

Analysis on Derby Winners

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Abstract

- The speed of Japanese Derby winners was increasing overtime, likely due to improvement of horse breeding technique and changing of racecourse condition
- Japanese horses stay on the field for a longer period.
- Despite having the largest purse, Japanese derby winners has a significantly larger chance of scoring wins but failed to score any major wins in later career, and the least chance of scoring major wins in later career.

Introduction

- The Epson Derby is one of the most prestigious flat horse race events with one of the longest history. Based on Epson derby, countries established their own derbies with similar intentions.
- In most countries, derby is only open to 3yo horses, and its winner is considered as one of the best-performing 3yo horses that year.
- Statistics on Derby winners reflect the ability of training, breeding, and the strategy of horse racing participants.

Methods

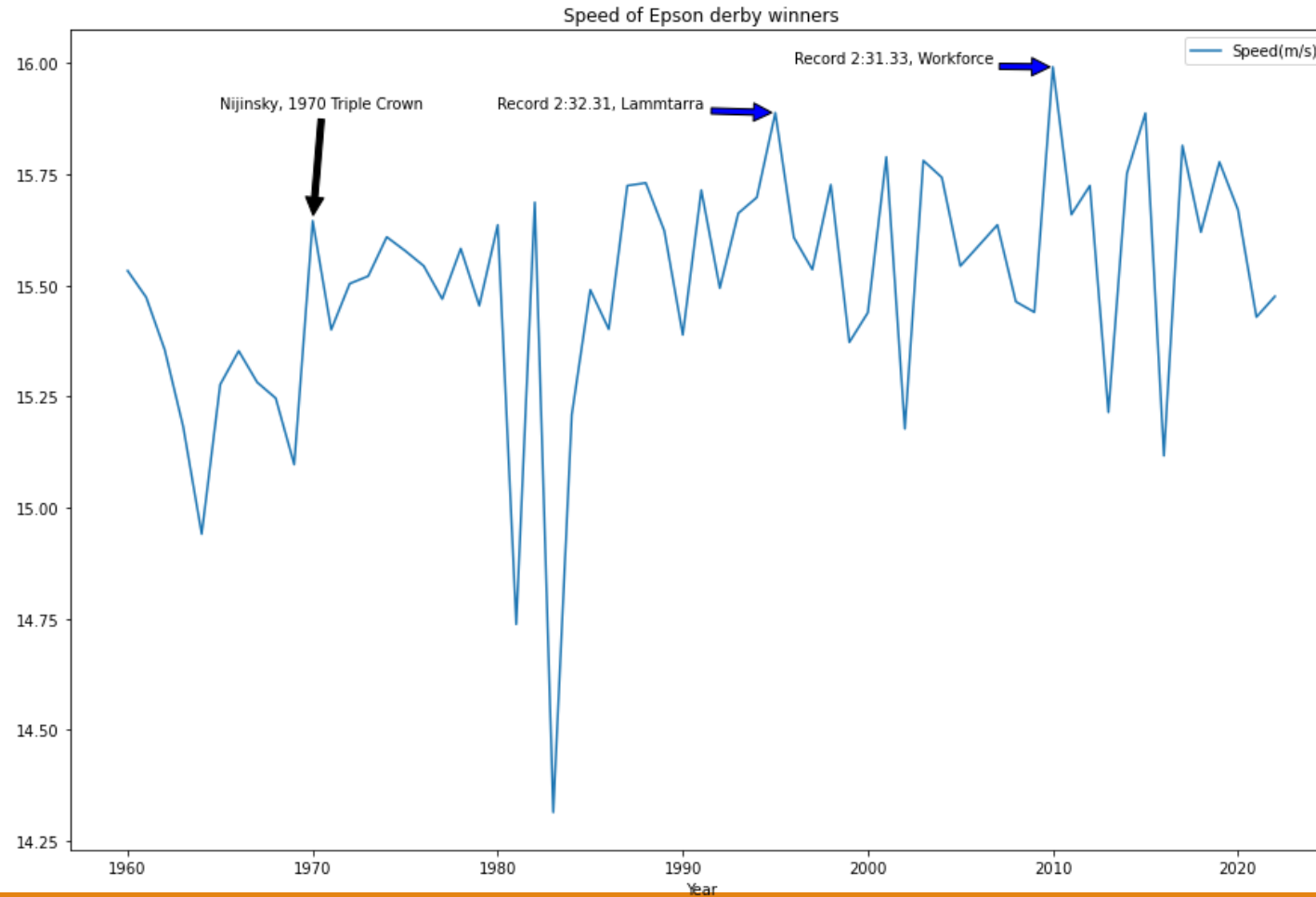
- Data of finishing time used in this report is extracted from Wikipedia by web scraping, most of the race records are from ahonora.com
- Japanese derby, Irish derby and Epson derby are compared, due to their similar conditions of ~2400m turf.
- The performance of Derby winners after Derby was categorized into divisions based on their later winnings and the importance of those winnings.
- The Ages of retirement of those Derby winners are also being graphed.
- Winners that are specifically noticeable are labeled in the graph

Results

The fastest horse wins the 2,000 Guineas, the luckiest horse wins the derby, and the best horse wins the St.Leger.

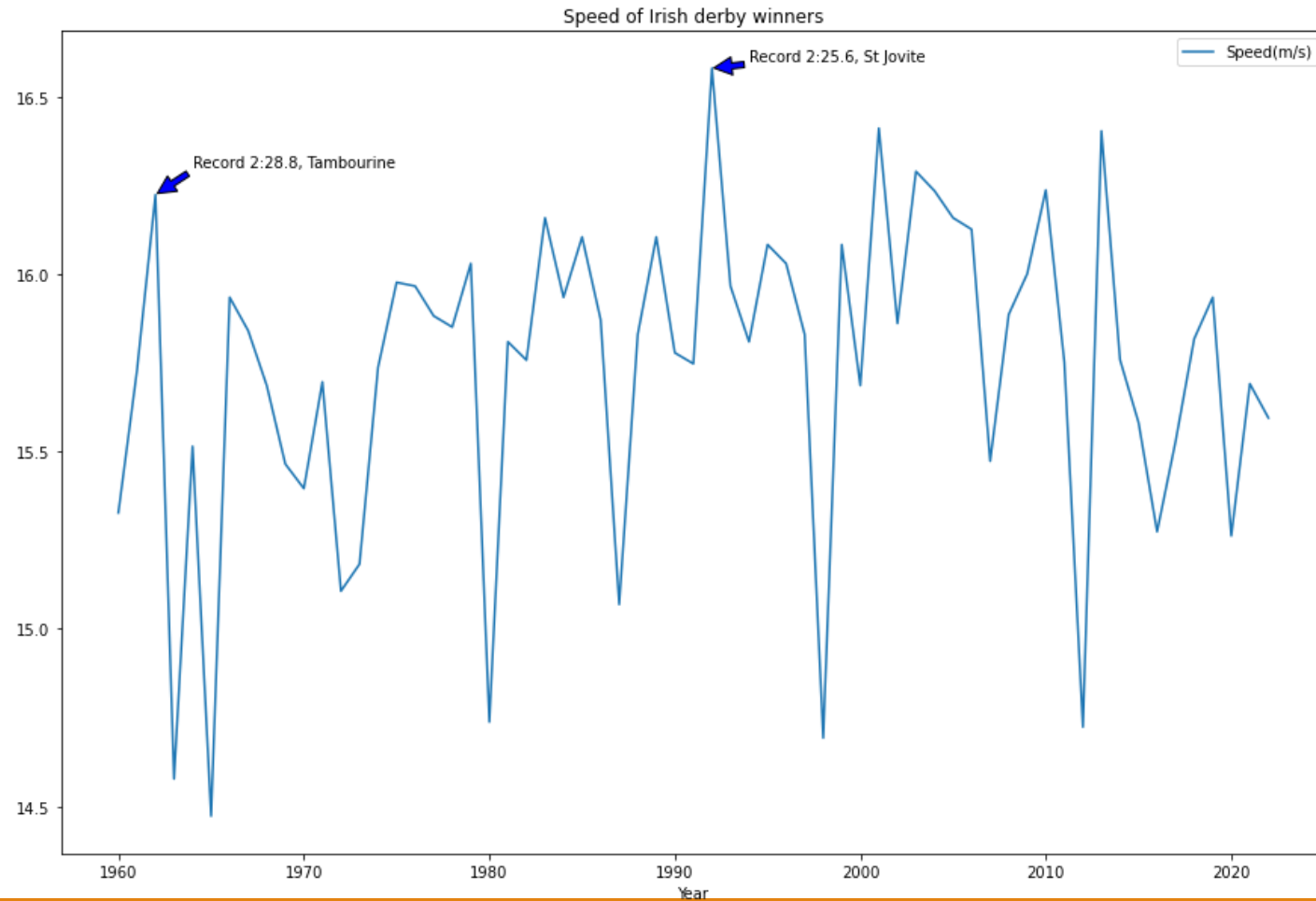
--British Saying

Speed of Derby winners, 1960-2022



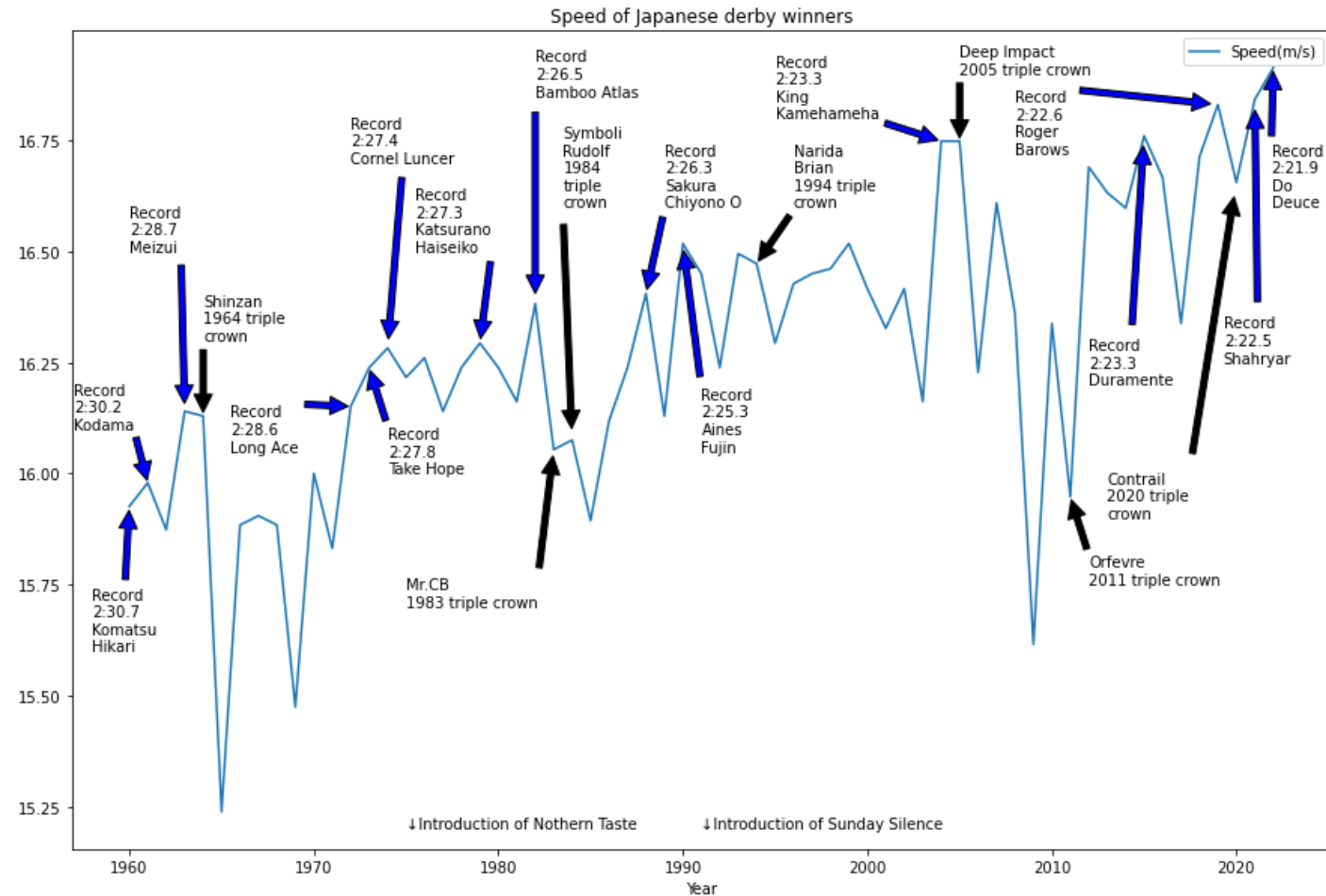
Pearson Coefficient:0.36712544305571326
Pearson Value:0.003079221917464243

Speed of Derby winners, 1960-2022



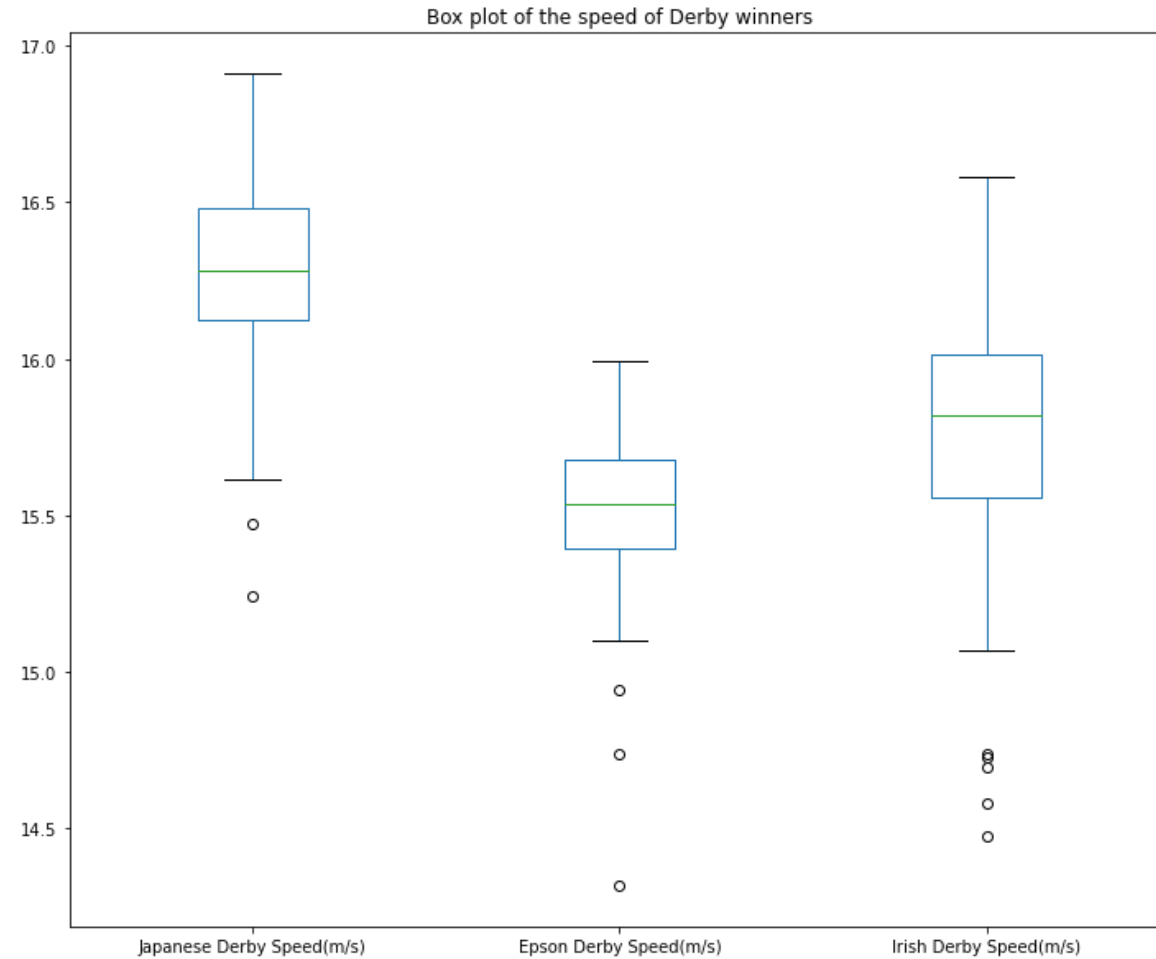
Pearson Coefficient:0.18919825215452477
Pearson Value:0.13751940380875227

Speed of Derby winners, 1960-2022



Pearson Coefficient:0.7155751123428278
Pearson Value:4.3853433224936194e-11

Speed of Derby winners, 1960-2022



Findings and Implications

Findings:

- 1, Japanese derby winners has its speed increasing from 1960 to 2022, with multiple (15) record breakers.
- 2, Japan has the most triple crown winners among those three countries in this time period (7)
- 3, Japan has the fastest winners among those three countries
- 4, Epson and Irish derbies experienced relatively small (comparing to Japan) improvement on finishing speed from 1960 to 2022, especially for Irish.

Implications:

- 1, Japanese horse breeding and training technique has improved during these 60 years, together with turf conditions becoming more suited for high-speed runners.
- 2, Likely that Epson racecourse has the softest turf among those three while Tokyo racecourse has the toughest, consider that UK is generally recognized as one of the most advanced countries on this field.
- 3, Likely that Japanese horse owners are more prone towards finishing the triple crown challenge.

Discussions

- Generally speaking, there are two factors that can affect the finishing speed of horseraces: the improvement the horseracing industry experienced, and the changing in racecourse condition. It is almost certain that the improvement European industry experienced is no match of what Japanese horse racing industry experienced, but the changing in racecourse condition shall also be taken into consideration.
- As a latecomer, Japanese horseracing industry has experienced rapid growth in scale and technological level in the past 60 years, which can be directly perceived by investigating the improvement of derby finishing speed. After the introduction of Northern Taste and Sunday Silence as two of the most important studs, Japan was recognized as part 1 country by ICSC in 2007, showing that its horseracing industry is then comparable with advanced countries like US and UK. However, it is notable that the changing in Japanese turf conditions also played a role in it. In fact, Japanese turf has experienced two major changes in past 60 years, each making the turf becoming more suited for high-speed runners.

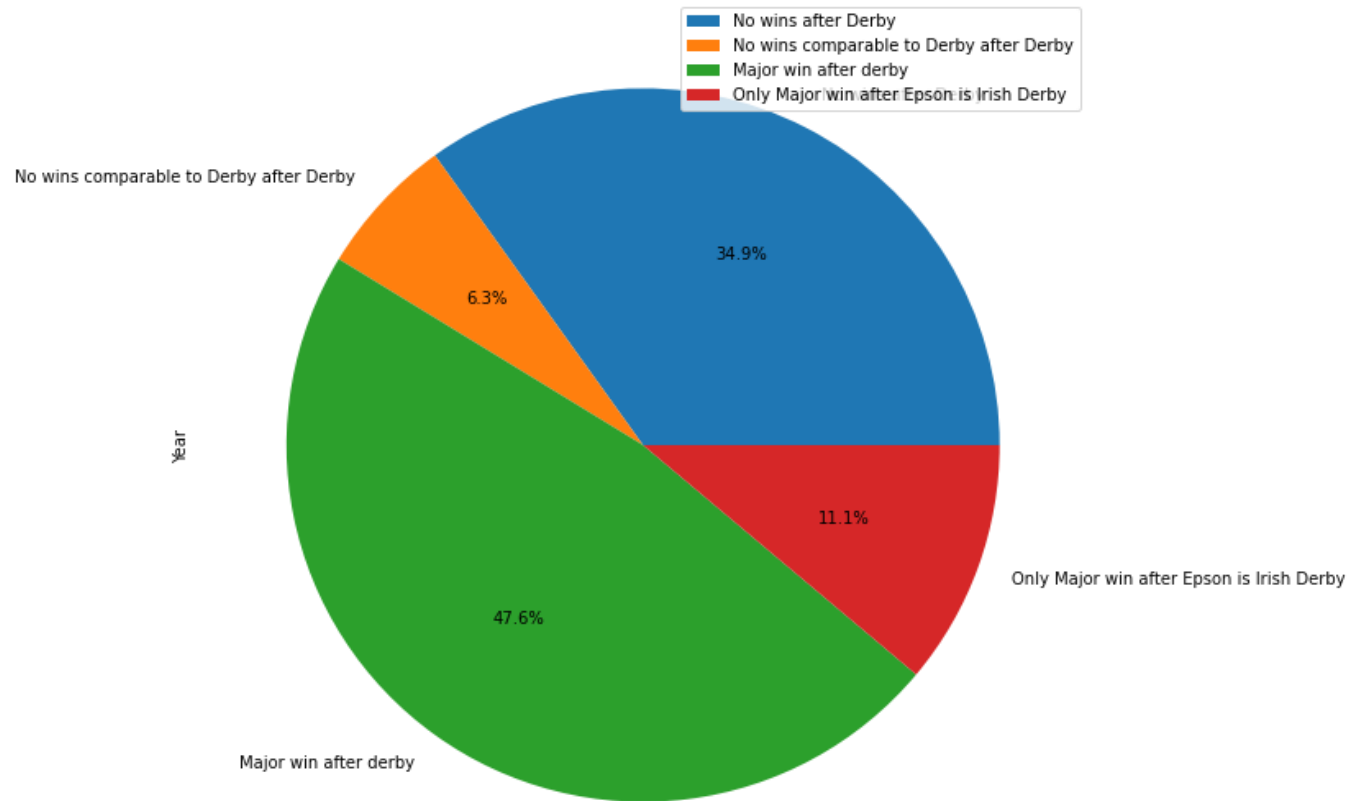
Later career of Derby winners

“Let’s show’em what a Derby winner can do!”

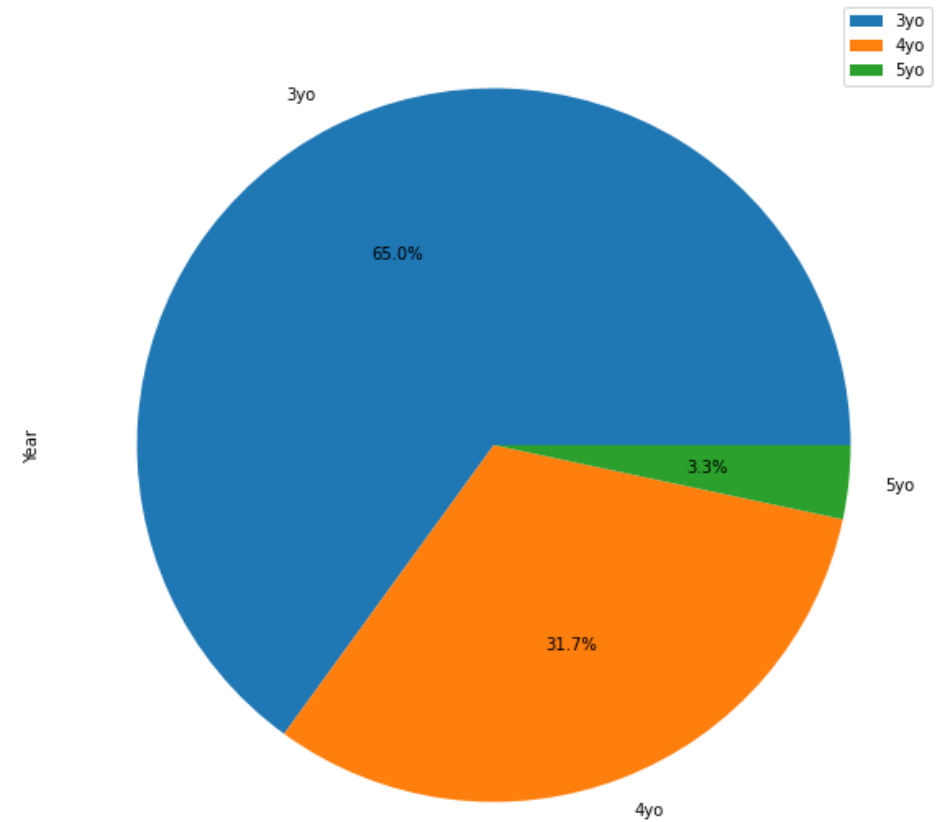
--Narration of 1993 Arima Kinen, won by 1991 Japanese Derby winner Tokai Teio

Later achievement and age of retirement

Later career of Epsom Derby winners

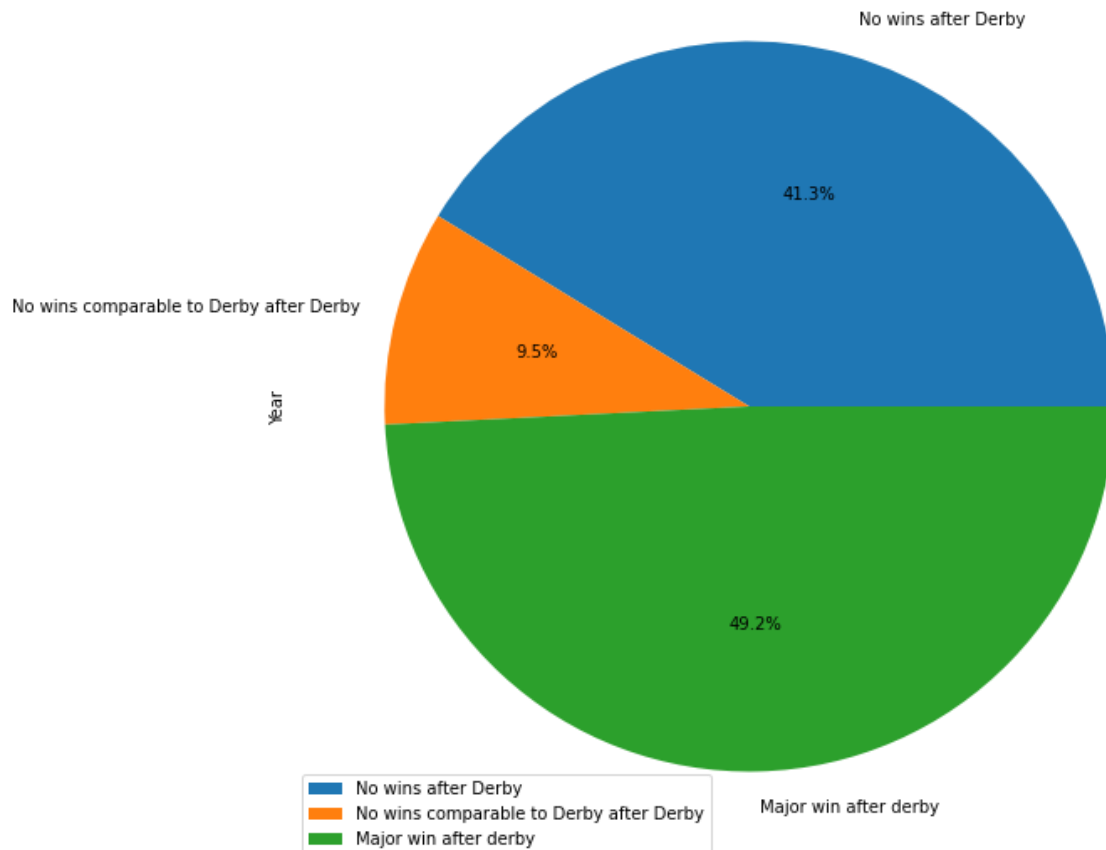


Age of retirement of Epsom Derby winners

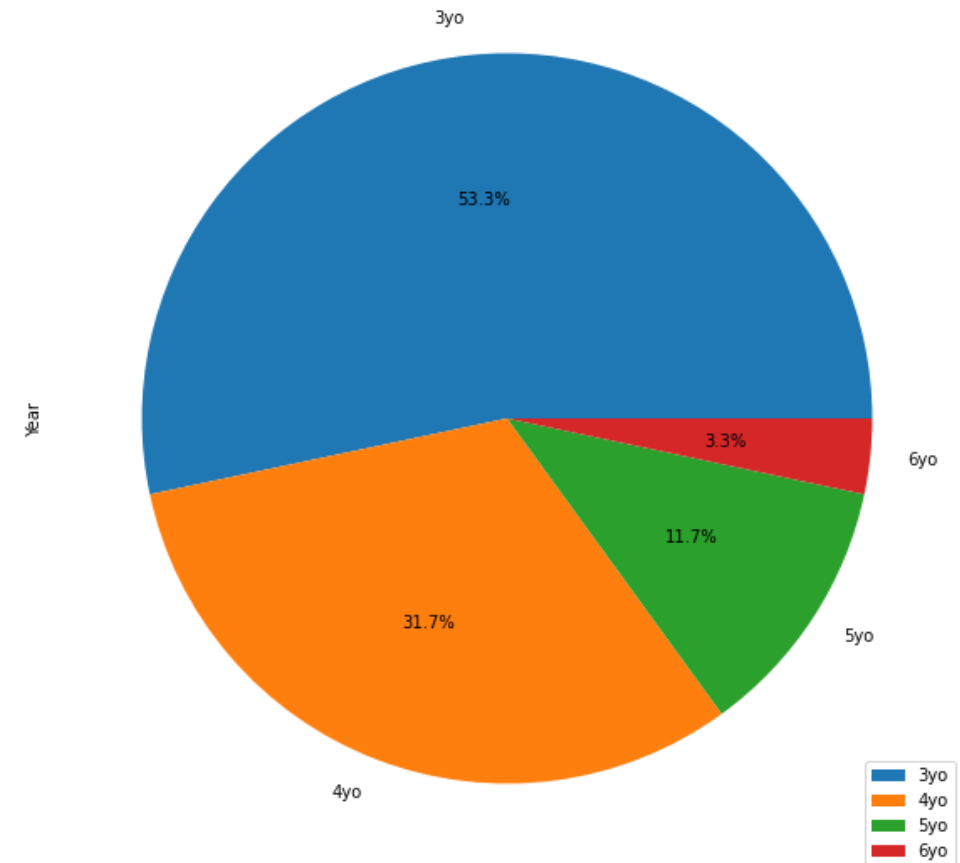


Later achievement and age of retirement

Later career of Irish Derby winners

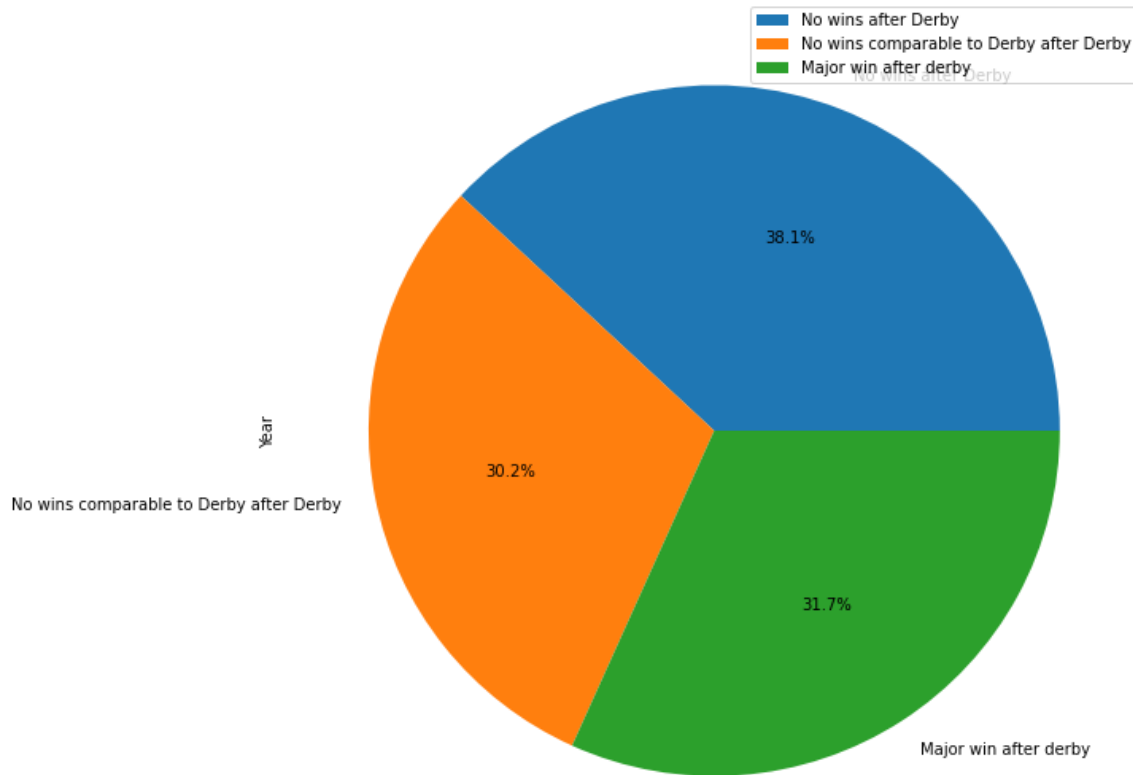


Age of retirement of Irish Derby winners

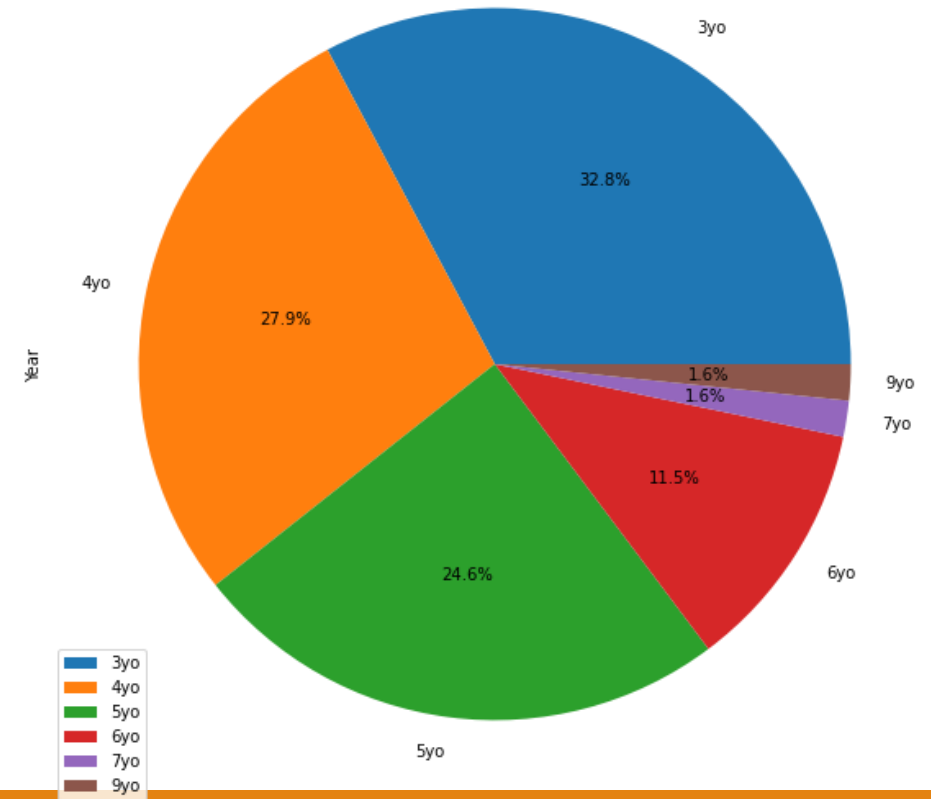


Later achievement and age of retirement

Later career of Japanese Derby winners



Age of retirement of Japanese Derby winners



Findings and implications

Findings:

- 1, Among all three countries, Irish derby winners have the largest possibility of being successful in the future while Japanese derby winners have the least chance to score major wins in the future.
- 2, Japanese derby winners tend to run for a longer time period, while Epson derby winners have the largest chance of retiring at 3.
- 3, Japanese derby winners can stay in service until 9yo while Epson derby winners only stay in service till up to 5yo.
- 4, Japanese derby winners have a significantly larger chance of scoring wins but failed to score any major wins in the future.

Implications:

- 1, Likely due to geographic distance, a significant portion of derby winners from UK and Ireland raced in both countries.
- 2, Likely that different routine of horse development has formed in Japan and British isles, leading to the result of the year on racecourse.
- 3, Japanese horse owners seemingly prone to let their horses stay on racecourse for a longer period, hoping to obtain more achievement instead of retire to stud.
- 4, The situation of Japanese derby winners having a significantly larger chance of scoring wins but failed to score any major wins in the future has a possible reason of having less available major races compare to their European counterparts.

Discussion

- It is noteworthy that most, if not all, derby winners are decent horses which has a large possibility to win in future races, failure to gain any wins after derby can be due to various reasons, including wound and decision of early retirement.
- It seems that British horse owners has developed a standardized procedure of raising horses after their derby wins since the 1980s, after the derby, horses will be sent to International stakes or KGVI&QE Stakes, later Prix d'Arc de Triomphe, in many cases the horse will directly retire after racing in the Prix de l'Arc de Triomphe. Rarely that Epson derby winners choose to challenge St. Legers, led to the fact that no triple crown winners emerged after Nijinsky.
- Possibly due to cultural reasons and JRA propaganda, Japanese horse owners tend to let their horses stay on field longer even after their successful 3yo season. All triple crown winners in Japan ran in their 4yo season, and most of them ran their 5yo season, while Nijinsky retired at 3. Also notable that Irish derby winners tend to race for a longer time period after 2000 where only 5 of them retired at 3.
- The number of races with comparable level with derby is smaller in Japan due to geographic isolation and size of the industry, which is likely a reason for Derby winners failing to score any major races after the derby, it might also be another reason that Japanese horse owners tend to let their horses stay on field for a longer period so that they have a chance to participate in more major races.

Conclusion

- In the past 60 years, Japanese horseracing has experienced significant improvement on their overall level, which can be indicated from its increasing derby speed.
- Possible due to racecourse condition, Japanese derby is significantly faster than Epson and Irish derbies.
- Likely due to difference in overall horse racing cultural environment, Japanese horse owners choose a different route comparing to their British counterparts. In general, Japanese horses stay on the field for a longer period.
- Despite having the largest purse, Japanese derby winners has a significantly larger chance of scoring wins but failed to score any major wins in later career, and the least chance of scoring major wins in later career.

Appendix 1: Some major 2400m races and record speed

Race	Japan Cup	Prix de l'Arc de Triomphe	KGVI&QE Stakes	Breeders' Cup Turf	Dubai Sheema Classic	Epson Derby	Grand Prix de Paris	Irish Derby	Japanese Derby
Year	2018	2011	2013	2012	2016	2010	2005	1992	2022
Horse	Almond Eye	Danedream	Novellist	Little Mike	Postponed	Workforce	Scorpion	St Jovite	Do Deuce
Time	2m20.6s	2m24.49s	2m24.60s	2m22.83s	2m26.97s	2m31.33s	2m24.3s	2m25.6s	2m21.9s
Average Speed (m/s)	17.07	16.61	16.64	16.9	16.4	15.99	16.63	16.58	16.91