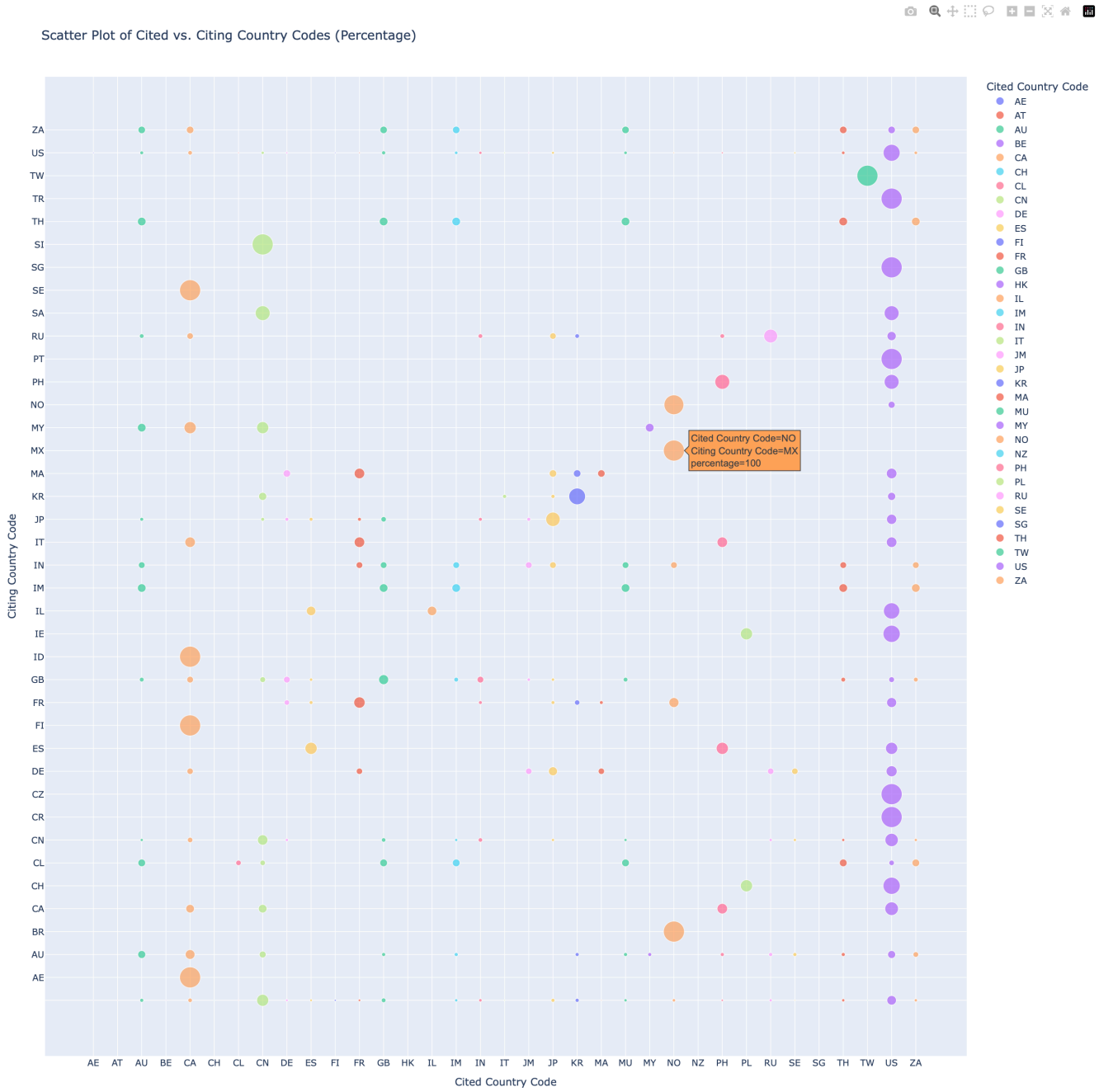
# eMails from Ricardo

#mtc/patlibs
#mtc/depatech

18.06.2025

Dear Arne,
I had some trouble managing a script considering Forward citations of patent families regarding REE (we have done the work with Patstat but not yet using TIP), but now seems I solved the issue. I leave in attachment the result. In simple words, on horizontal axis you may see country codes of residence of applicants corresponding to the REE patent families (the dataset I get from Patstat/TIP). The vertical axis shows the country codes of players CITING the patent documents of the dataset (so Forward citations). For sake of simplicity, my script considers two possibilities, one in which there might be players with unknown residence, plus another one in which I exclude these cases of unknown residence (and the results are those in attachment but the script prepares diagrams for both cases). So if you look at the diagram and consider US residents on horizontal axis (cited because filed applications corresponding to families of my dataset) you can see on vertical axis that they are cited in a significant amount of foreign countries (listed on vertical axis, and as can be reasonable they are also cited within US). On the other hand, it's true that there is a huge amount of Chinese patent applications in my dataset, however if you look at CN on horizontal axis and the corresponding countries of the vertical axis, the conclusion would be that they are more seldom cited from foreign applicants in comparison to the case of US residents. Even Canadian applicants are performing better according to forward citations. If it's not too demanding for you, would you like me to send you the .ipynb file to be analyzed with the help of Claude? If working fine then we could also include the citations in our presentation... Pls. let me know if you like.
Looking forward to hearing your feedback,
Riccardo.




scatter_plot_country_codes_percentage.

HTML 4,7 MB · 18. Jun 2025

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Dear Carlos and Arne,

as agreed yesterday regarding the aspect of data mining (independently from patent sources) I provide the following link (I hope it works, otherwise just let me know so that I need to send files in smaller batches): http://container.area.trieste.it/storage/cb5843322e318c4faacf478920a8ca0d/REE_material.zip

Upon unzipping you will find the search strategy conceived for Espacenet (txt document) and the powerpoint I shared (not the definitive one, but still workable according to Arne). Plus, there are some pdf files that I downloaded yesterday night from JRC (maybe searching on google there might be even more recent data I did not check thouroughly).
Most important are two pdf files, respectively entitled "Rare_Earth_Metals_Market" and "Rare_Earth_Metals_Recycling_Market" (the latter regarding the point we have tried to make in the publication I mentioned in the powerpoint). These two files have been provided by a colleague who told me that very likely there could be data formatted as MSExcel but before sending to you perhaps Claude could indicate which tables/diagram are of true interest and then we could identify the corresponding Excel files for further elaboration.

I am very curious to know whether Claude will highlight some correlation between patent trends and market data (in some instances a kind of correlation seems evident at first glance but in other cases might not be there per force... let's see what AI suggests 🤔 ).

I wish you both a wonderful day,

Riccardo.

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13.06.2025

Dear Carlos and Arne,
it has been a pleasure to talk with you yesterday. As promised, I leave in attachment three examples of codes (I have cleaned them to skip row codes corresponding to experiments I have made earlier) plus the presentation shared during our meeting.

1. “REE ranking applicants..."  allows to visualize a list with ranking of the applicants based on descending order of number of patent families and a diagram appears also on the bottom of the screen.
2. "REE family avg_size" displays a bar chart with ranking of countries of residence of applicants ordered according to the average family size taking also into account the Patstat attribute "earliest_filing_year" (this attribute determining different colors of the bar segments)
3. “REE classific.co-occurrence..." provides an array (i.e. displaying classification codes on both horizontal and vertical axis) that can be usually produced with the statistic analysis tool incorporated in Patstat online; however, in my case the granularity is higher (as far as I remember with Patstat one can visualize IPC at subclass level only, instead in my case you can visualize at main group also and even at subgroup level if necessary). As in Patstat one can compare classification codes considering 5 yrs intervals (I have chosen one interval covering earliest filing years between 2012 and 2017 and second interval for 2018 - 2023).

Just to compare visualization during the "pre-TIP age" I could include a couple of slides where diagrams obtained with Power BI show data corresponding to 1) and to 3) in this case just limiting to ranking of IPC codes (I mean not displayed in pairs), if you agree.

I am sure Arne will be able to further improve the visualization of the data, for example making data visualization "more dynamic" or including attributes not yet considered in my analysis, that could leadto some improvement of what already visible in my diagrams 😉

If in the coming days I will be able to elaborate on further, perhaps I will be able to share with Arne alternative visualizations provided they would be considered even more suggestive, we will see...

For the moment I wish you both a wonderful weekend,
Riccardo.