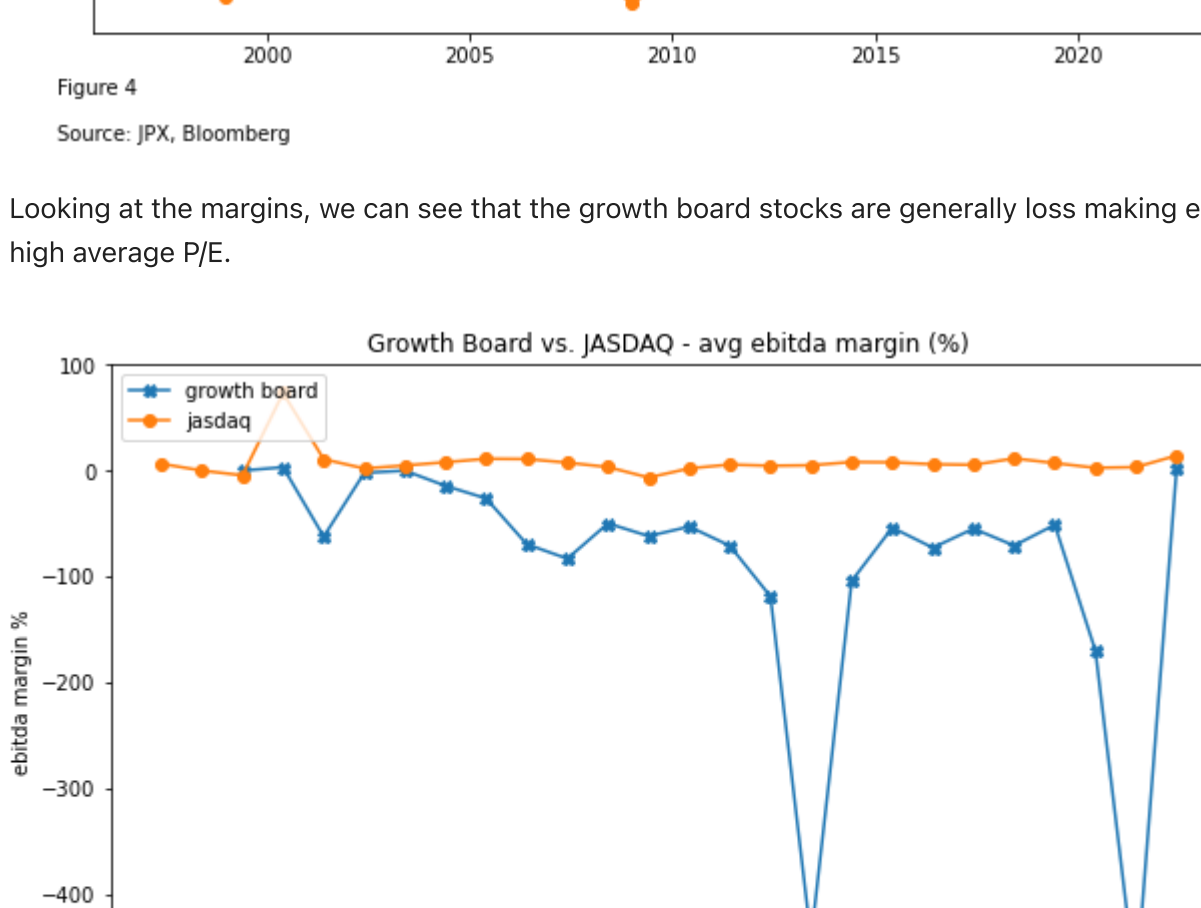


Figure 4  
Source: JPX, Bloomberg

Looking at the margins, we can see that the growth board stocks are generally loss making even on the EBITDA line. This partially explains the high average P/E.

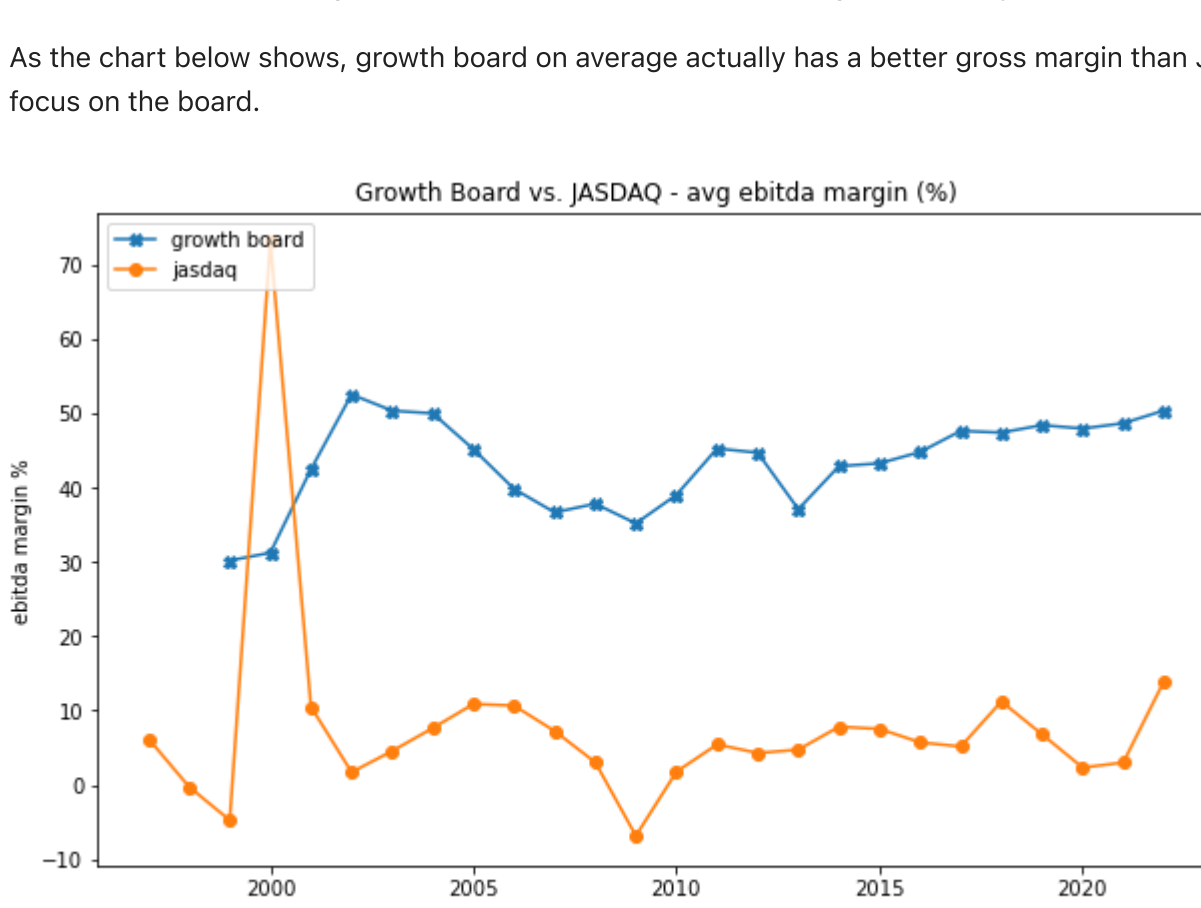


Figure 5  
Source: JPX, Bloomberg

We can also look at gross margin as ebitda margin tends to be distorted by a few very loss making companies. These could be pharmaceutical companies that have a high R&D cost but did not have a meaningful revenue yet.

As the chart below shows, growth board on average actually has a better gross margin than JASDAQ. This makes sense given the technology-focus on the board.

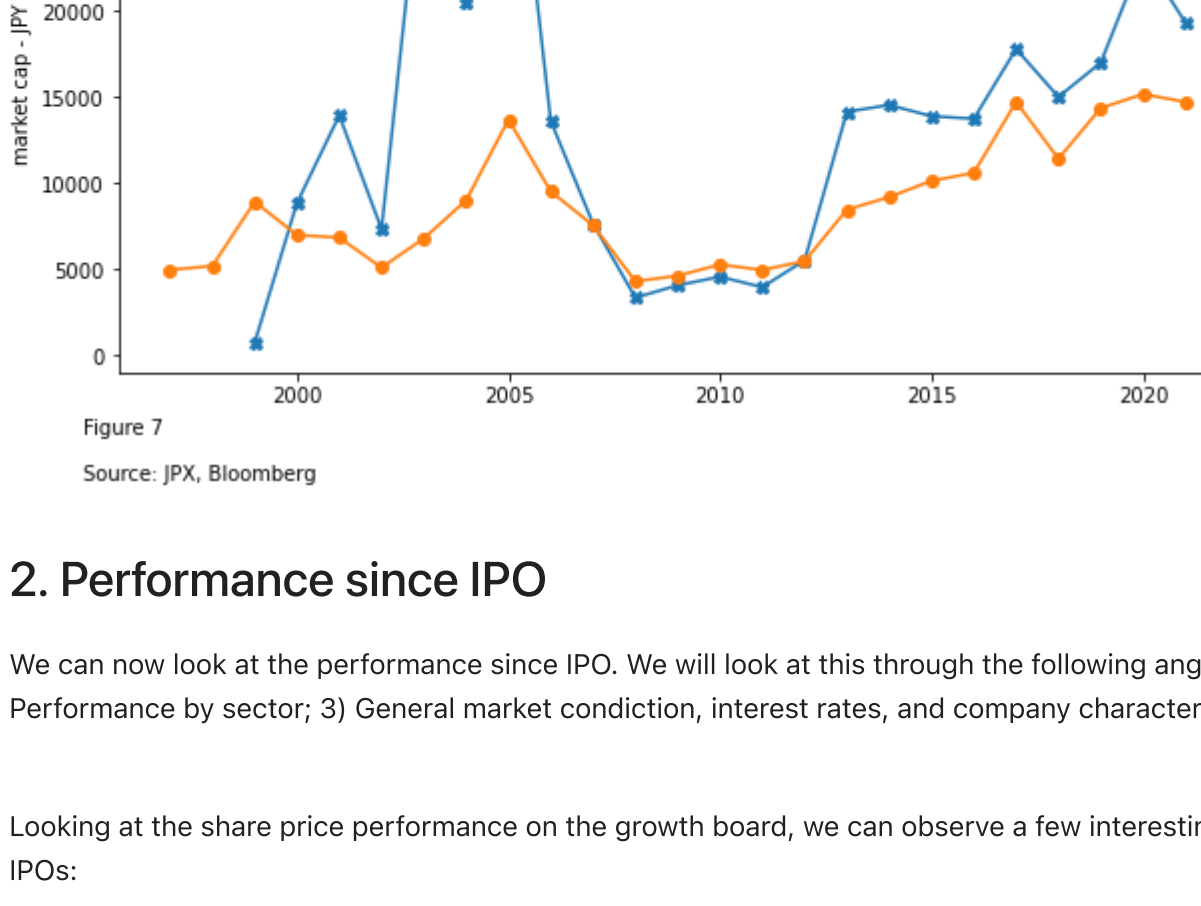


Figure 6  
Source: JPX, Bloomberg

Slightly surprisingly though, the average market cap on the growth board is actually higher than the JASDAQ, between JPY10-20bn.

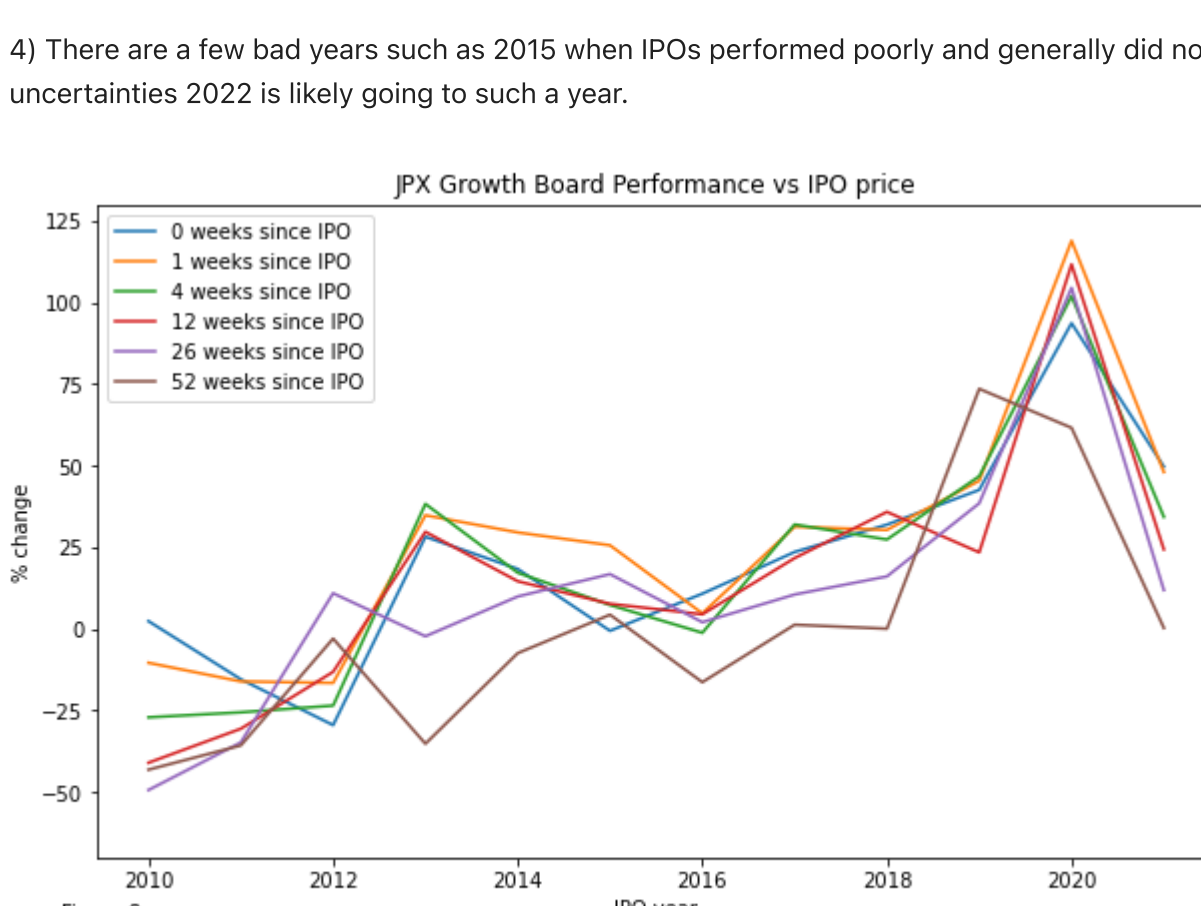


Figure 7  
Source: JPX, Bloomberg

## 2. Performance since IPO

We can now look at the performance since IPO. We will look at this through the following angles: 1) General performance since IPO; 2) Performance by sector; 3) General market condition, interest rates, and company characteristics and their impact to IPO performance;

Looking at the share price performance on the growth board, we can observe a few interesting trends, some of which are generally true with IPOs:

- After 2013, the average IPOs rise more than 25% from the issue price.
- It seems like the secondary market is fairly efficient at pricing IPOs, with share prices stabilizing after IPOs. The average share price performance 1/4/12 weeks after IPO don't differ that much from the IPO price.
- Except for 2019 which was an unusual year (trade war, macro shocks), share price after a year almost always to IPO levels on average.
- There are a few bad years such as 2015 when IPOs performed poorly and generally did not rise above the issue prices. Given the macro uncertainties 2022 is likely going to such a year.

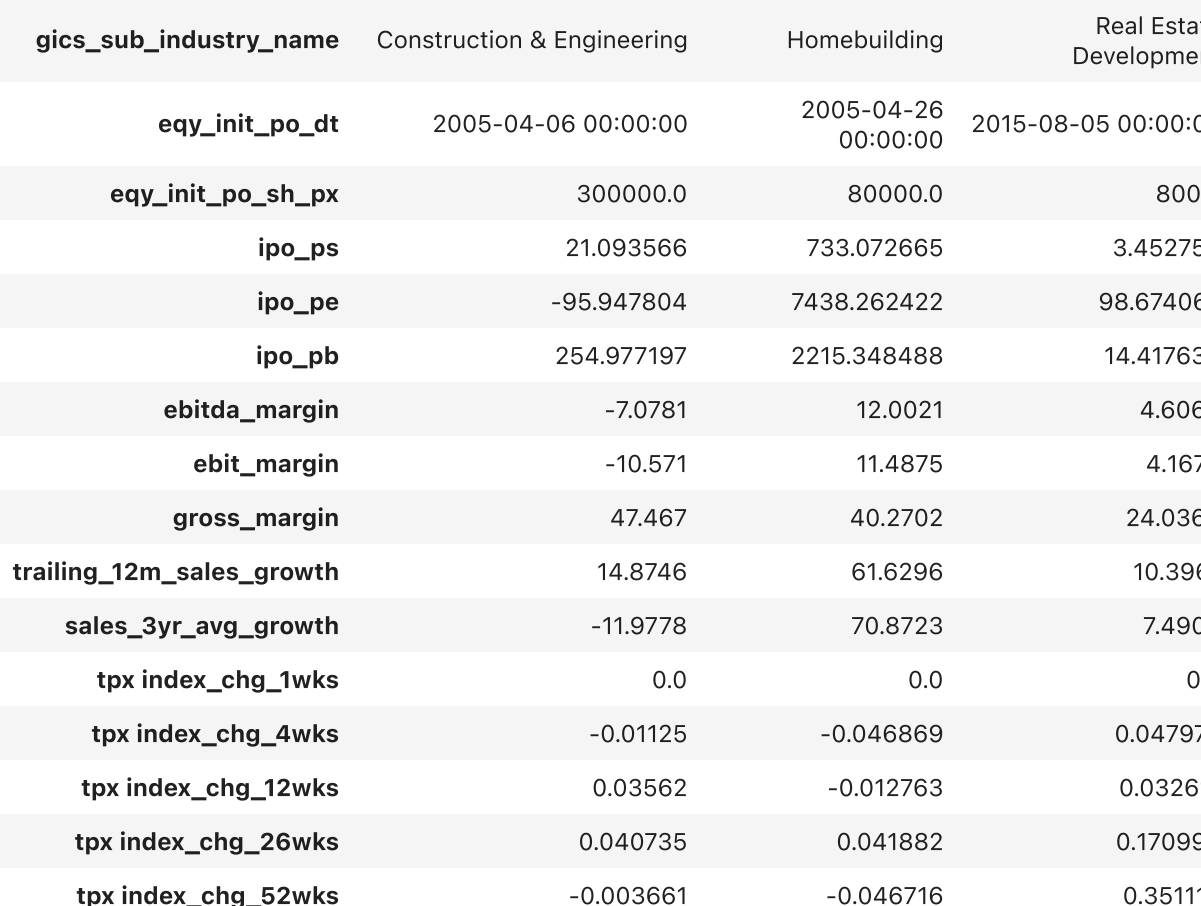


Figure 8  
Source: JPX, Bloomberg

### 2.1 Prediction

We can now look at the IPOs and try to create a model to predict IPO price, incorporating the various macro and market data as "features"

We can first create a dataset containing the features we want about the company - sector, valuation, index performance before the IPO.

The created dataset looks like this (data is provided, I transposed the data to make it more viewable. This includes the first 5 rows only):

	index	1400 JP Equity	1401 JP Equity	1431 JP Equity	1436 JP Equity	1447 JP Equity
	short_name	RUDEN HD	MBS INC	LIB WORK CO LTD	FIT CORP	ITBOOK HOLDINGS
	cic_des	Ruden Holdings Co., Ltd. constructs and remodels buildings, apartments, and houses. The Company specializes in interior design reforms. Also, Ruden Holdings sells interior products and securities products.	mbs. inc. repairs and renovates outer walls and interiors for housings and buildings. The Company also provides consulting services on renovation work.	Lib Work Co. Ltd. operates as a custom homebuilder. The Company designs, constructs, and sells single-family homes. Lib Work also renovates and remodels homes.	Fit Corporation builds homes. The Company builds and sells single family houses, apartments, prefabricated houses, and other buildings. Fit provides its services throughout Japan.	ITbook Holdings Co., LTD offers IT services. The Company provides IT and system procurement support, technology consulting, and other services. ITbook Holdings offers services in Japan.
	gics_industry_name	Construction & Engineering	Household Durables	Real Estate Management & Devel	Independent Power and Renewabl	IT Services
	gics_sub_industry_name	Construction & Engineering	Homebuilding	Real Estate Development	Independent Power Producers &	IT Consulting & Other Services
	eqy_init_po_dt	2005-04-06 00:00:00	2005-04-26 00:00:00	2015-08-05 00:00:00	2016-03-11 00:00:00	NaT
	eqy_init_po_sh_px	3000000.0	800000.0	800.0	18900.0	NaN
	ipo_ps	21.093566	733.072665	3.452758	0.836822	NaN
	ipo_pe	-95.947804	7438.262422	98.674067	9.580778	NaN
	ipo_pb	254.977197	2215.348488	14.417636	2.18352	NaN
	ebitda_margin	-7.0781	12.0021	4.6064	15.6308	NaN
	ebit_margin	-10.571	11.4875	4.1675	14.7264	NaN
	gross_margin	47.467	40.2702	24.0364	28.5872	NaN
	trailing_12m_sales_growth	14.8746	61.6296	10.3961	4.7294	NaN
	sales_3yr_avg_growth	-11.9778	70.8723	7.4909	58.7007	NaN
	tpx index_chg_1twks	0.0	0.0	0.0	-0.011655	NaN
	tpx index_chg_4wks	-0.01125	-0.046869	0.047974	0.136289	NaN
	tpx index_chg_12wks	0.03562	-0.012763	0.032611	-0.115659	NaN
	tpx index_chg_26wks	0.040735	0.041882	0.170993	-0.081683	NaN
	tpx index_chg_52wks	-0.003661	-0.046716	0.351115	-0.128825	NaN
	nky index_chg_1twks	0.0	0.0	0.0	-0.004461	NaN
	nky index_chg_4wks	-0.016795	-0.057805	0.040719	0.132881	NaN
	nky index_chg_12wks	0.024937	-0.027679	0.043193	-0.107861	NaN
	nky index_chg_26wks	0.032978	0.025487	0.166402	-0.072565	NaN
	nky index_chg_52wks	-0.014615	-0.060861	0.39293	-0.120253	NaN
	usgg10yr index_chg_1twks	0.0	0.0	0.0	0.058588	NaN
	usgg10yr index_chg_4wks	-0.02087	-0.045554	-0.090564	0.134889	NaN
	usgg10yr index_chg_12wks	0.056915	0.041617	0.017597	-0.099864	NaN
	usgg10yr index_chg_26wks	0.077242	0.055027	0.114172	-0.093406	NaN
	usgg10yr index_chg_52wks	0.061228	-0.057799	-0.099244	-0.061542	NaN
	jpy curncy_chg_1twks	0.0	0.0	0.0	0.001055	NaN
	jpy curncy_chg_4wks	0.034231	-0.014411	0.009041	0.005386	NaN
	jpy curncy_chg_12wks	0.053993	0.018446	0.03891	-0.060251	NaN
	jpy curncy_chg_26wks	-0.017986	0.00189	0.040434	-0.055809	NaN
	jpy curncy_chg_52wks	0.010427	-0.040807	0.214132	-0.062109	NaN
	target_0weeks	0.152667	0.005788	0.063375	0.798942	NaN
	target_1weeks	0.098667	0.007375	0.064375	0.721164	NaN
	target_4weeks	0.11	0.006063	0.060125	0.644974	NaN
	target_12weeks	0.086667	0.005125	0.06025	0.560847	NaN
	target_26weeks	0.0416	0.003825	0.06325	0.412169	NaN
	target_52weeks	0.045533	0.003887	0.062	0.642857	NaN

Let's first look at the correlation among different factors determining IPO performance.

Table below summarizes factors' correlation with the price performance at and after IPO. Table is sorted in descending order by the IPO day performance. We can see that:

- US interest rate change in the previous 4 and 12 weeks is positively correlated to IPO performance, and the 2 main indices in Japan, Nikkei 225 and TOPIX are both positively correlated with performance. These correlations tend to fade longer after the IPO (expected, known as alpha decay in quantitative trading). This basically means in a bull market, IPOs tend to do better, which is self explanatory.
- Only gross margin seemed positively correlated with IPO performance. Sales growth, ebitda margin nd ebit margin did not show much correlation - this could be due to extreme values in the dataset - earlier I have shown that in some years IPOs tend to have extremely loss making companies on the ebitda line.
- Valuation is negatively correlated with IPO performance.

	0weeks after IPO	1weeks after IPO	4weeks after IPO	12weeks after IPO	26weeks after IPO	52weeks after IPO
usgg10yr index_chg_12wks	15.28%	16.37%	14.26%	10.33%	9.09%	0.86%
nky index_chg_12wks	15.09%	18.68%	18.14%	13.84%	11.65%	6.41%
tpx index_chg_12wks	13.59%	17.05%	15.45%	10.62%	8.71%	5.38%
nky index_chg_4wks	10.58%	13.63%	9.72%	3.05%	1.96%	-1.55%
usgg10yr index_chg_4wks	10.13%	13.50%	10.28%	5.08%	2.87%	-1.64%
gross_margin	9.70%	9.78%	12.57%	13.36%	10.99%	14.17%
nky index_chg_4wks	9.00%	10.64%	8.44%	0.97%	-0.73%	0.39%
tpx index_chg_52wks	8.88%	11.18%	8.54%	0.71%	-0.79%	0.01%
nky index_chg_52wks	7.48%	8.53%	6.98%	0.90%	0.06%	-0.95%
usgg10yr index_chg_26wks	7.30%	6.47%	4.91%	0.71%	-3.66%	-9.83%
tpx index_chg_26wks	6.81%	9.42%	5.43%	-1.76%	-1.95%	-2.07%
tpx index_chg_52wks	3.34%	5.29%	2.15%	-0.18%	-3.65%	-2.40%
usgg10yr index_chg_52wks	2.73%	5.29%	3.91%	0.34%	3.18%	0.31%
sales_3yr_avg_growth	1.84%	2.38%	2.01%	3.54%	3.44%	3.21%
jpy curncy_chg_1twks	1.38%	4.35%	2.64%	0.87%	3.69%	3.27%
tpx index_chg_1twks	0.30%	3.38%	3.12%	1.70%	-0.25%	1.10%
nky index_chg_1twks	0.07%	3.57%	3.10%	1.43%	-0.76%	0.58%
jpy curncy_chg_12wks	-0.11%	1.18%	1.85%	0.42%	1.27%	0.37%
usgg10yr index_chg_52wks	-0.32%	-4.27%	-5.54%	-9.78%	-15.10%	-15.76%
ebitda_margin	-0.38%	1.16%	0.35%	1.76%	4.31%	3.25%
ebit_margin	-0.39%	1.15%	0.33%	1.73%	4.30%	3.23%
jpy curncy_chg_4wks	-1.25%	-0.64%	0.81%	1.60%	-0.06%	-1.32%
jpy curncy_chg_26wks	-2.78%	-2.02%	-0.18%	-0.87%	-3.30%	-2.20%
trailing_12m_sales_growth	-3.91%	-1.17%	0.88%	1.01%	2.25%	1.81%
jpy curncy_chg_52wks	-3.98%	-1.19%	-2.57%	-4.08%	-3.47%	-3.30%
ipo_pe	-9.94%	-10.45%	-10.65%	-9.98%	-9.82%	-7.70%
ipo_ps	-10.09%	-10.49%	-10.75%	-10.39%	-10.17%	-7.85%
ipo_pb	-17.46%	-17.88%	-18.47%	-17.54%	-16.73%	-12.95%
eqy_init_po_sh_px	-23.27%	-23.88%	-24.67%	-23.49%	-22.51%	-17.46%

We can visualize this to see the trend more clearly.

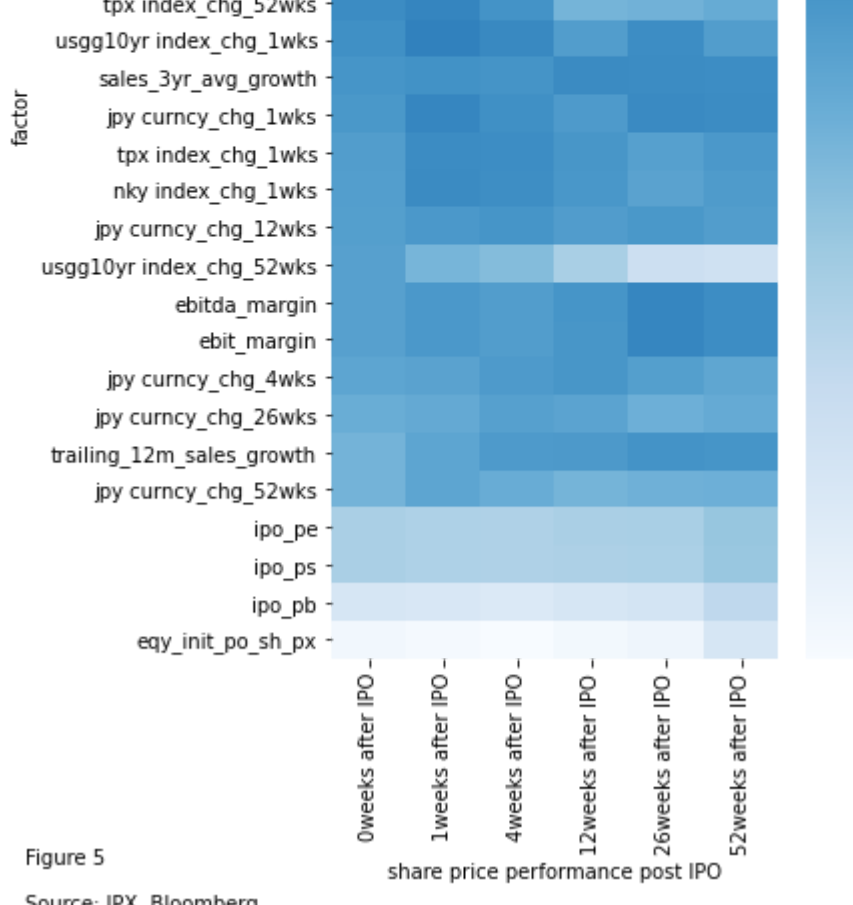


Figure 5  
Source: JPX, Bloomberg