Debt trap diplomacy? A preliminary look at China's overseas corporate investments between 2005-2022

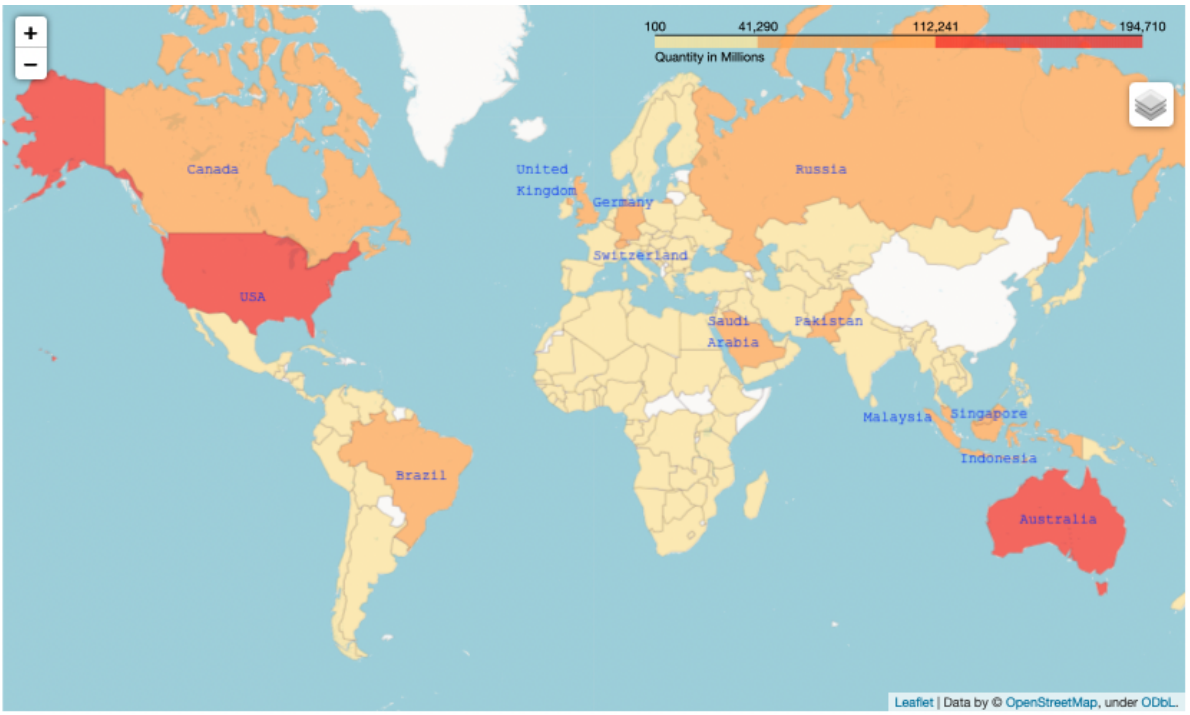
Project aims

a) to identify trends in Chinese overseas corporate investments
b) to identify if there's correlation between investments and common risk indicators such as corruption, credit risk and gdp to see if data supports assertions of "Debt Trap Diplomacy"

---

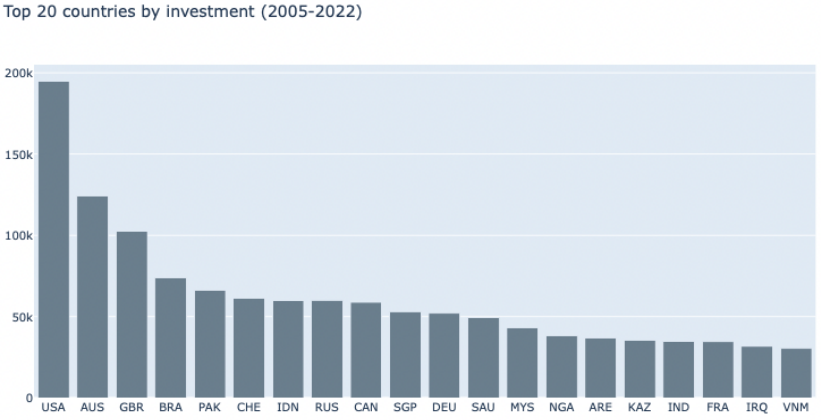
1. EDA

1.1 Global overview
80% of all countries (156/195) have received investment from Chinese corporate entities between 2005-2022. By using a choropleth heatmap, we can easily visualise on a map which countries received the top share of investments.



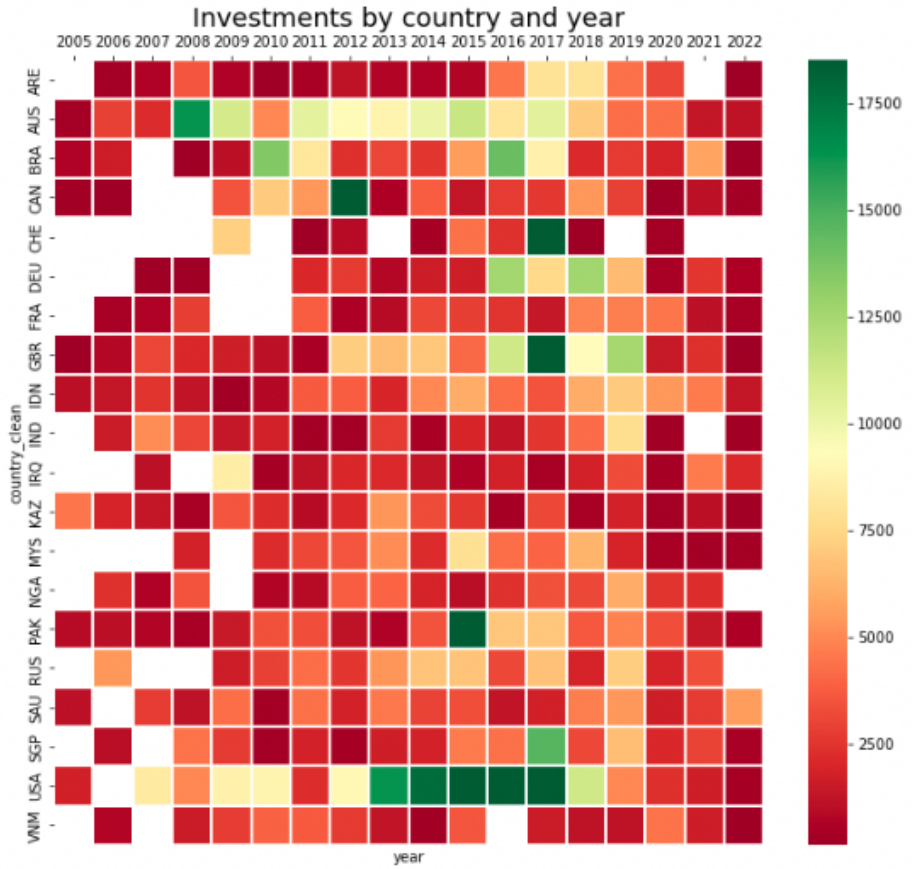
1.2 Top countries

The USA was the country that received the most investments by far from 2005-2022, with second-placed Australia at a much lower amount.



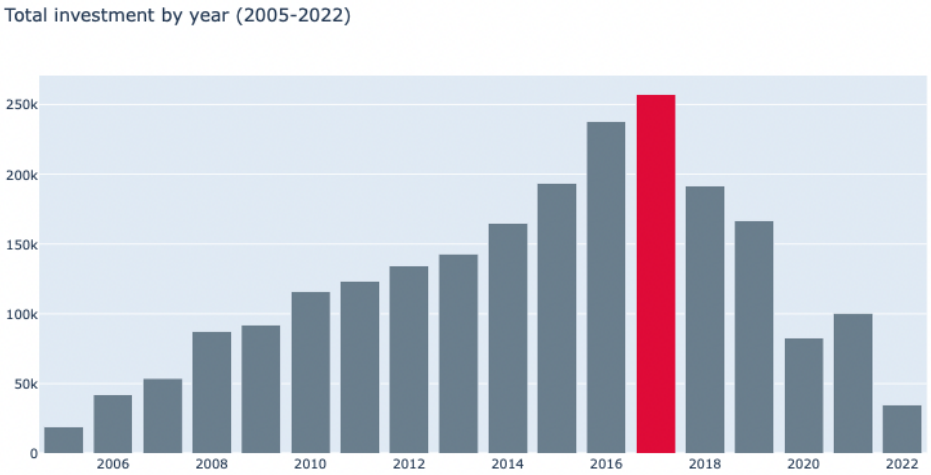
1.3 Investments by top countries and year

The heat map below represents the top 20 countries across the various years from 2005-2022, with green representing the highest amount of investments on the scale. From this, we can see that China invested most heavily in the US between 2013 and 2018, while investing most heavily in Australia between 2008 to 2015, with a dip in 2010.



1.4 Investments by year

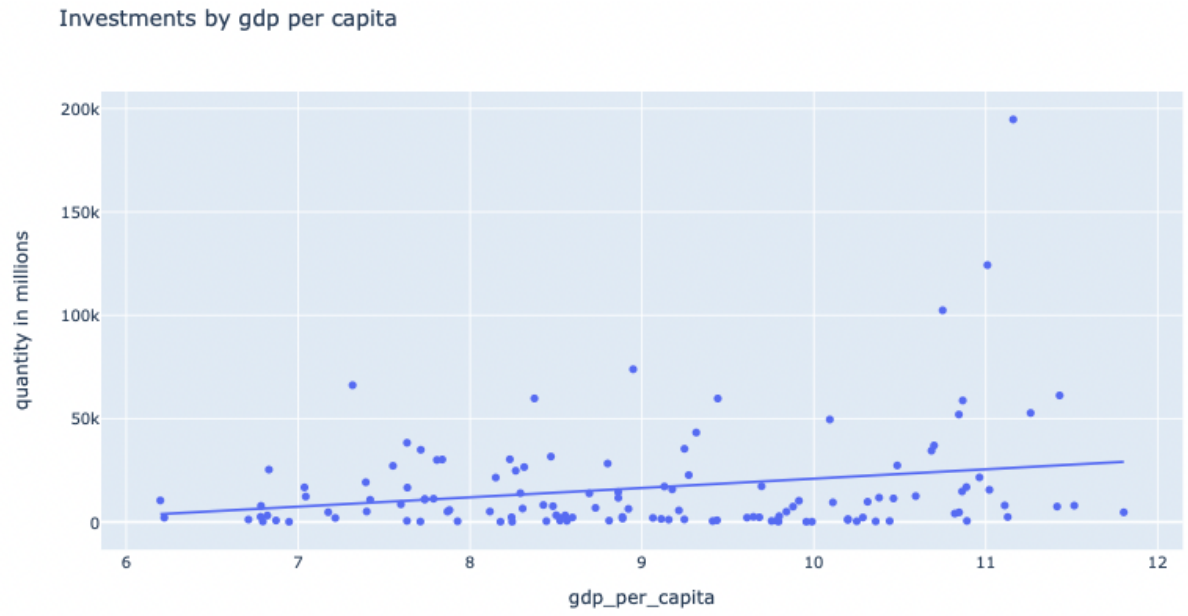
By analysing by year, we can see that China's overseas investments increased year on year between 2005 to reach a peak in 2017, before dropping sharply in 2018 and then again in 2020.

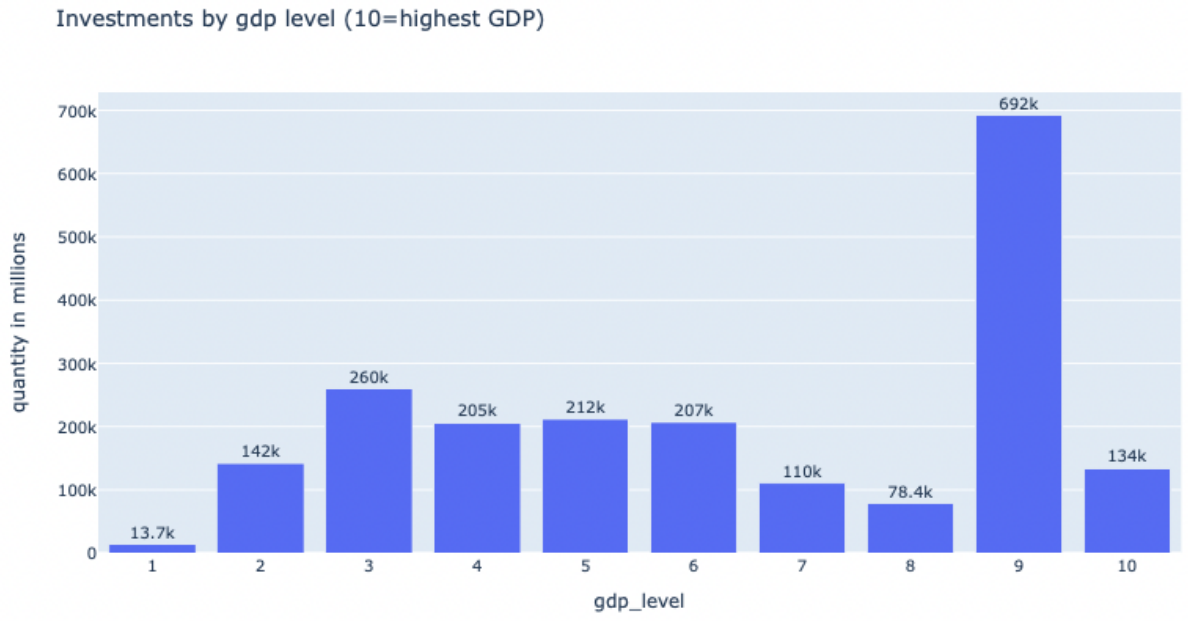


Investments then reached its lowest in 2022, dropping to the same level as in 2006.

2.1 Investigating whether quantity of investments correlates with gdp per capita

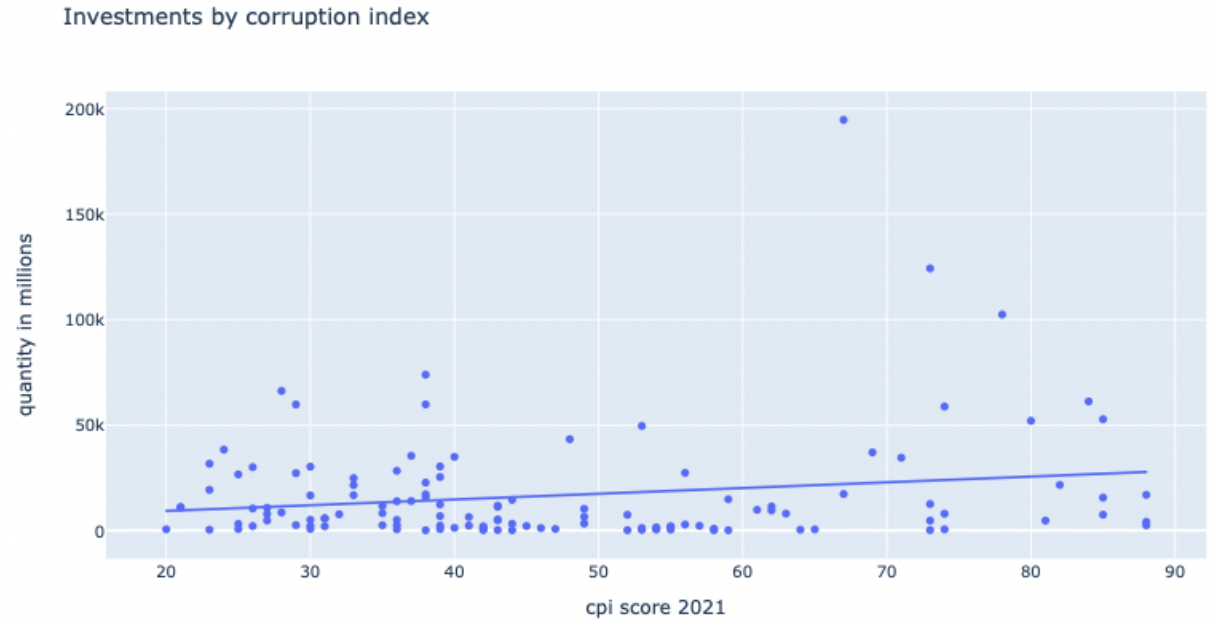
By plotting all countries on a scatterplot, we observe a very slight correlation of 0.24, which does not give a strong enough trend to come to a conclusion. I then split the gdp per capita into 10 bins, with 10 being the highest gdp per capita and 1 being the lowest, to see how it would affect the data. The data seemed to indicate that Chinese investments tended to flow more into countries with higher gdp per capitas, with 40.2% of all investments going into countries in the top 2 bins (21 countries in total). Data thus seems to indicate that Chinese investments were disproportionately placed into countries with higher gdp per capitas, indicating lower risk.

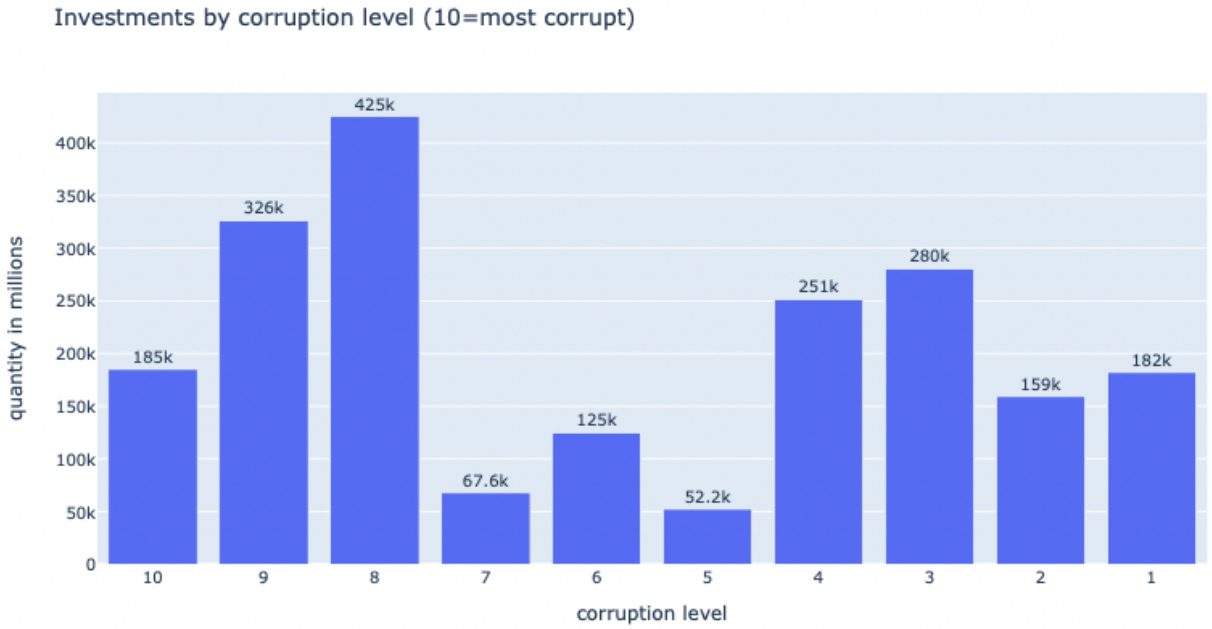




2.2 Investigating whether quantity of investments correlates with perceived corruption

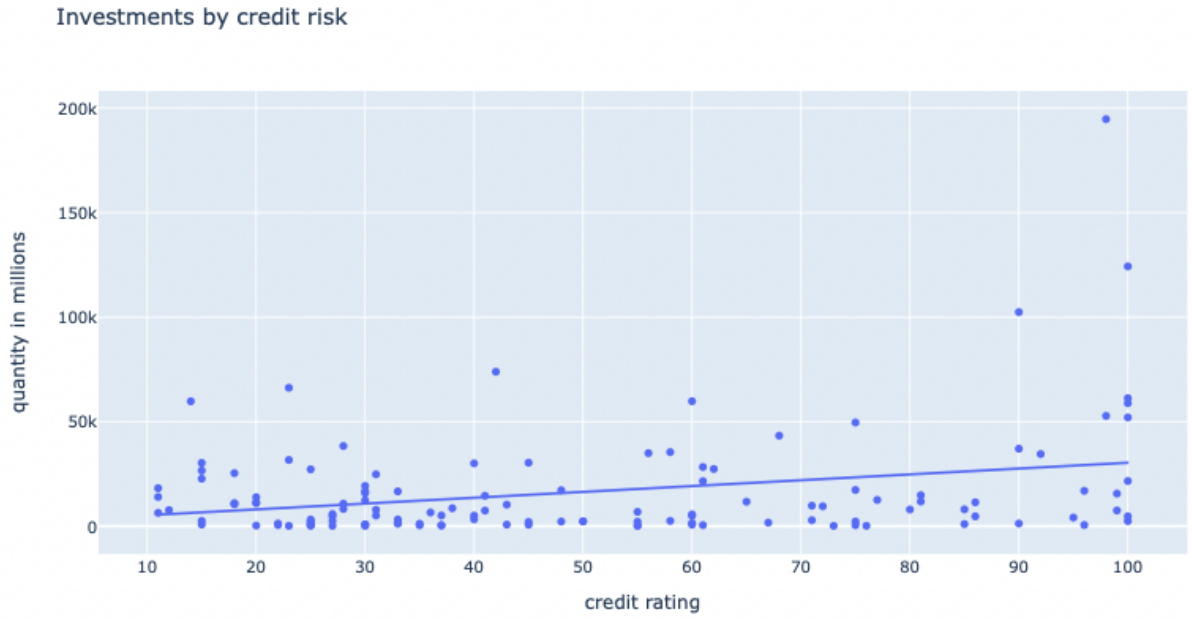
By again plotting all countries on a scatterplot, we observe an even weaker correlation of 0.19, which does not give a strong enough trend to come to a conclusion. I then split the corruption scores into 10 bins, with 1 being the lowest levels of perceived corruption and 10 being the highest. By classifying bins 10-8 as high perceived corruption and 1-3 as low perceived corruption, we can see that 30.2% of investments went into low perceived corruption countries, while 45.6% of investments went into countries with high perceived corruption. This indicates that investments were disproportionately placed into countries with higher levels of perceived corruption, indicating higher risk.

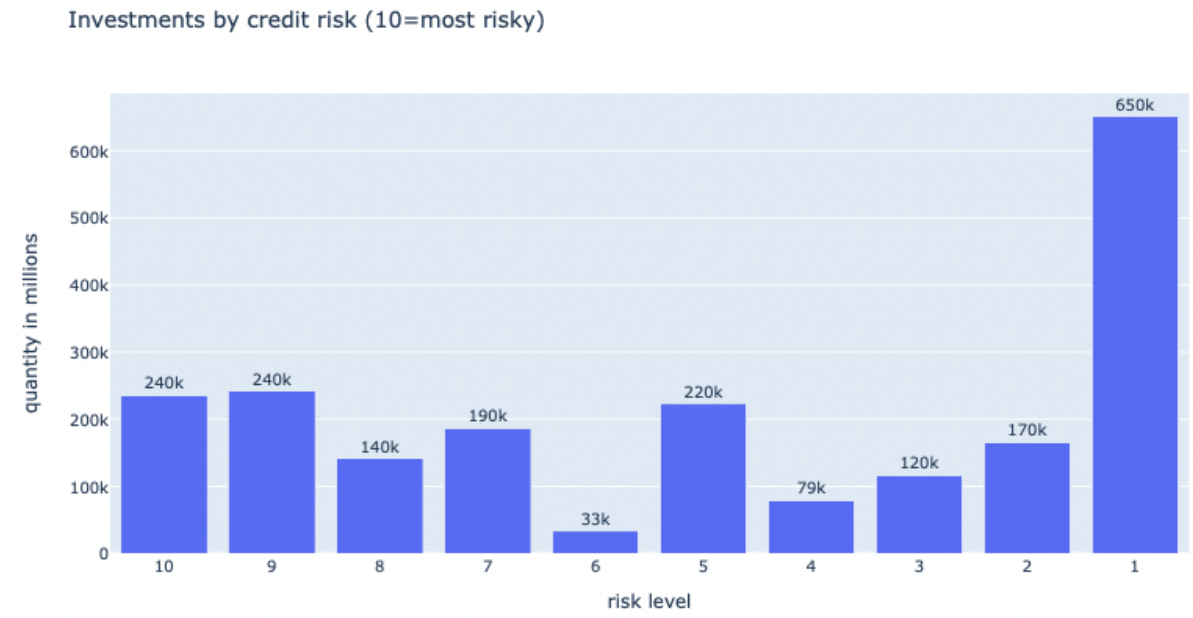




2.3 Investigating whether quantity of investments correlates with credit rating score

You know the drill. I plot all countries on a scatterplot, and observed a stronger correlation of 0.30, which although is still pretty weak, at least gives a better correlation than previous indicators. I split the credit scores into 10 bins, with 1 being the lowest levels of credit risk (most stable economies) and 10 being the highest levels of risk (most unstable economies). By classifying bins 10-8 as high credit and 1-3 as low credit risk, we can see that 45.1%% of investments went into low risk countries, while 29.8% of investments went into countries with high risk.





3. Final conclusions

On a very provisional level, the positive correlations observed between factors such as perceived corruption, gdp and credit risk indicates that Chinese investments on a whole tended to be placed into "safer" economies, which do not support assertions of debt trap. However, we also observed a disproportionately high amount of investments placed into countries with higher perceived corruption, showing that there were a large amount of investments placed into "riskier" economies as well, which could support assertions of debt trap.

Either way, this project isn't meant to be conclusive, and more in depth analysis will have to be done before any conclusions can be made.

4. References

Investment: https://www.aei.org/china-global-investment-tracker/
Credit rating:https://tradingeconomics.com/country-list/rating
Corruption:https://www.transparency.org/en/cpi/2021
GDP: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD