

China Global Investment Tracker

_September 2021

Website: <https://www.aei.org/china-global-investment-tracker/>

Mission : analyse data from China_global_investment database with Dynamic cross analysis
-> **Identify actors and trend in chinese investments**, especially in South East Asia (SEA) with a focus on some selected countries and **urban engineering sectors**.

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Preparation work

1. Organize and order data and datasets
2. Determinate filters

Analysis

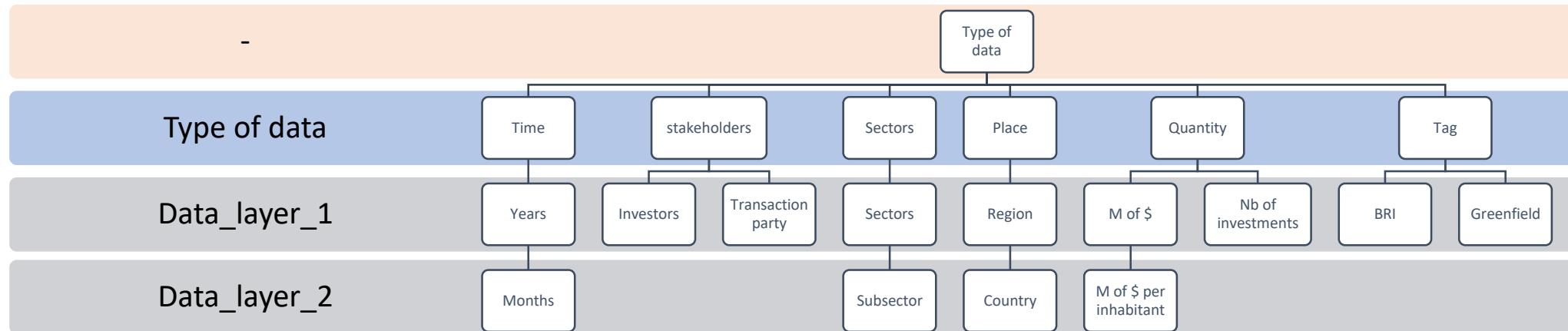
1. Evolution in time
2. Focus on sectors
3. Focus on regions
4. Focus on investors and transaction parties

Part 1: Organization of data (all datasets)

Data basis:

- 4 spreadsheets:
 - **Dataset 1 Investments**
 - **Dataset 2 Construction Contracts**
 - **Dataset 3 Troubled Transactions**
 - **Dataset 1 and 2 combined**

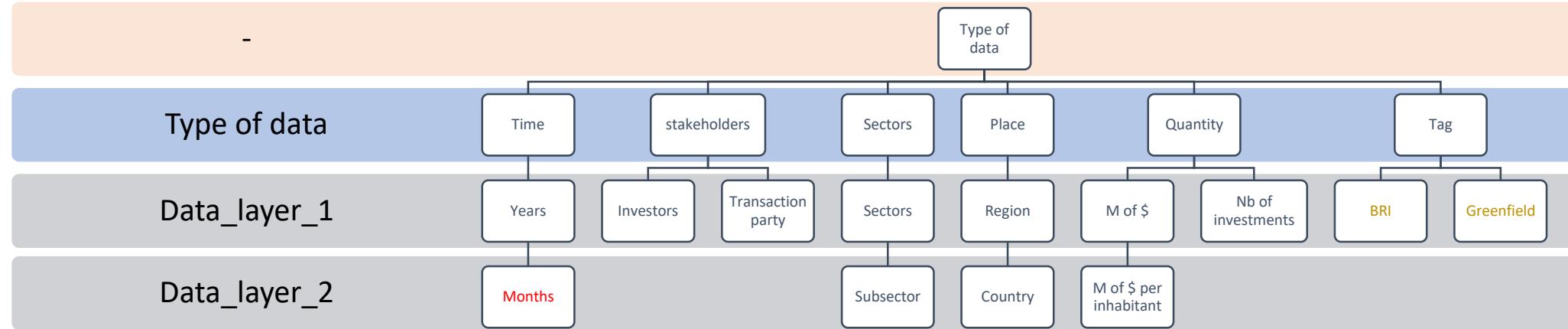
Organization of data (all datasets)



Identify types of data for dynamic cross-analysis :

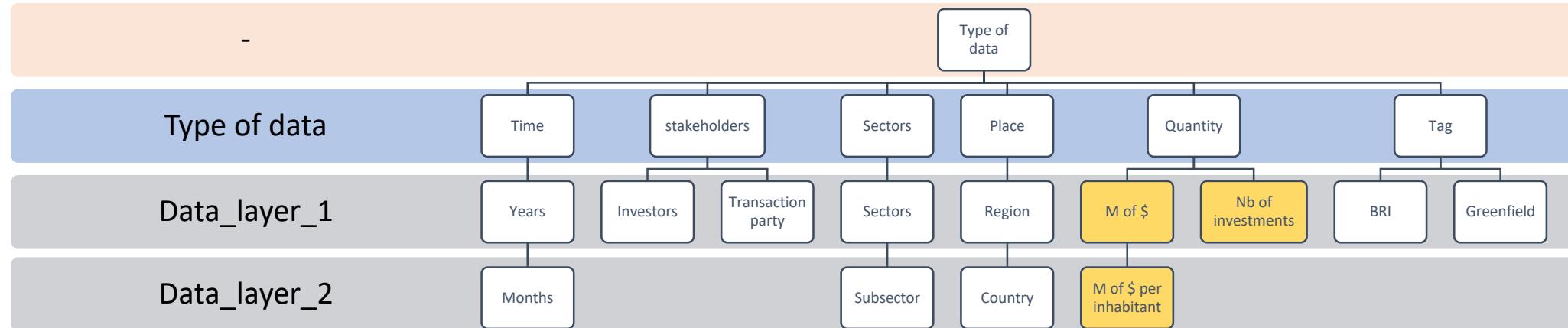
- **Ordinates** (or quantity measured) : what you want to observe, often a sum, an average, a maximum etc. We only select one ordinate often or several if we want to compare two points of view => only one variable then for readability (also require double scale).
- **Abscissas** (or variable) : variable according to which we want to observe the ordinate. A maximum of two can be selected. It can sometimes be more readable to compare several pie charts for an abscissa than to visualize a double abscissa (the second abscissa being changed to a single filter)
- **Filtres** : Filters are like the range of the data. They cannot be visualized but are used to eliminate data that does not interest us. You have to remember to vary only one filter at a time, and always work with the same ones in order to be able to compare the data. Do not break down data into too many filters (such as filtered years broken down into 6 filters of two years). Very important to identify and define them first.
- **Unique filters** : What I call a unique filter is when we are interested in a particular piece of data. Often only one is selected to see its behavior in relation to a global data. Their identification can be done in a second step after working with the data and making the first observations (ex : behavior of an actor, a country etc.).

Data to be deleted or fused?



1. **Months** : The question may arise of establishing filters for the year, but it seems irrelevant to focus on month-by-month data for such investments
2. **BRI and Greenfield** : Greenfields are investments that result in the formation of a new brand in a place that does not have one. The definition may seem vague but is associated with investments in new territories. It would be interesting to look early at the behavior of greenfields and BRIs which could be part of the same logic and then would have little interest in being treated separately (especially if when we look at SEA).

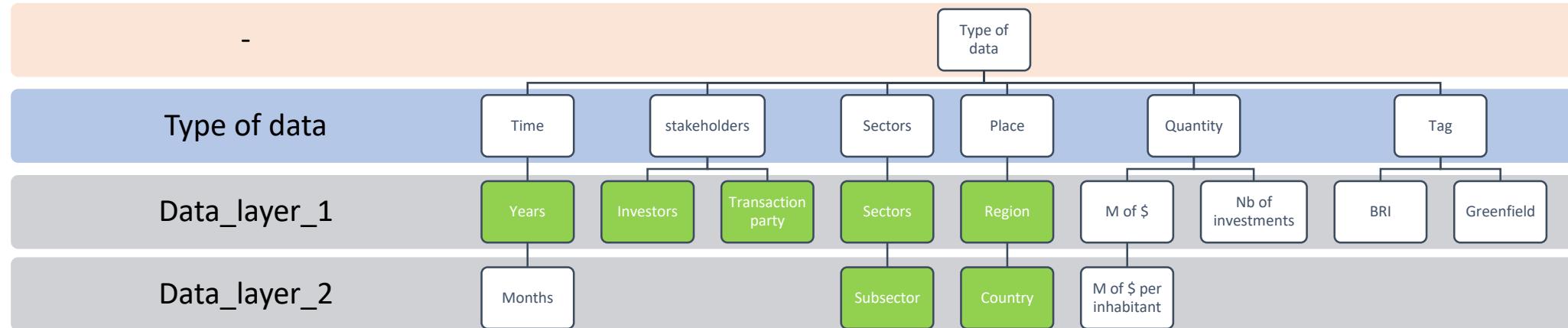
Ordinates



3 **ordinates** identified : What interests us each time are the investments, whether in \$ or in number (different information).

1. **Quantity in Millions** : data that will interest us in most cases, often more relevant than the number of investments
2. **Number of investments** : another ordinate that can be compared to the "Quantity in Millions" in order to get an idea of the size of one investment.
3. **Quantity in Millions per inhabitant (SEA only)** : gives an other perspectives that include the size of the country.

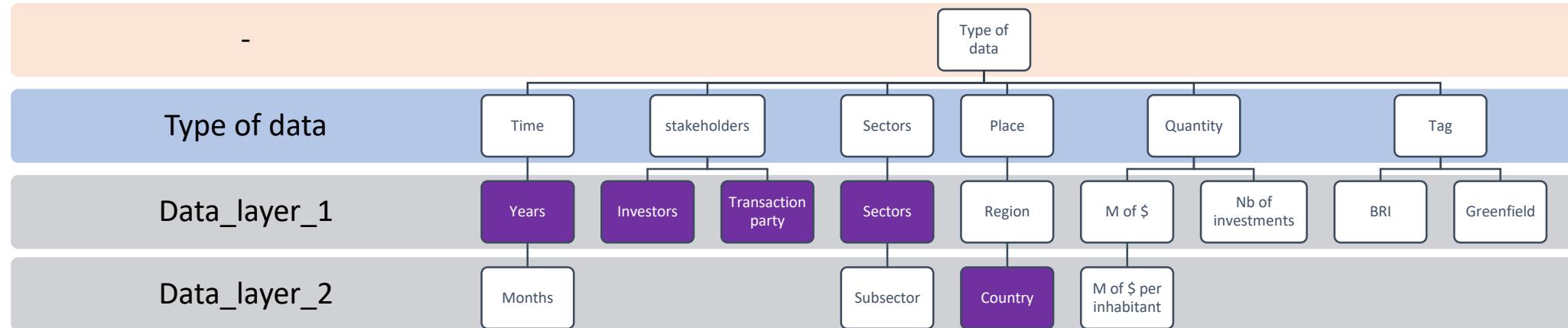
Abscissas



Abscissas identified :

1. **Year** : allows to observe the evolution of investments over time. I see it used with only a few filters (geographic, sector...) or unique filters (for 1 investor) but not crossed with other abscissas for visibility issues
2. **Investors and transaction party** : Means of identifying important actors, in particular filtered by or for 1 sector. Can be crossed with region to get an idea of the geographic footprint.
3. **Sectors and subsectors** : Used to determine the dominant sectors. Can be crossed with year filters to see changes in investments. Crossing with a unique investor filter allows to learn more about the investor in question. Crossing with region can give qualitative information on investment strategies.
4. **Region et country** : spatial dimension. Combine country abscissas and ASE region filter to determine where investments are made or not, for each sector or investor. Crossing with a year filter can provide information on changes in strategy, same for sectors.

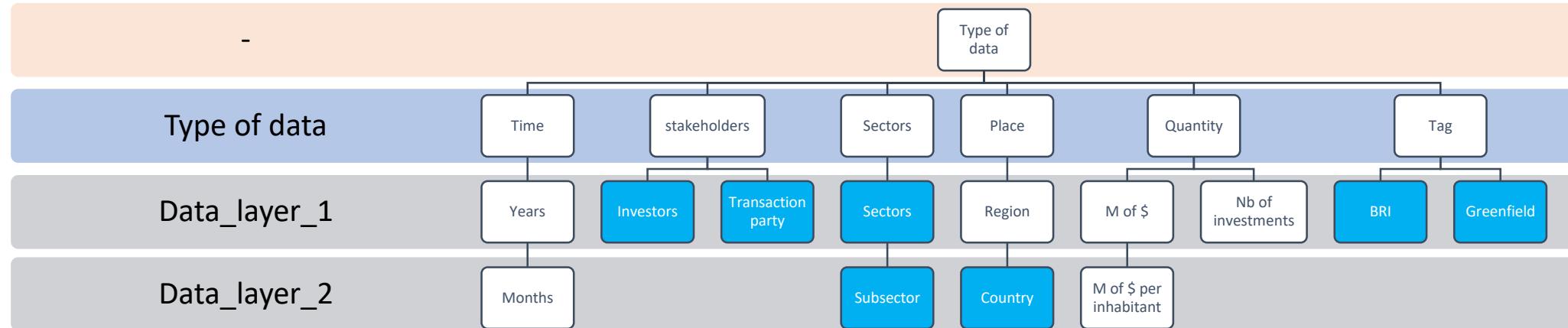
Filtres



filters identified :

1. **Year** : To determine the relevance of looking at a more recent period than since 2005.
2. **Sectors** : filter which gathers the sectors of “urban construction” to be established / confirmed. Sub-sector filters amount to applying unique filters to sectors
3. **Country** : establish / confirm
4. **Investissors / transaction party** : Those filters have to be established after some investigation and may not be easy to make as there are no subdivision between them.

Unique filters



Uniques filters identified :

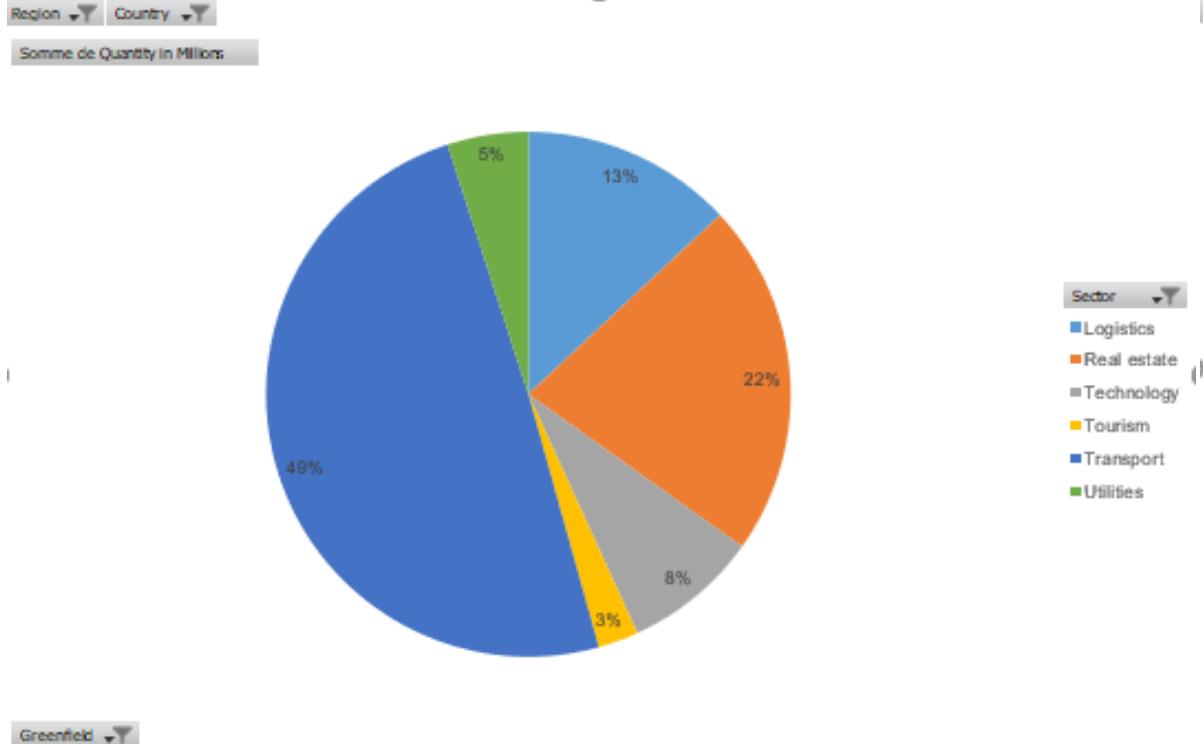
1. **Investors and Transaction party** : Allows to recalculate the indicators for an investor identified as important / particular. Gives a lot of detail on how it invests.
2. **Sectors et subsectors** : get more detail on an investment sector, who is involved and where. Identified thanks to a sector variable then studied in detail to understand it
3. **Country** : Same idea, makes it possible to isolate a country which we have identified as having a special role.
4. **BRI and greenfield** : fused or not, we can look at their behavior in particular compared to the average

Cross-referencing of dataset

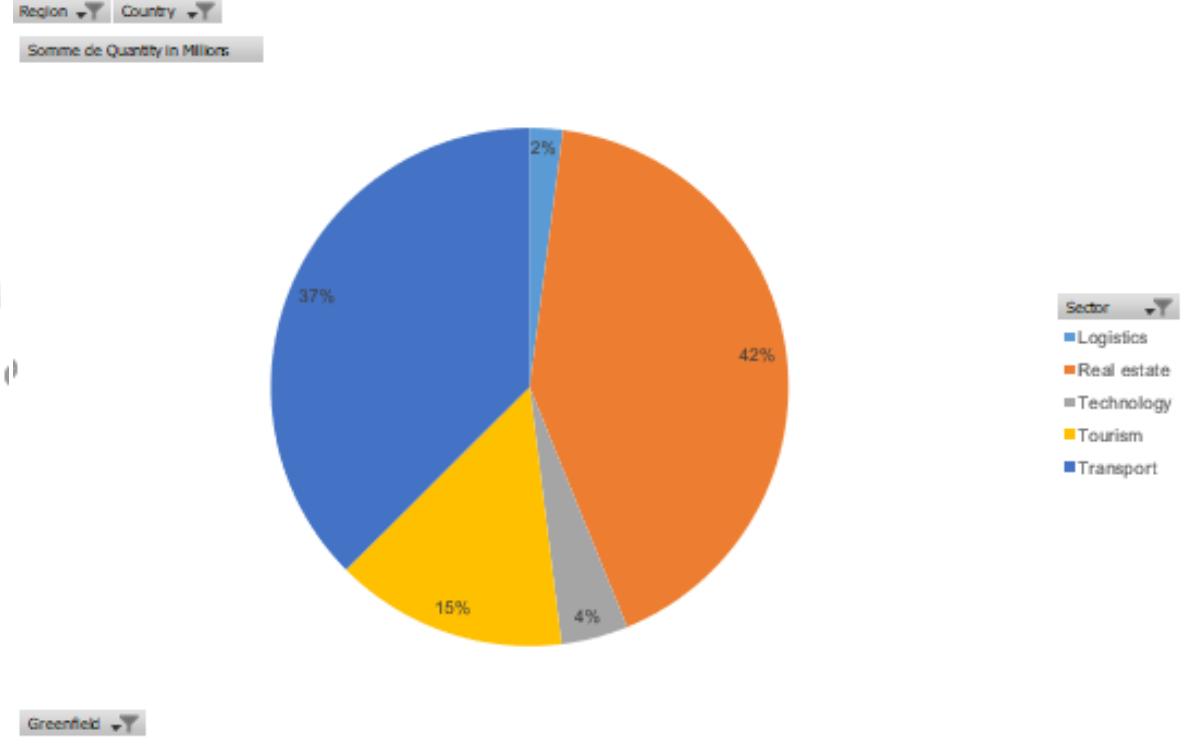
- Data from all datasets are not overlapping. It is important to add dataset 2 to dataset 1 to make sure we consider construction in investment to have a more representation of reality
- « grey » transaction
- We added database 3 as they do not overlap and are important to consider less visible positionning. (more info later)

Greenfield amount by urban area (East Asia)

Non Greenfield

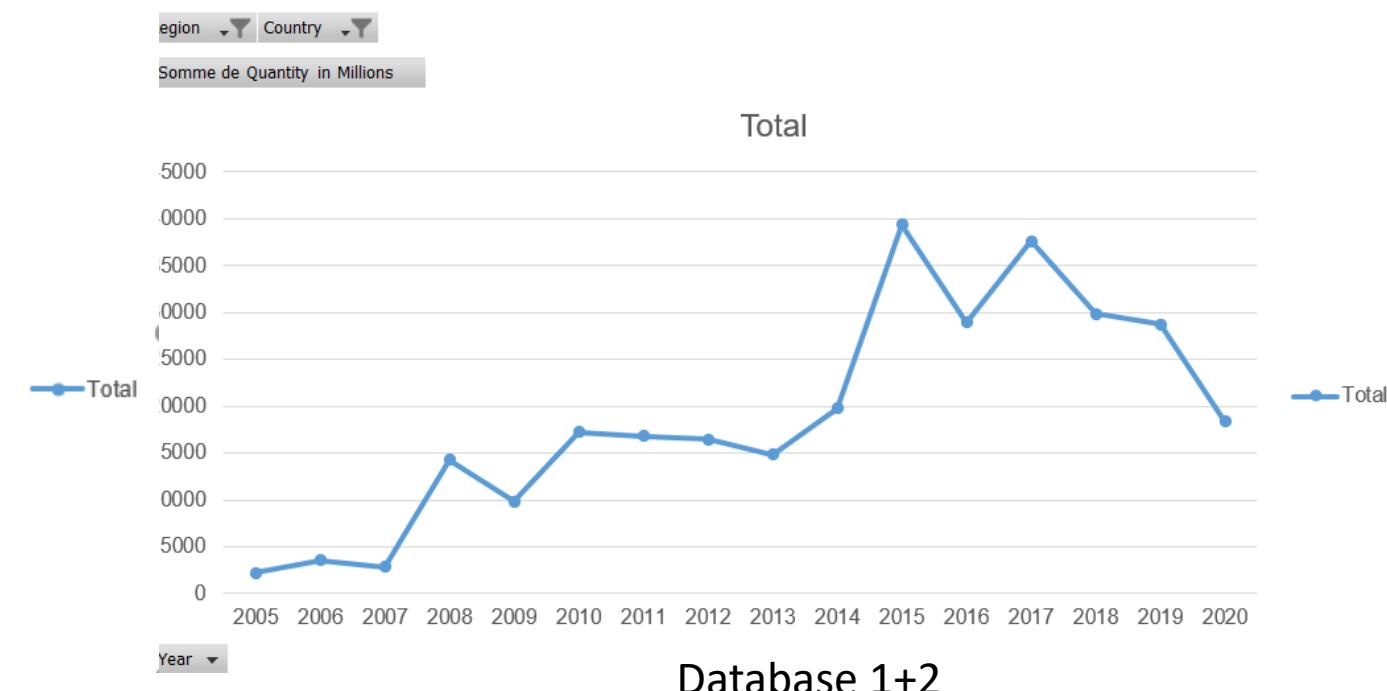
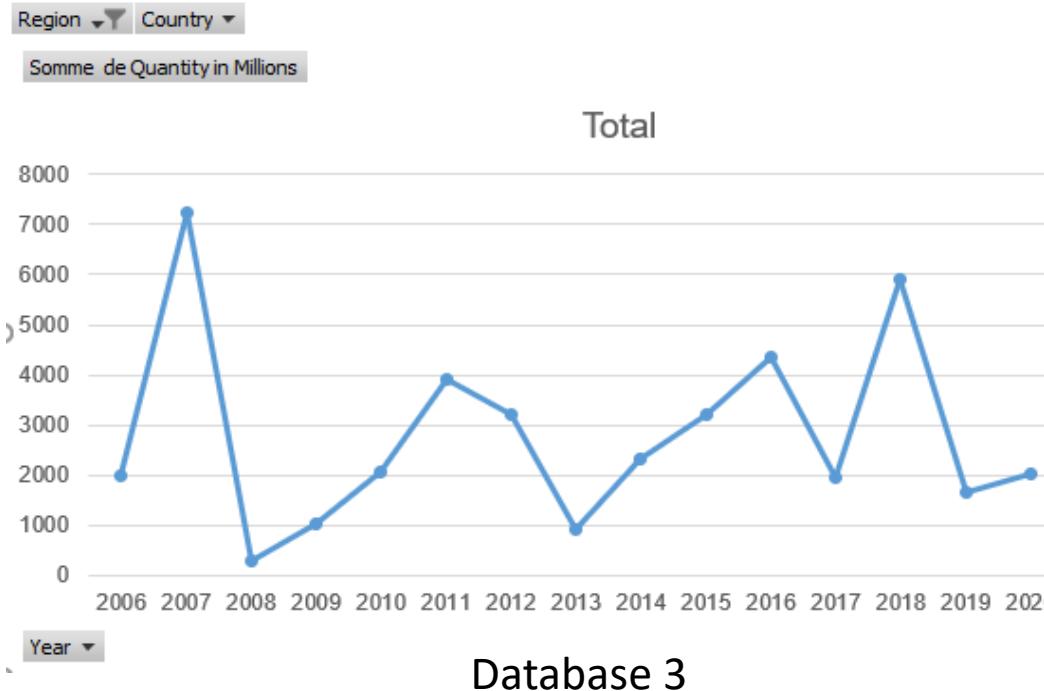


Greenfield



- 20% difference in real estate (main greenfield investments) + significant share in tourism
- Warning !!! Number of transactions => random can be important (4 investments in tourism for 33 in real estate)

Behaviour Database 3

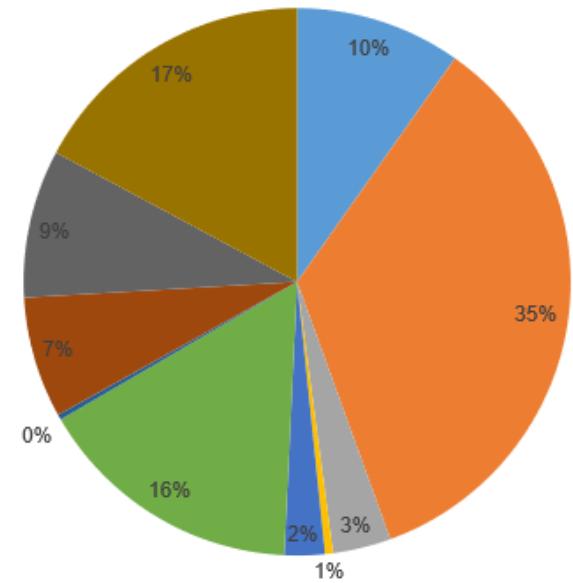


- Low amount compared to database 1 and 2 => do not hardly influence results (recently 1/10 ratio)

Region ▾ Country ▾

Somme de Quantity in Millions

Data 3



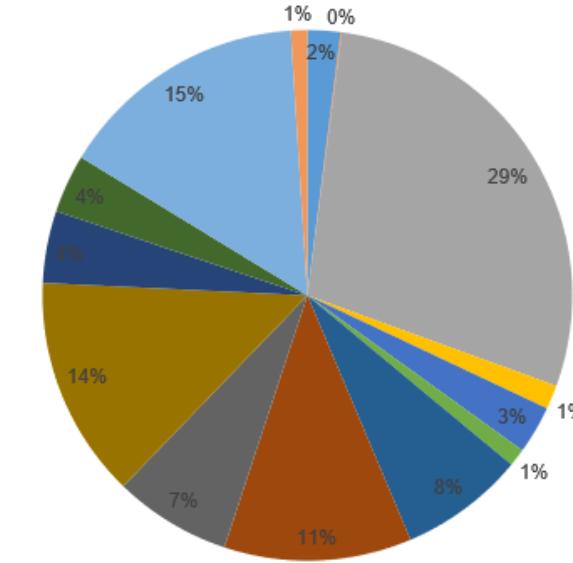
Sector

- Agriculture
- Energy
- Finance
- Health
- Logistics
- Metals
- Other
- Real estate
- Technology
- Transport

Region ▾ Country ▾

Somme de Quantity in Millions

Data 1



Sector

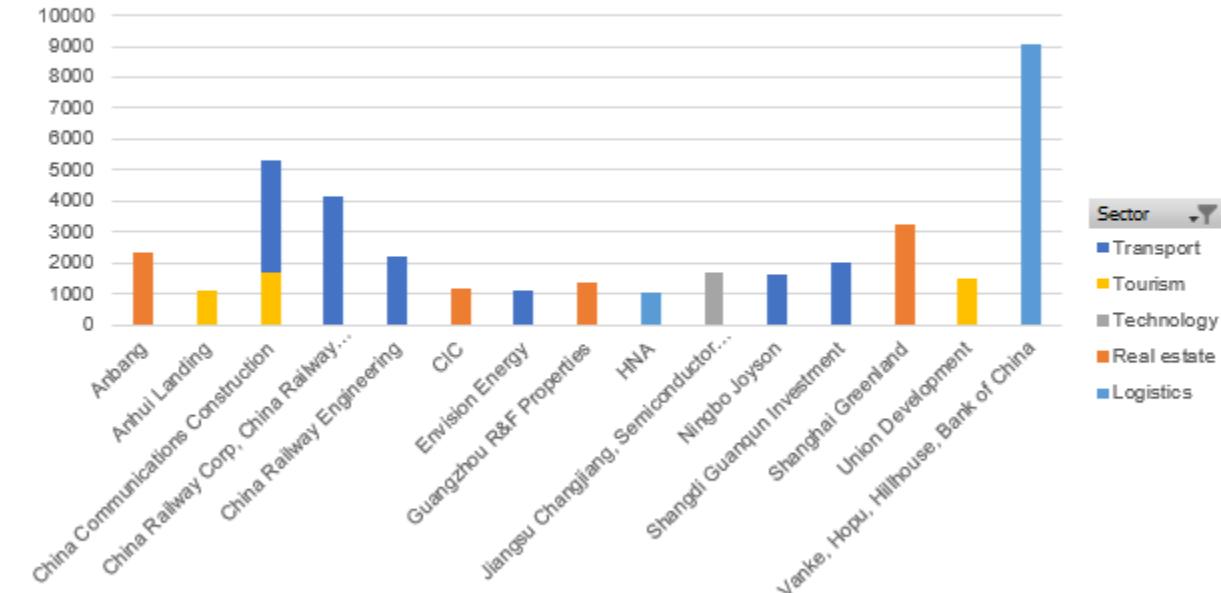
- Agriculture
- Chemicals
- Energy
- Entertainment
- Finance
- Health
- Logistics
- Metals
- Other
- Real estate
- Technology
- Tourism
- Transport
- Utilities

- Profile by sector quite similar => we can integrate it but not much to say about it at first sight

Region ▾ Coun... ▾

Somme de Quantity in Millions

Data 1 > 1000 M \$

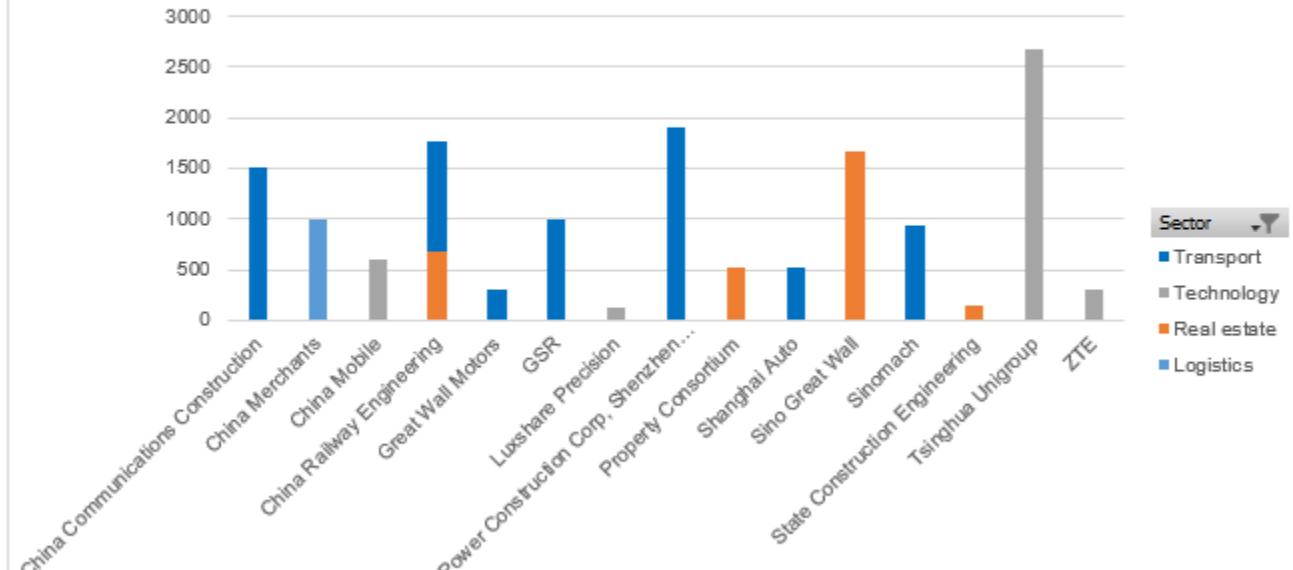


Inves... ▾

Region ▾ Coun... ▾

Somme de Quantity in...

Data 3 > 1000 M \$

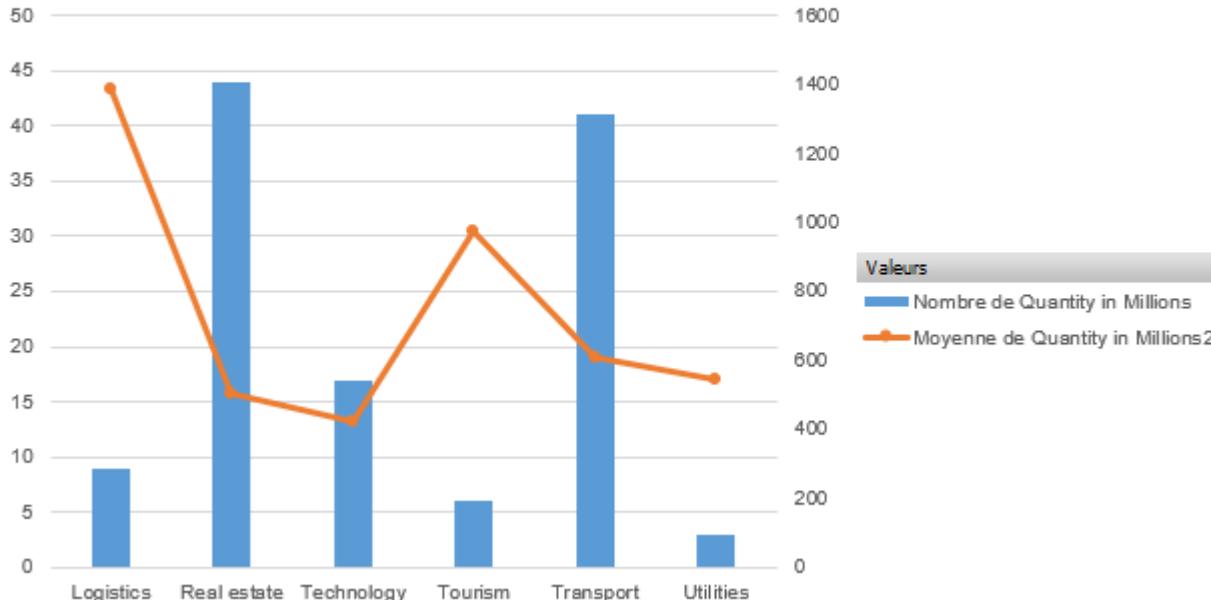


Chinese... ▾

Context : main investors in urban sector (in amount of money invested).

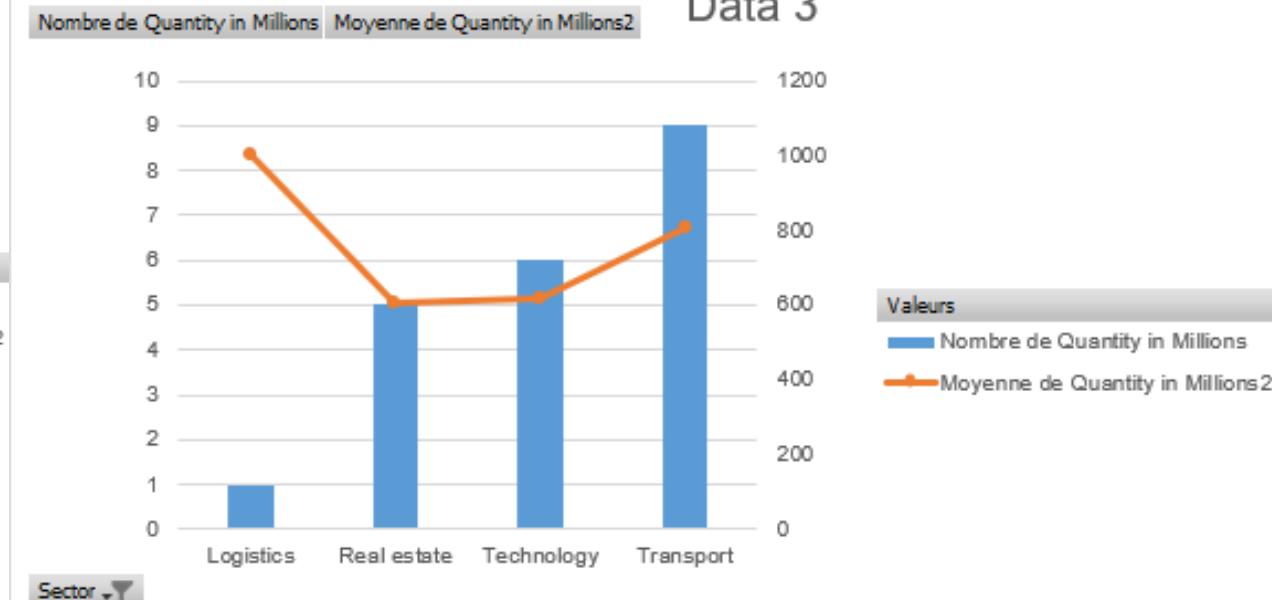
- We can still see the same sector trends in the database 3. For transport, which is the main sector, there are players in both databases:
 - china communication construction ;
 - China railway ingeneering
- We find rather official names: China mobile, china merchants, state construction ingeneering ...
- CCL : We can see what is happening on the database 3 side for small investors but we can easily fuse the data to calculate the global indicators

Data 1



Sector ▾

Data 3



Sector ▾

Context : Size of investments by (urban) sector for data 1 and 3

In both cases: few but important investments in logistics.

- China railway engineering
- Quite similar trends on the averages. average values often at + or - 20% maximum between the datasets.

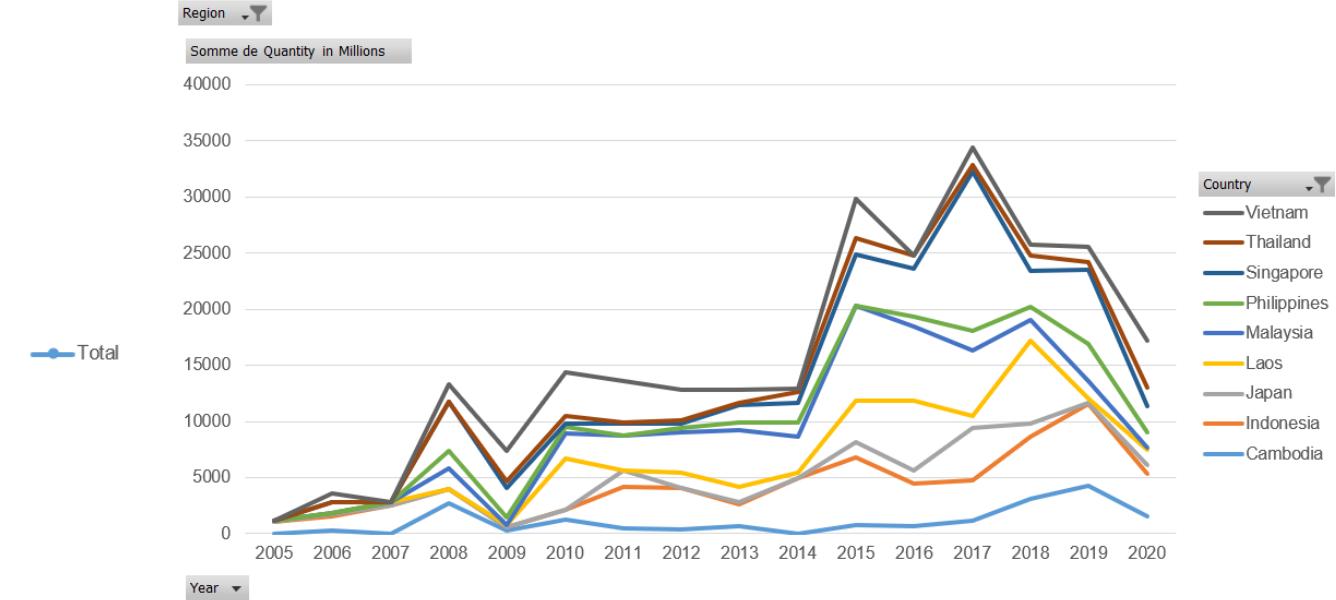
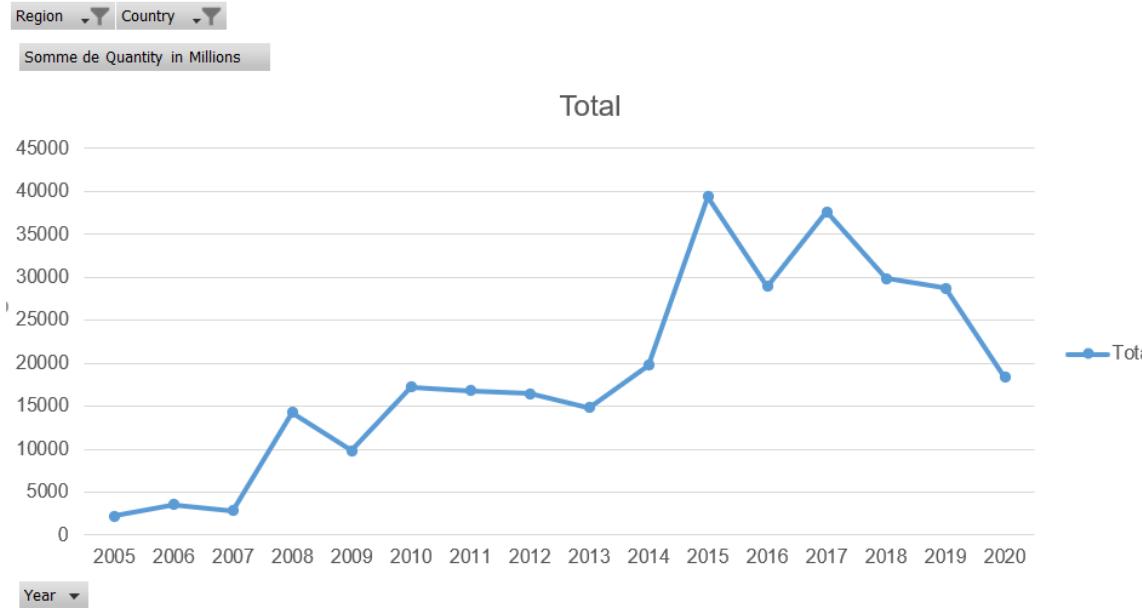
CCL: Considering the relatively small number of data in database 3 and the absence of a clear difference in trend, we can include them in the global database.

Method of fusion

- We can easily concatenate the databases because we find the same criteria.
- There is no data overlap.
- Add a database column to and indicate 1, 2 or 3 to always be able to filter if necessary after the fusion
- Add new columns to add data manually (number of inhabitants etc.)

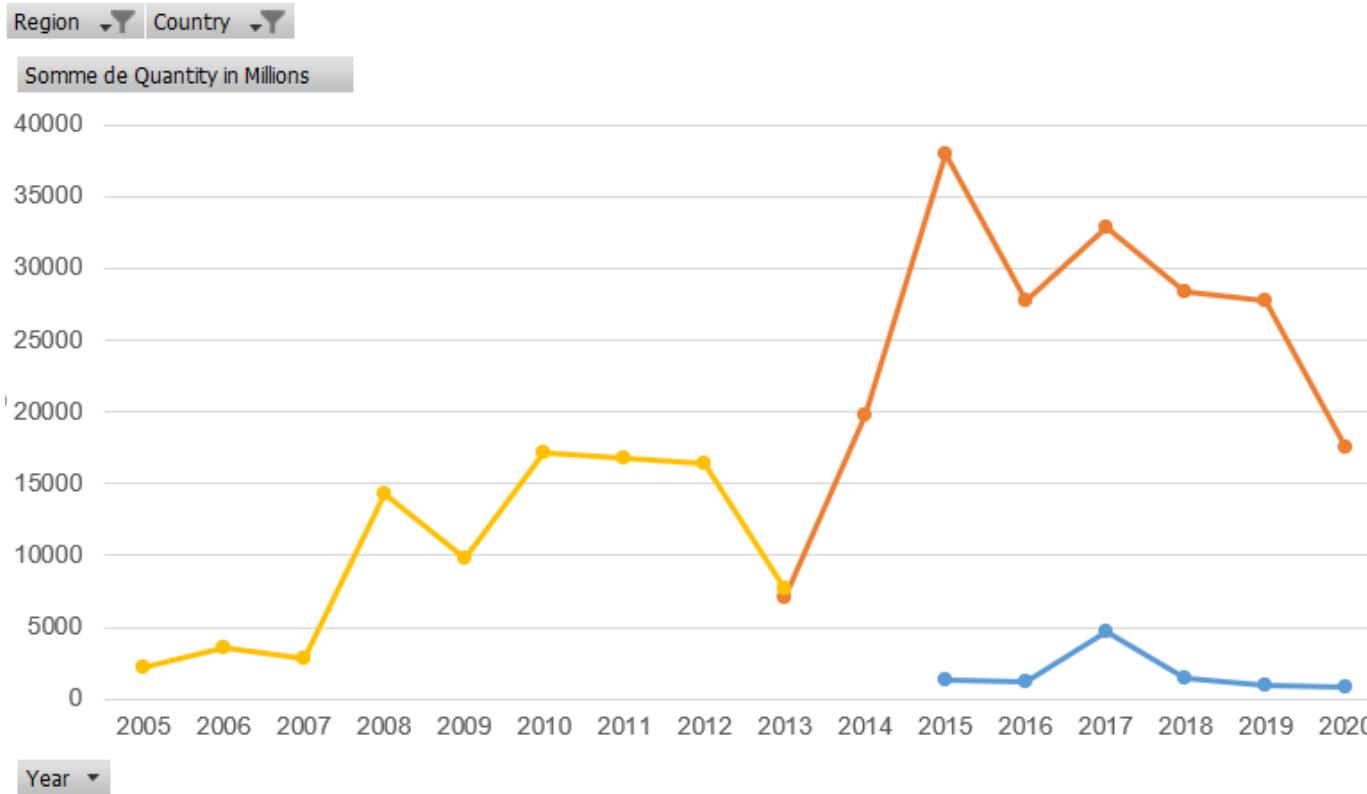
Behaviour BRI and Greenfield

Annual change overview (East Asia)

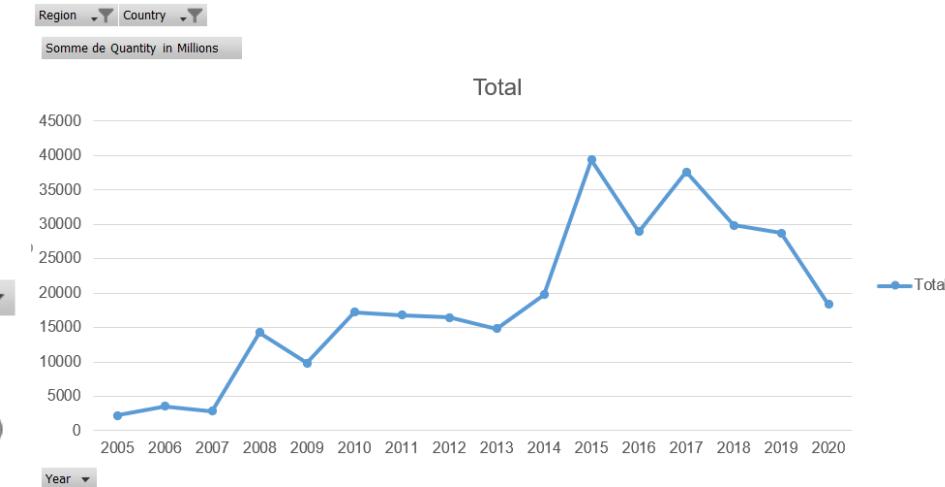


- First peak 2008 : => reaction to subprimes?
Led by **SINGAPORE** ; **VIETNAM** ; Philippines; **MALAYSIA**; **CAMBODIA**; **INDONESIA**
- Stagnation until 2014 / 2015
Led by **INDONESIA**; **LAOS**; **MALAYSIA**; **VIETNAM** (number of countries decreases but amounts increase)
- 2nd peak in 2015 until 2019
Led by **INDONESIA** ; **LAOS** ; **SINGAPORE**; **MALAYSIA**; **VIETNAM**; **Japan**
- What about 2009 ?
- What about 2020 ? => Probably covid COVID => we will take a deeper look after setting the scope

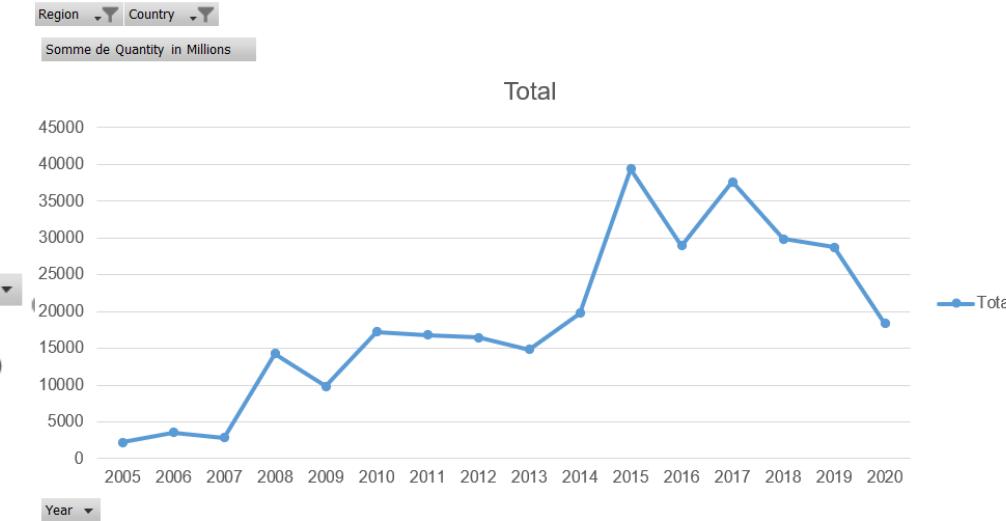
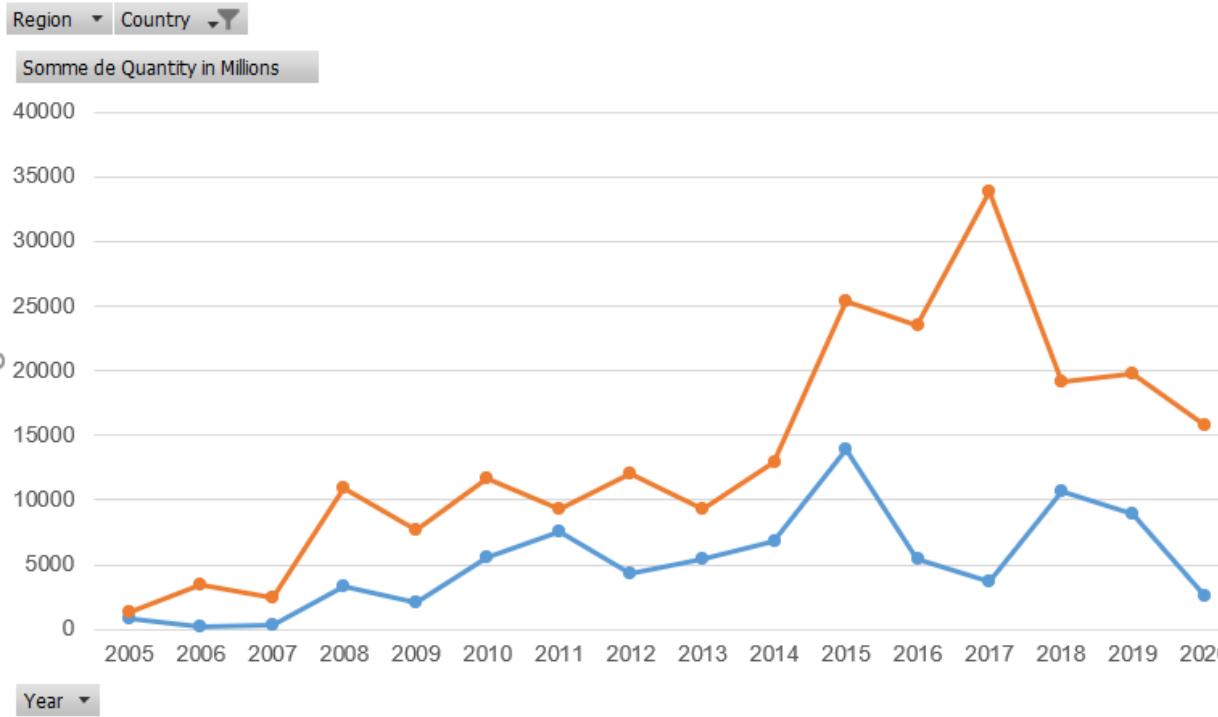
Overview of annual development BRI (East Asia)



- Continuity between empty and BRI show BRI term did not exist but projects were BRI
 - Few non BRI
- => Useless indicator (in EA) as all investments are basically BRI

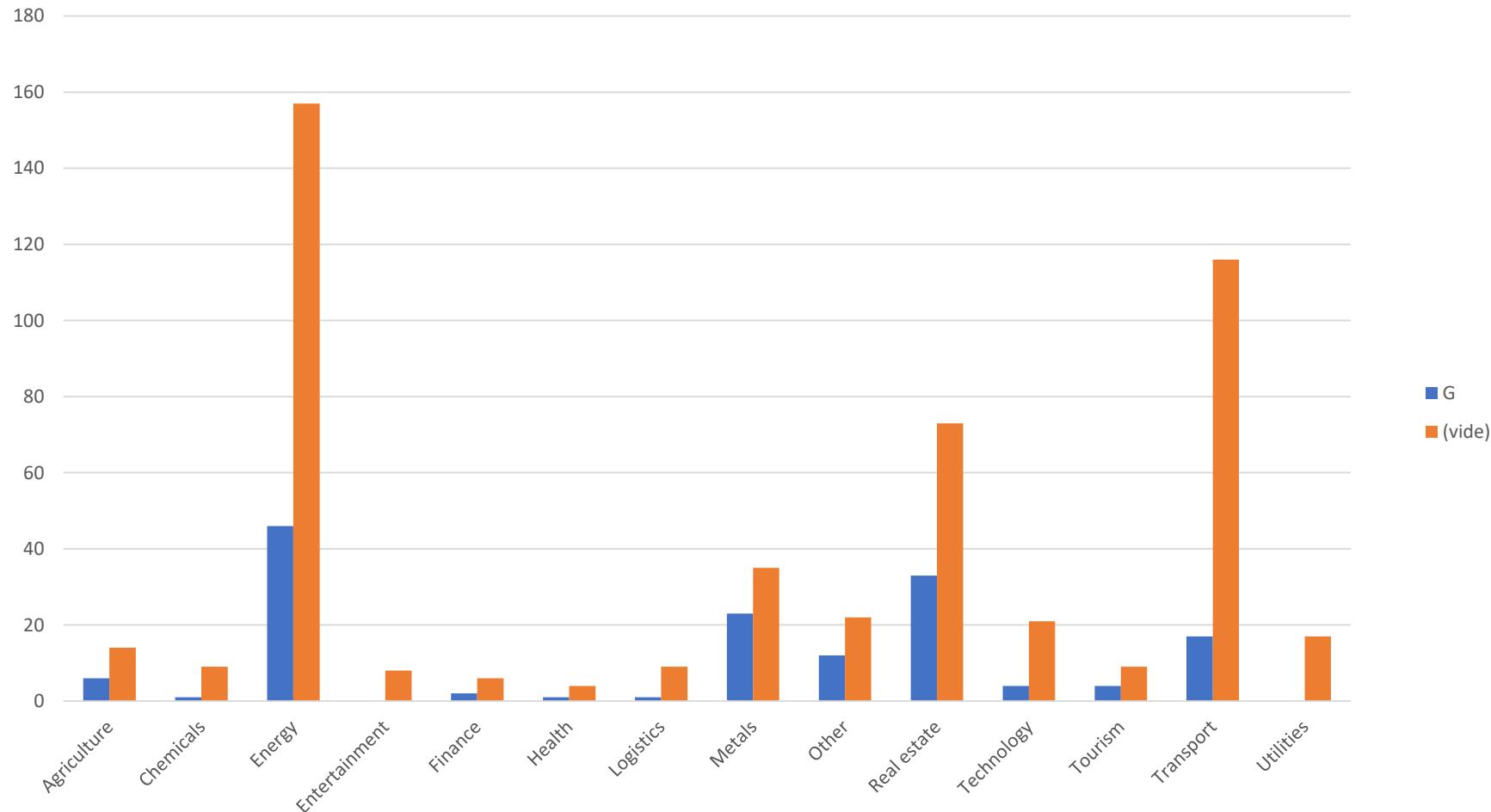


Annual change overview Greenfield (East Asia)



- Behavior very similar to non-BRI **EXCEPT** for 2017
- Amount high enough to be looked at.

Greenfield amounts by sector (East Asia)



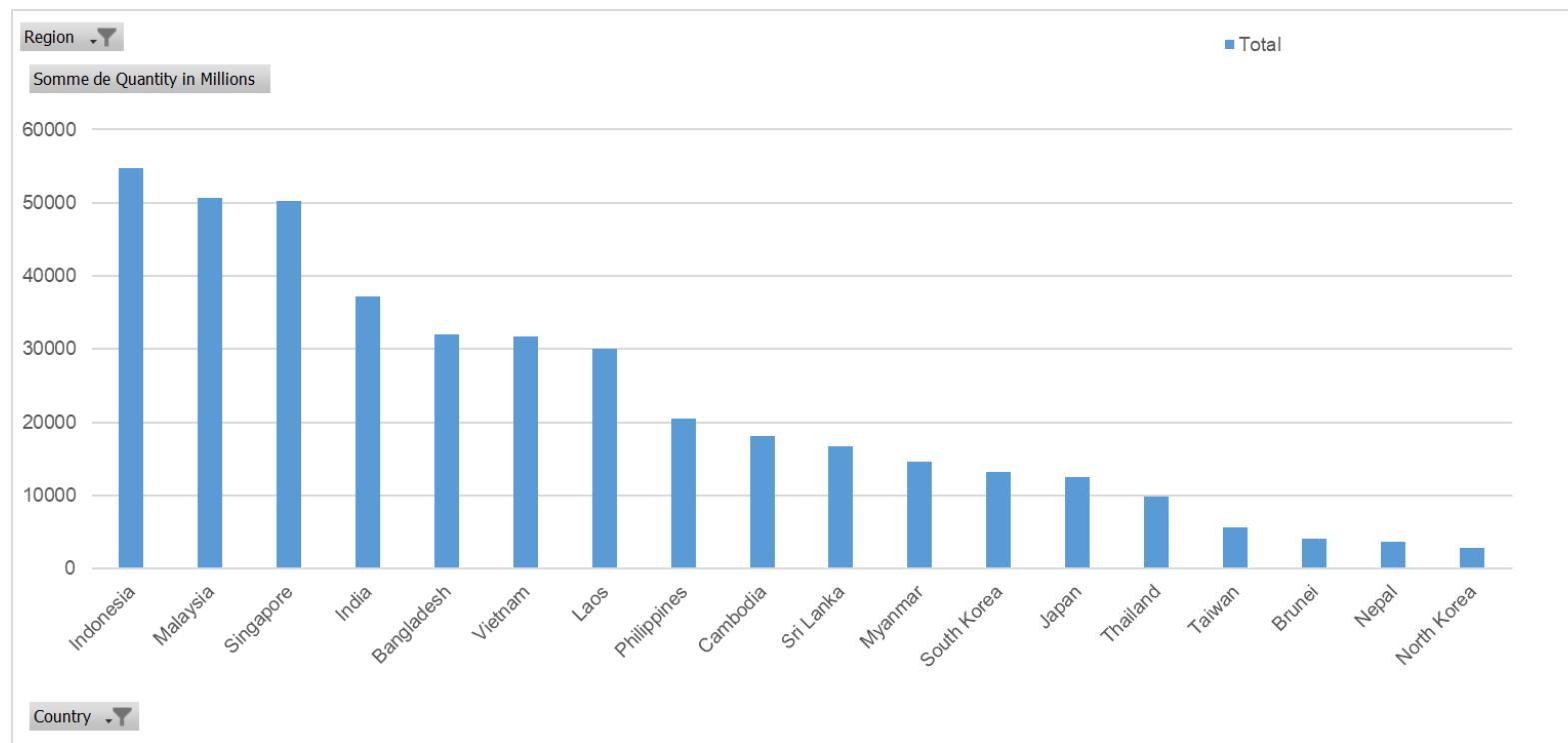
- More homogeneous distribution (strong greenfield sectors remain strong non-greenfield sectors)

Determinate filters

Localisation

- For the sake of data readability, it is better to restrict our analysis to ten countries.
- Some of its countries are based on qualitative criteria
- Here we will try to identify the interesting countries by the amount of investments as well as their location and their sector of activity

M \$ per country (SEA)



Context : Investment per country (SEA) data 1+2+3 (all data)

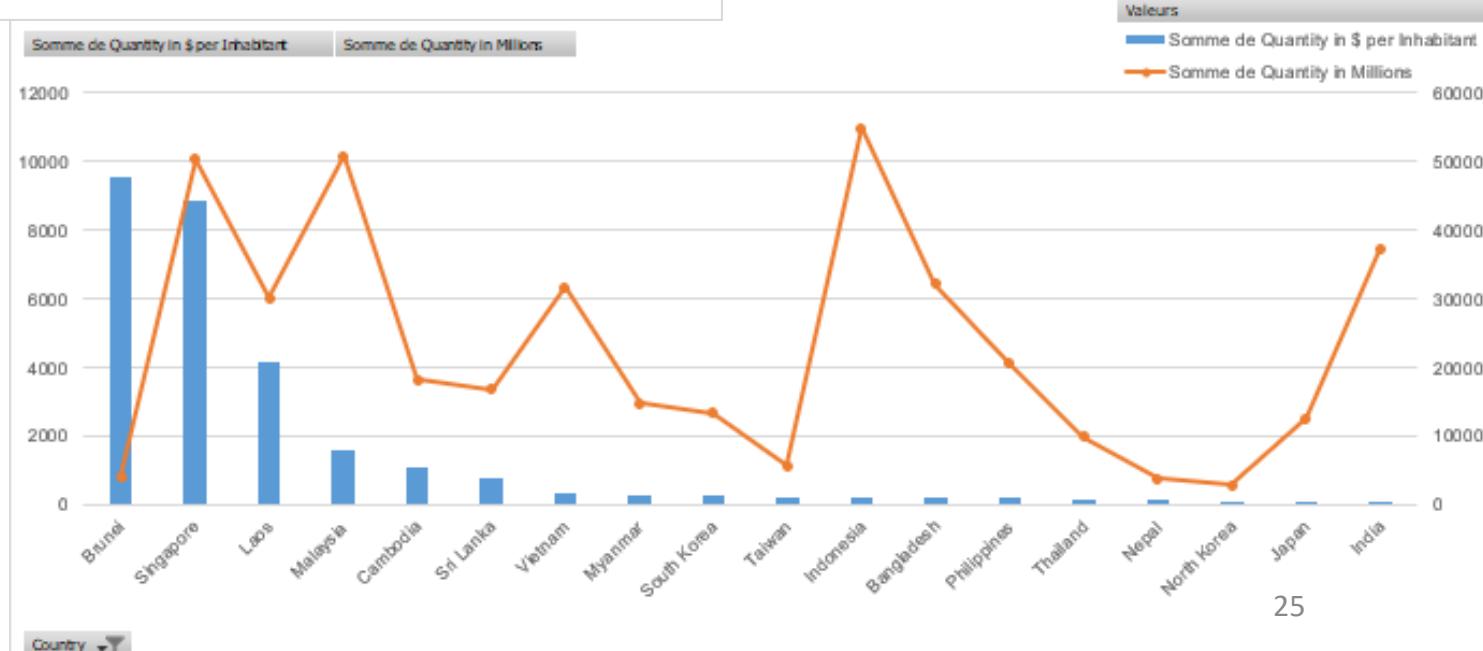
Very few investments in **TAIWAN, Brunei, Nepal, North Korea**

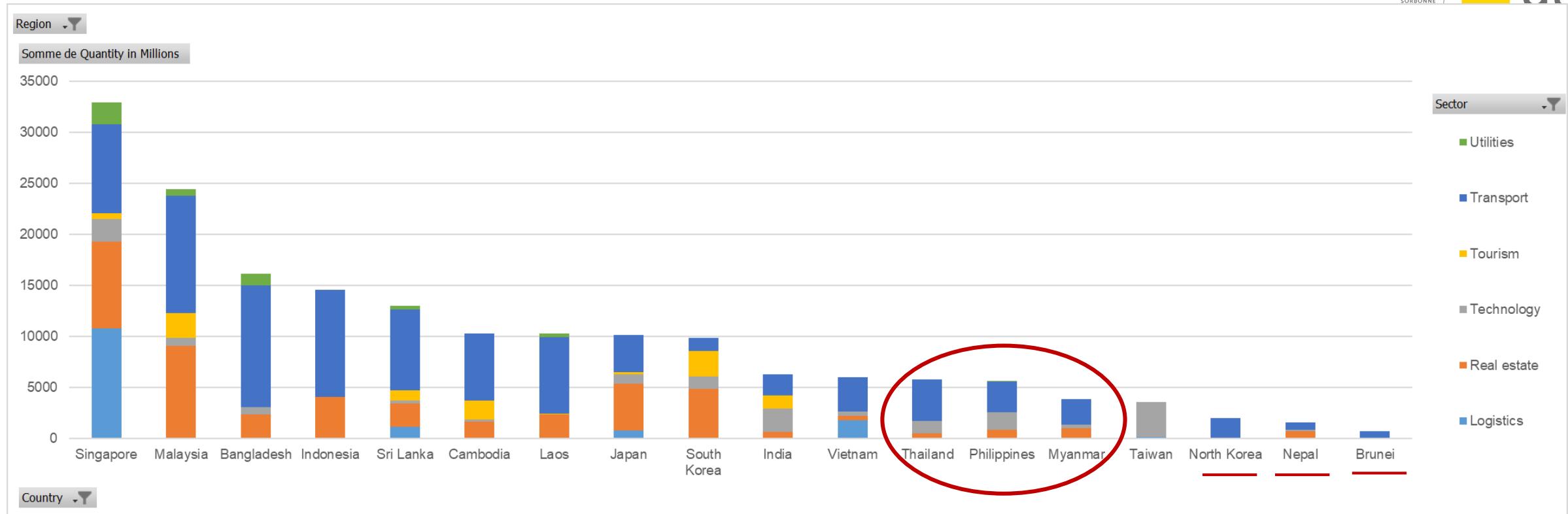
But if we relate to the population only **North Korea** and **Nepal** are still small.

We see massive investment in **SINGAPORE** for both criteria. **LAOS** and **MALAYSIA** are strong investment places too.

When we look at investment per population **INDIA** fall behind, **BANGLADESH** and **Philippines** too. Its is not surprising as they are **very populated** countries, which means low investment doesn't translate a lack of interest.

Million \$ per inhabitant AND Million \$ per country (SEA)





Context : Investment per country (SEA) and urban sector (all data)

Investments in Myanmar, Nepal, Brunei and North Korea seems still low. Investment are pretty normal too (mainly transport and real estate)

Do we delete Myanmar? No, still > 2% of urban investment and still 8th in investment/inhabitant

Do we keep Taiwan? Yes => country with the most important investment in technology

Do we delete North Korea, Nepal and Brunei? Yes, less than 2% and nothing special about the sectors they cover

Not Brunei as it is massive in terms of investment/inhabitant

Sectors

In order to see what kind of sector define « urban » investments, we will analyse what kind of company work on specific sectors.

- The sectors we suspect they can participate to Urban development :
 - Logistics
 - Tourism
 - Technology
 - Energy
 - Utilities
 - Transport
 - Real estate

Sectors

Why is it interesting to look at all these criteria for urban development?

- Energy and utility :

Energy is enhancer ; having some massive investment in energy infrastructure will directly or not allow important urban development. There you can find more investors participating to urban development that doesn't appear in Real estate.

Utility is directly related to urban development as it concerns electricity, water provision etc. which is directly impacting usage (of buildings).

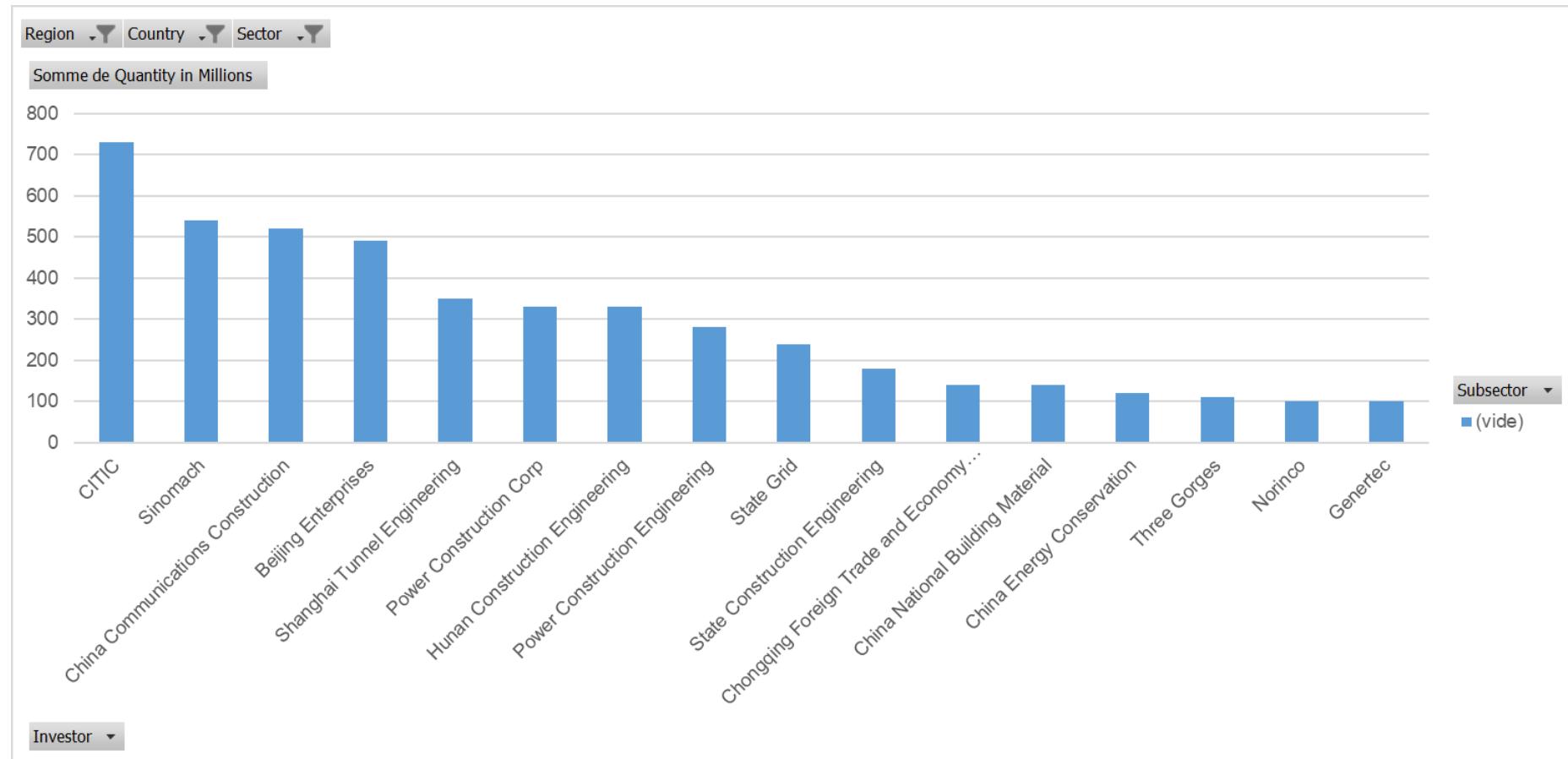
- Logistics, Transport and Technology :

Technology is mainly telecoms. Those 3 criteria concern transport (of goods, people and services). They connect cities or at least help provide services and goods in cities which are essential for some development.

- Tourism :

Tourism investments increase attractiveness and allow the urban development of certain areas. And a focus tourism investment strategy can be seen as a way to motivate investments in targeted areas (by making them good for rich investors to spend some time).

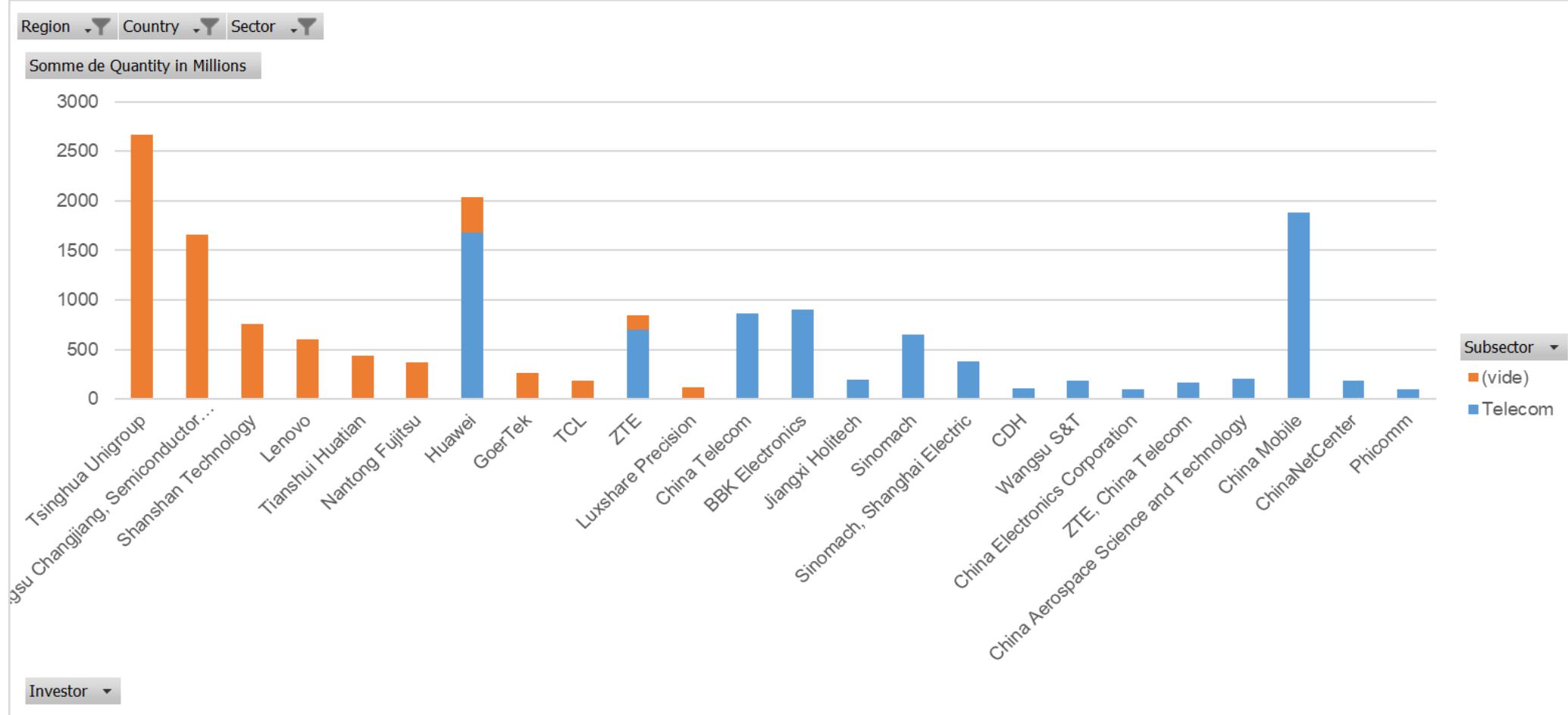
1/ utilities



Looks like utilities define water, electricity, gaz... provision which is obviously an « urban » investment
 Urban engineering

check

2/ Technologies



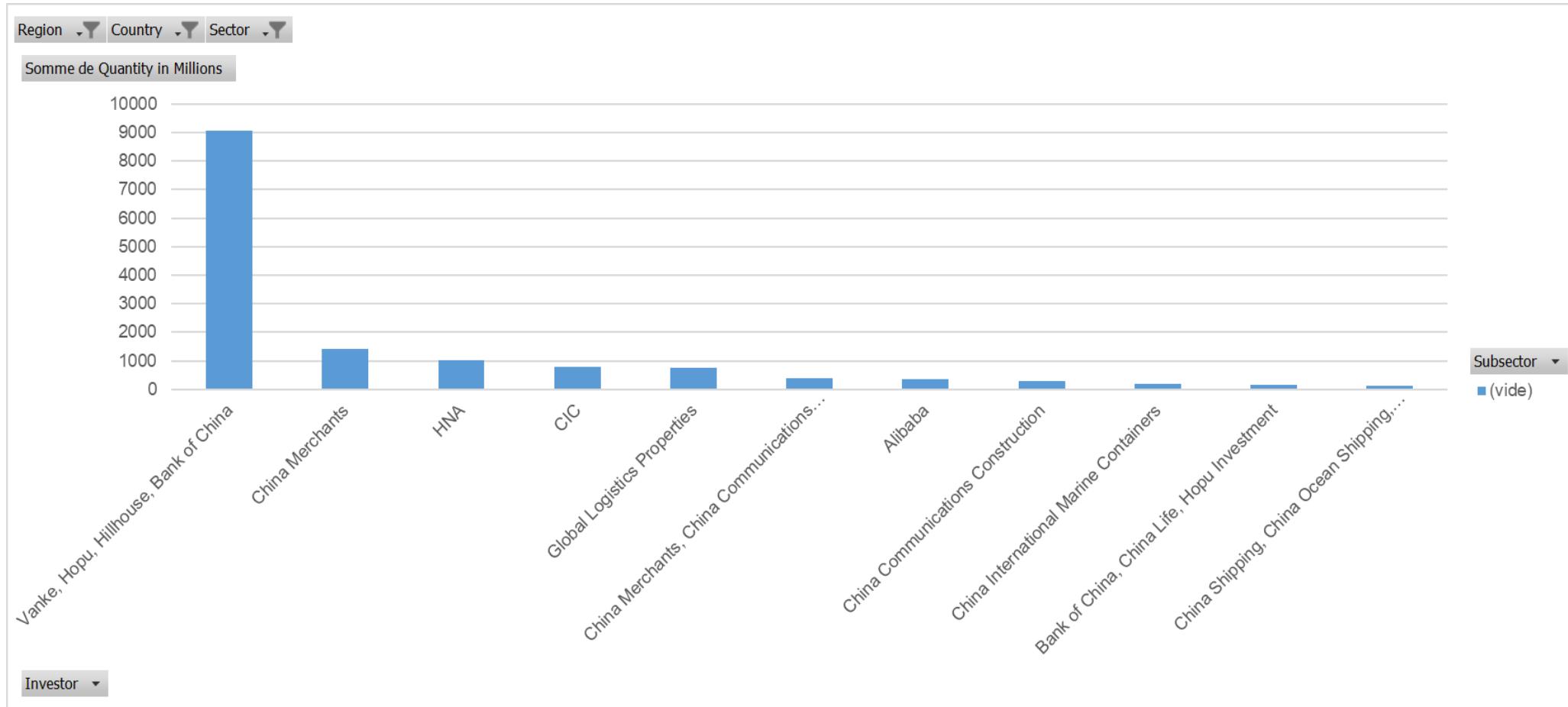
Telecom can easily be considered as an « urban » investment as it targets places where people live.

The « empty » subsector is full of companies building electronic components..

⇒ As the development of tech companies stimulate the growth of activity poles, we consider Technology as an important sector to be looked at.

check

3/ Logistics



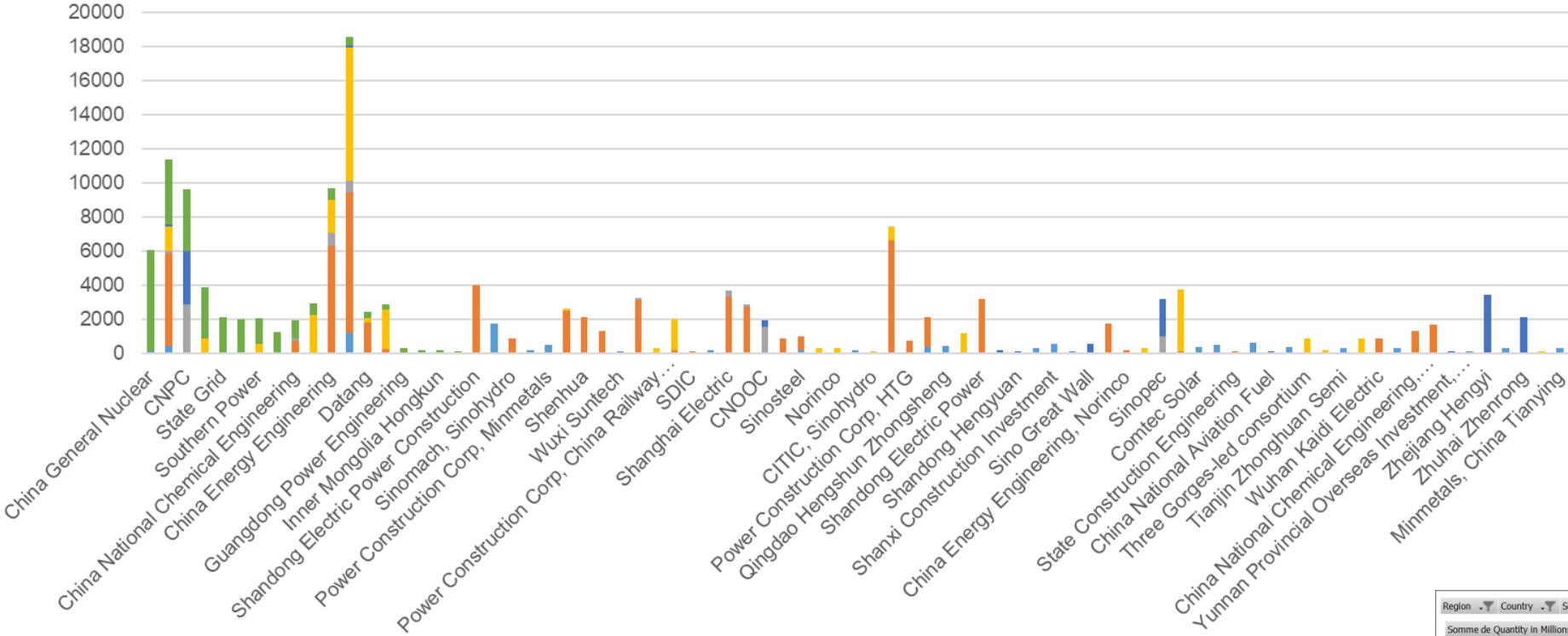
Logistics are related to transport of goods. It is close to transport sector and part of an urban dynamic.

Some companies doesn't give us much information as they are bank and generic investors.

The other companies seems to work around goods transportation and market places (**alibaba** ; **china international Marine Containers**, **GLP**). These kind of companies develop their activities where there are demand and customers, so translate the will to promote urban developpement.

check

Somme de Quantity in Millions

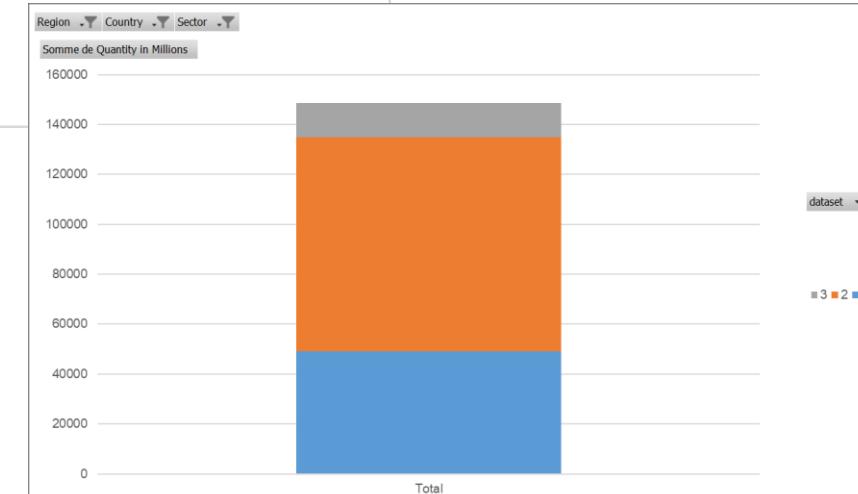


Investor ⏪

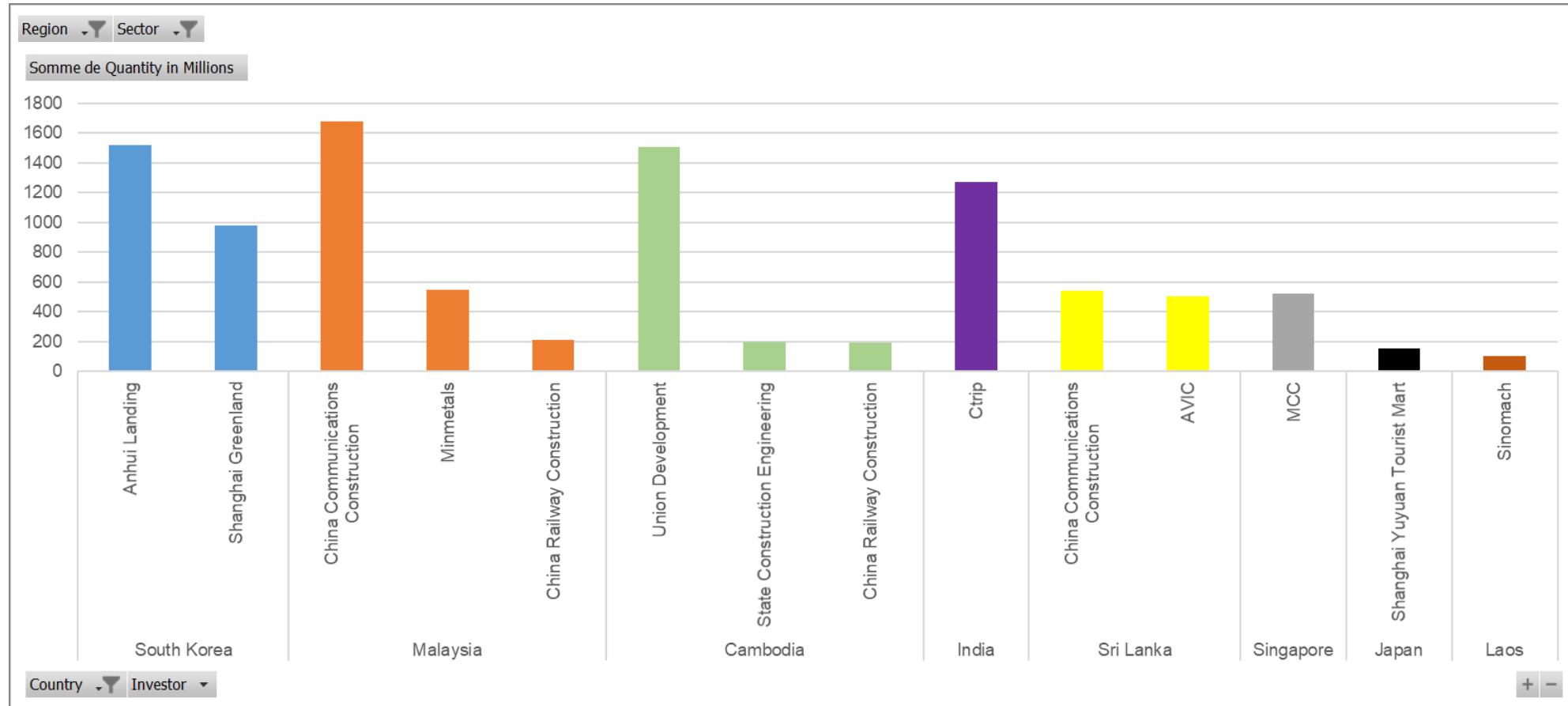
As we can see Energy investment seems to mainly concern power plants, as electricity provision is covered by utilities. Construction contract also represent an important part of the money invested.

Energy production can directly serve the development of urban areas (directly or not). The type of energy can also give some information about the pace of development (fast, long term...)

check



5/ Tourism



Some companies like Anhui Landing or Union development are known for building high quality hotels / towns for touristic purposes, which can make us think it can hide a will to motivate investment. But those companies invested in already known touristic destination in Asia (SOUTH KOREA and especially MALAYSIA).

It could also translate investment opportunities private companies didn't want to miss out. It seems to be the case of Ctrip (booking company) in INDIA which invested in its Indian counterpart after a fall in stocks.

No data for THAILAND / VIETNAM / TAIWAN / INDONESIA / Philippines /

Check (only because the amount can't really impact the global informations and it can be interesting to see more detail about it).

Conclusion Filters

- Countries : SEA

MALAYSIA, SINGAPORE, BANGLADESH, INDONESIA, SRI LANKA, CAMBODIA, LAOS, Japan, SOUTH KOREA, INDIA, VIETNAM, THAILAND, Philippines, Myanmar, TAIWAN, Brunei

- Sectors : Urban

Energy + Tourism + Real estate + Utilities + Transport + Logistics

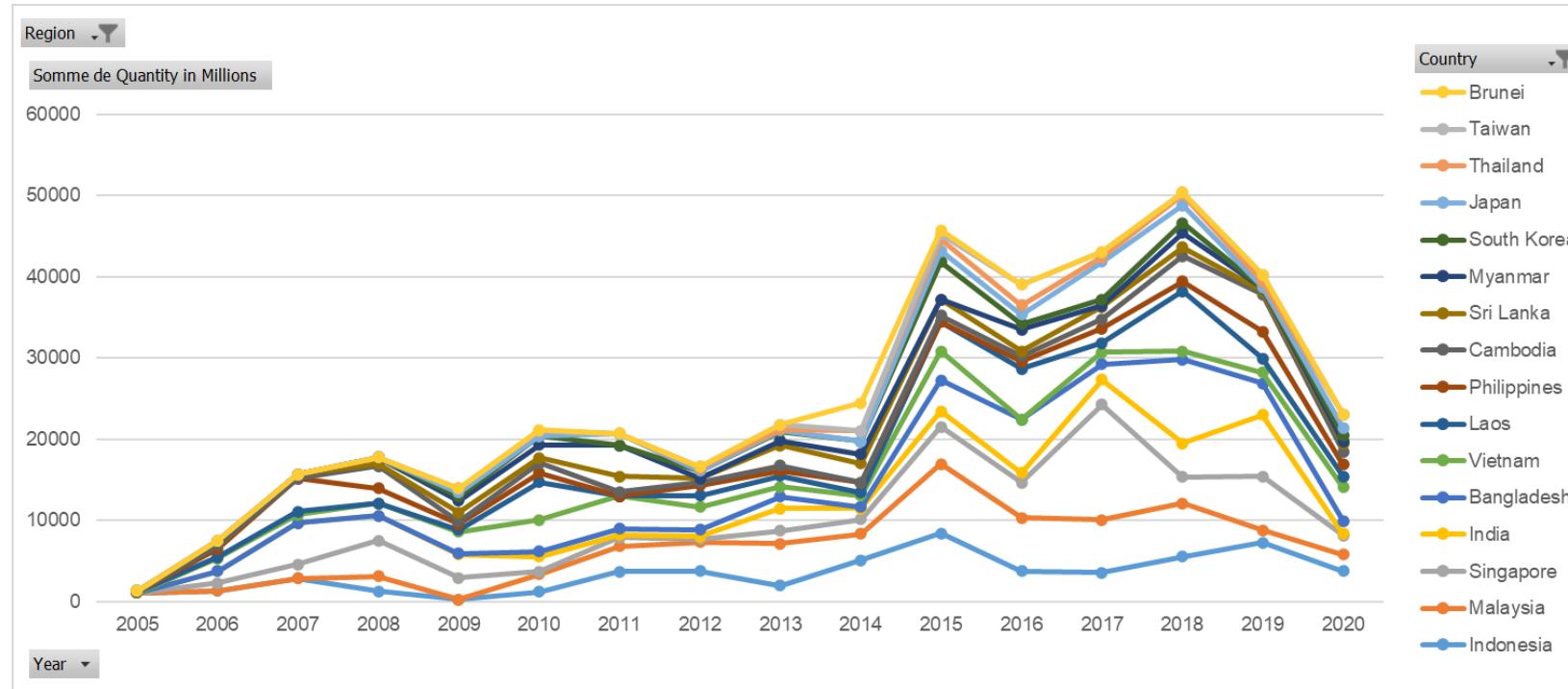
- Years : 2015 – 2019

to have the best view of the current situation while excluding covid-19 effects

Part 2: Evolution in time

Range : SEA and Urban sectors (Investments and Construction)

Evolution per year



- The curve on the top represent the total amount of investment
- The gap created between one curve and the one before shows the amount of investment in one country.
- This representation allow to show the spectrum of the total amount and is easier to read as curves don't cross each other (you can see more individual variation by not using this representation but it can be hard to read with more than 5 countries)

Investments have seen their value multiplied by more than 5 in 12 years.

It seems subprimes could have **frozen investment** growth in SEA from 2008 to 2013

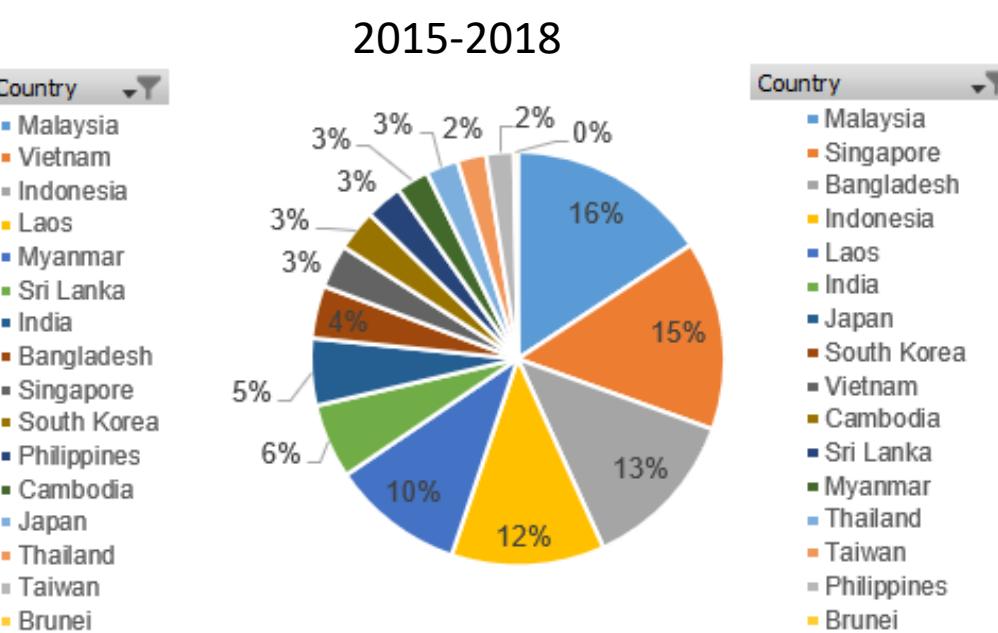
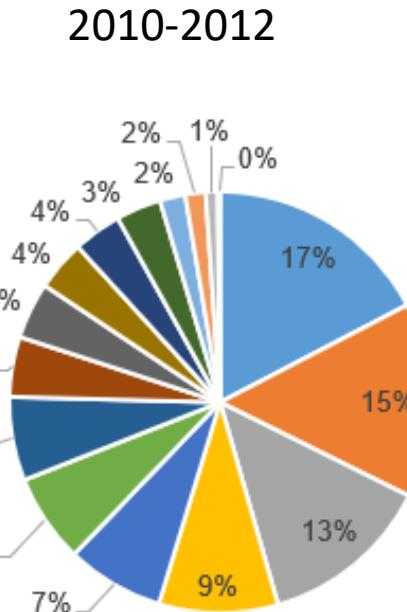
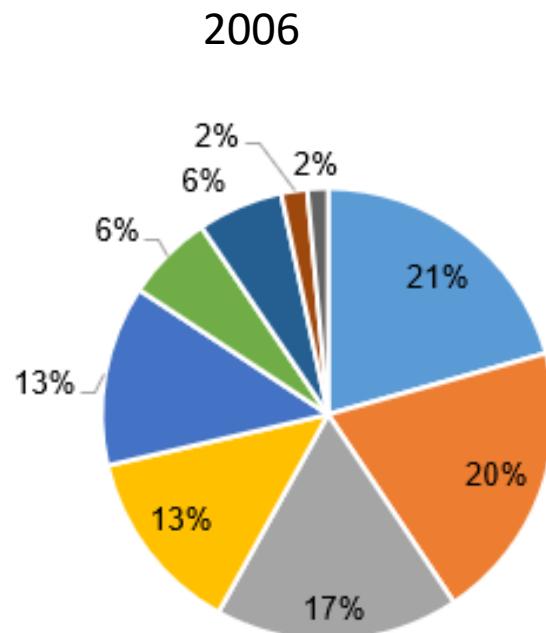
Then investments have raised up to reach 2 peak (in 2015 and 2018)

2020 is really low but we can easily imply covid-19.

We will take a closer look at 3 period of time :

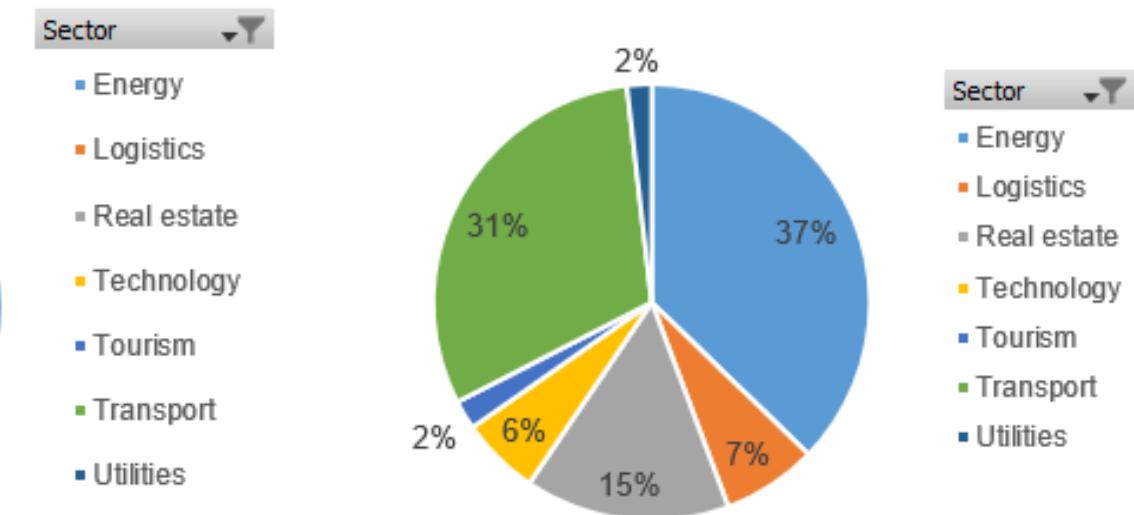
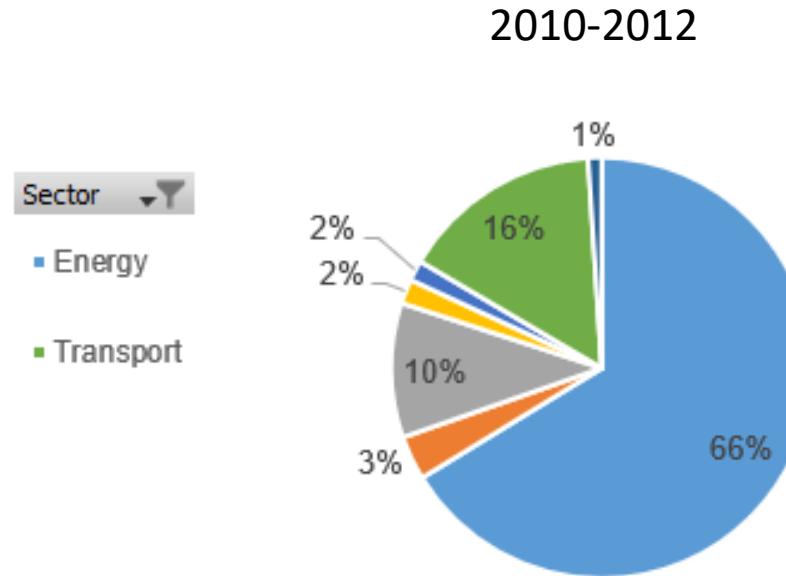
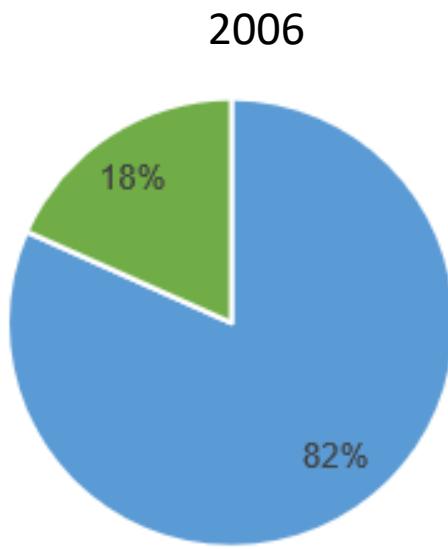
- 2006 (before subprimes, start of the growth) ;
- 2010-2011 (Stagnation) ;
- 2015-2018 (peak).

Evolution of investments in 2006 ; 2010-2012 ; 2015-2018 per country



- 2006 -> 2010-2011 :
 - **Fall** : INDIA 20% to 7% ; VIETNAM 21% to 15% ; Philippines 13% to 7% ; INDONESIA ; SINGAPORE 13% to 4% (can be mostly explained by a strategy of diversification). Singapore lost more than the others.
 - **Still** : SRI LANKA ; Japan 6% to 7% => good result knowing there are investment in much more countries
 - **Growth** : LAOS 2% to 9% => real focus **NEW** : 8 in total (x2) ; MALAYSIA 17% ; Myanmar 7% ; BANGLADESH 5% ...
- 2010-2011 -> 2015-2018 :
 - **Fall** : VIETNAM (21 -> 15 -> 3%) ; Myanmar (fall after rise)
 - **Still** : MALAYSIA ; INDONESIA ; LAOS (reliable investment place) ; SOUTH KOREA
 - **Growth** : SINGAPORE 4% to 15% (better than 2006 => technologies?) ; Bangladesh ; Japan 2% to 5%

Evolution of investments in 2006 ; 2010-2012 ; 2015-2018 per sector



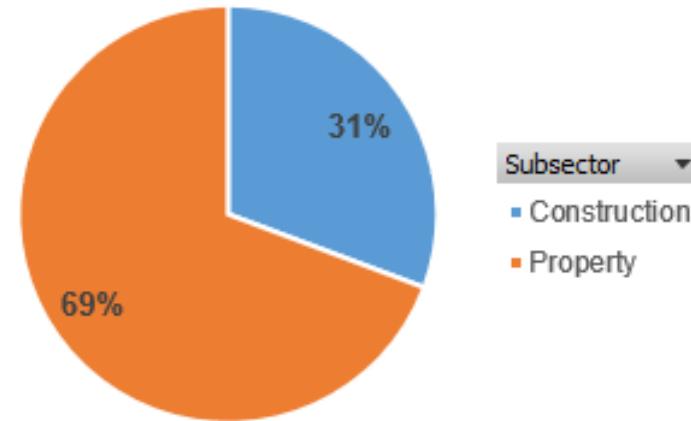
- 2006 -> 2010-2011 :
 - **Diversification** : Energy and transport see their part reduced due to the arrival of new types of investment
 - **! A lack of data back in 2006 can also explain why there are so few investment sectors**
- 2010-2011 -> 2015-2018 :
 - **Every « secondary » sector grow** during this period, which reduce the part of Energy + Transport (82 -> 68%)
 - **It doesn't mean there are less investment in Energy / transport** as the total amount invested grow significantly
 - **There is a huge increase in transport investment** during this period => a reason?

Evolution of investments in 2006 ; 2010-2012 ; 2015-2018 in REAL ESTATE

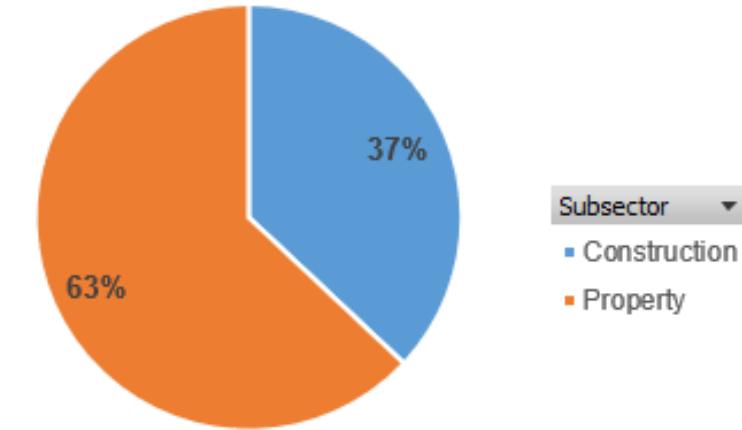
2006

No DATA
or
No investments

2010-2012



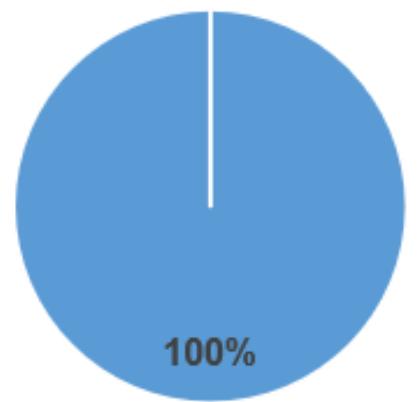
2015-2018



- 2010-2011 -> 2015-2018 :
 - While growing, **real estate investments behaviours stay the same** : 2/3 property ; 1/3 construction

Evolution of investments in 2006 ; 2010-2012 ; 2015-2018 in TRANSPORT

2006

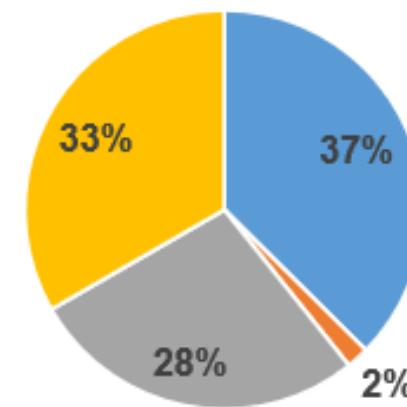


Subsector ▾

■ Aviation

100%

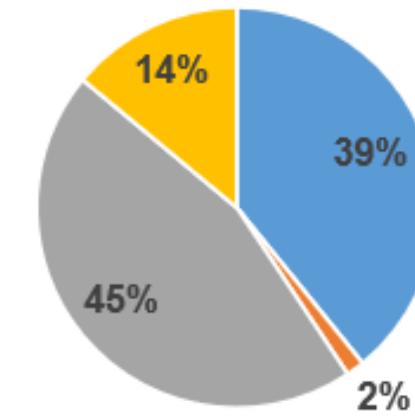
2010-2012



Subsector ▾

- Autos
- Aviation
- Rail
- Shipping

2015-2018



Subsector ▾

- Autos
- Aviation
- Rail
- Shipping

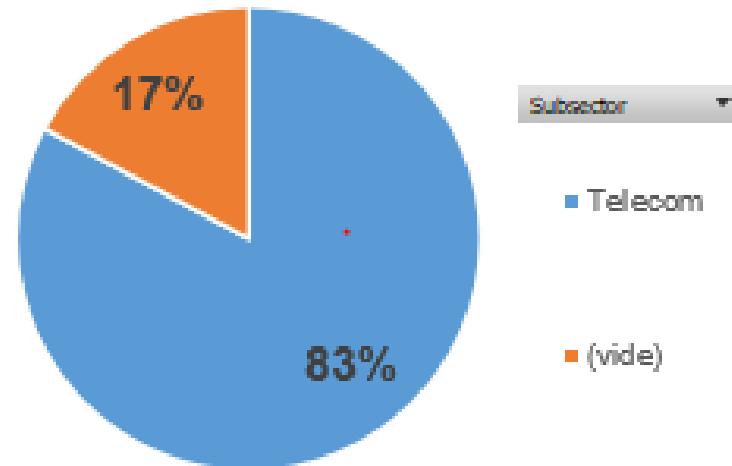
- 2006 -> 2010-2012 :
 - Probably not enough data
- 2006 -> 2015-2018 :
 - Huge growth of rail over shipping (all the rest is stable)

Evolution of investments in 2006 ; 2010-2012 ; 2015-2018 in TRANSPORT

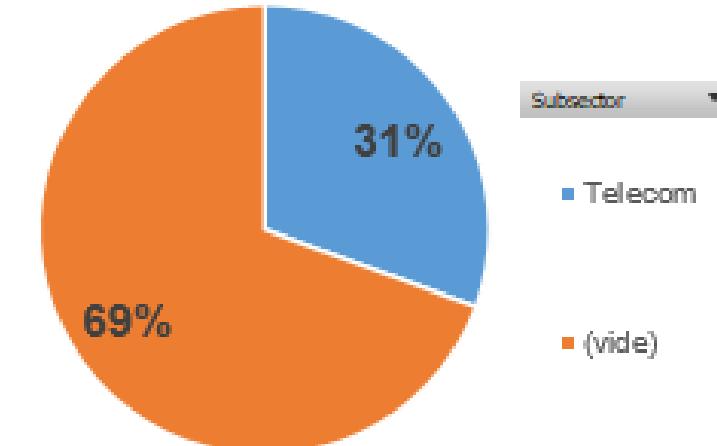
2006

No DATA
Or
No investments

2010-2012

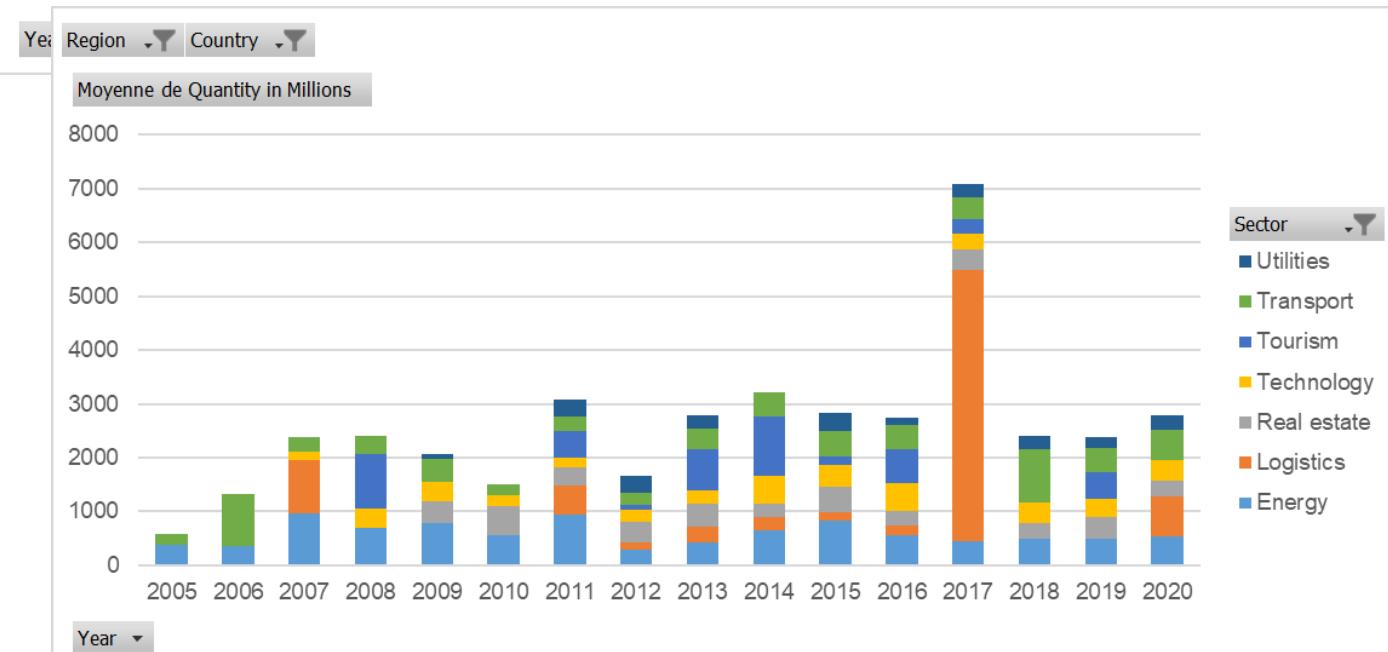
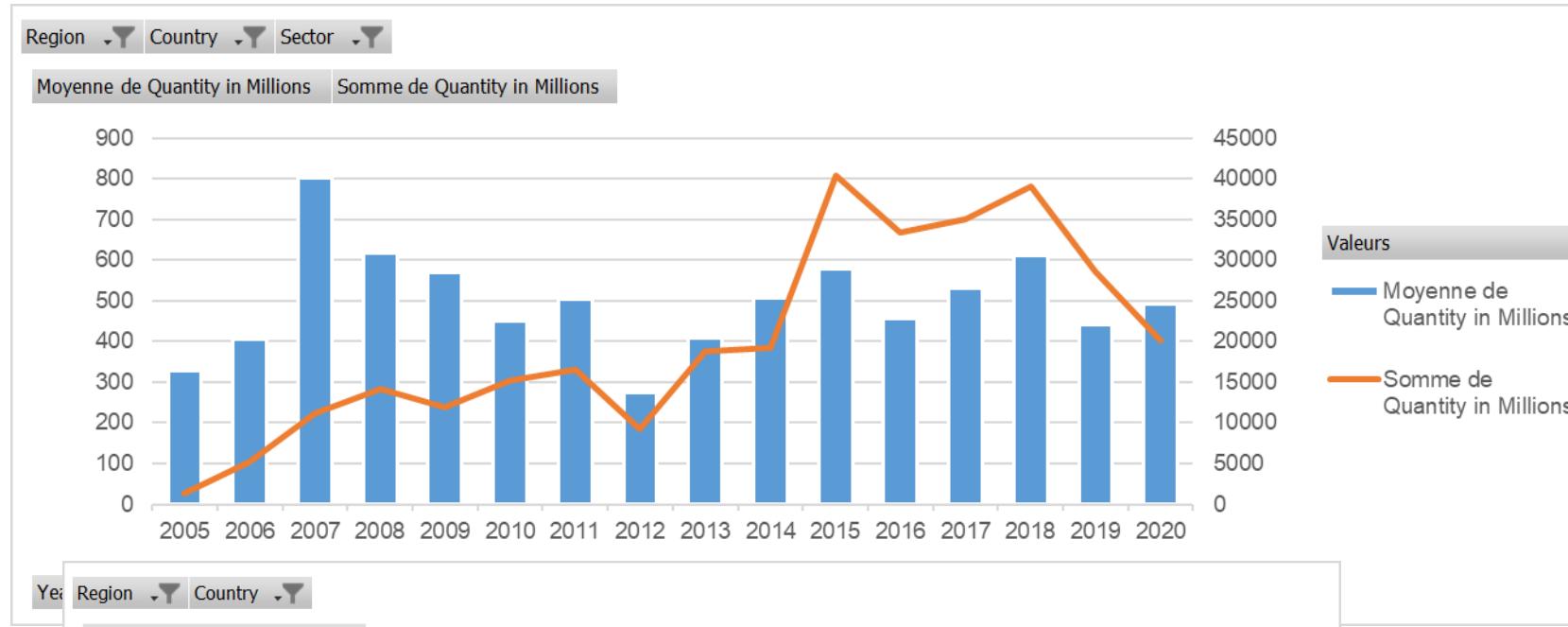


2015-2018



- 2006 -> 2010-2012 :
 - Probably not enough data
- 2006 -> 2015-2018 :
 - A turn to essentially telecoms to 1/3 ratio

Evolution of the average investment per year and per sector

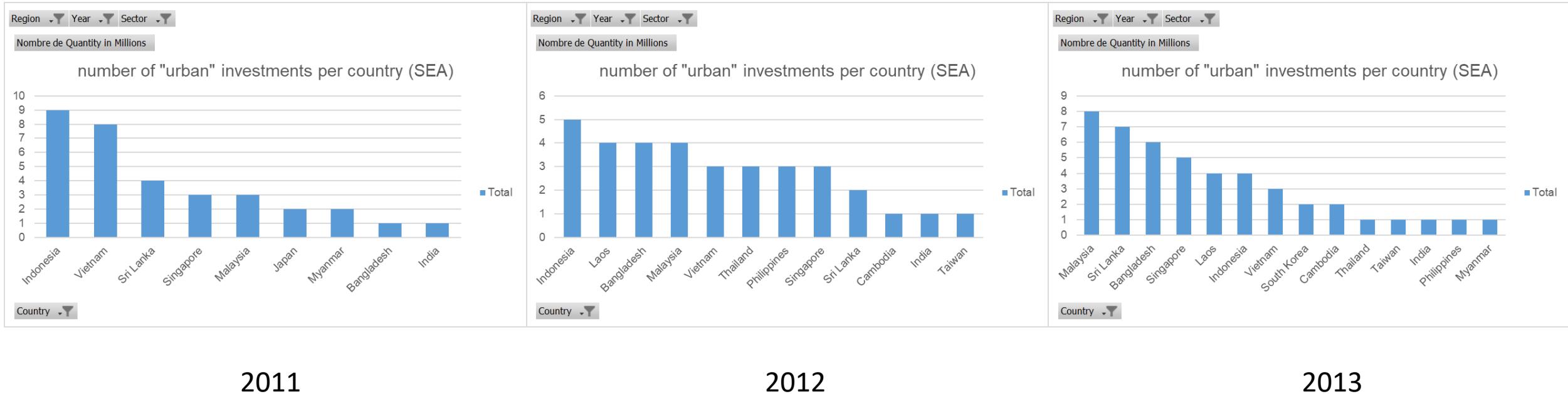


Graph 1: Average investment compared to total investment

- Investments in 2007 were higher in average. It can be due to the fact energy and logistics investments are usually massive and few in number (while some other sectors were not explored yet).
- Less investments were made in 2020 but the average investment remains stable. It's not the case for 2012 => what happened?

Graph 2 : cumulative average investments by sector

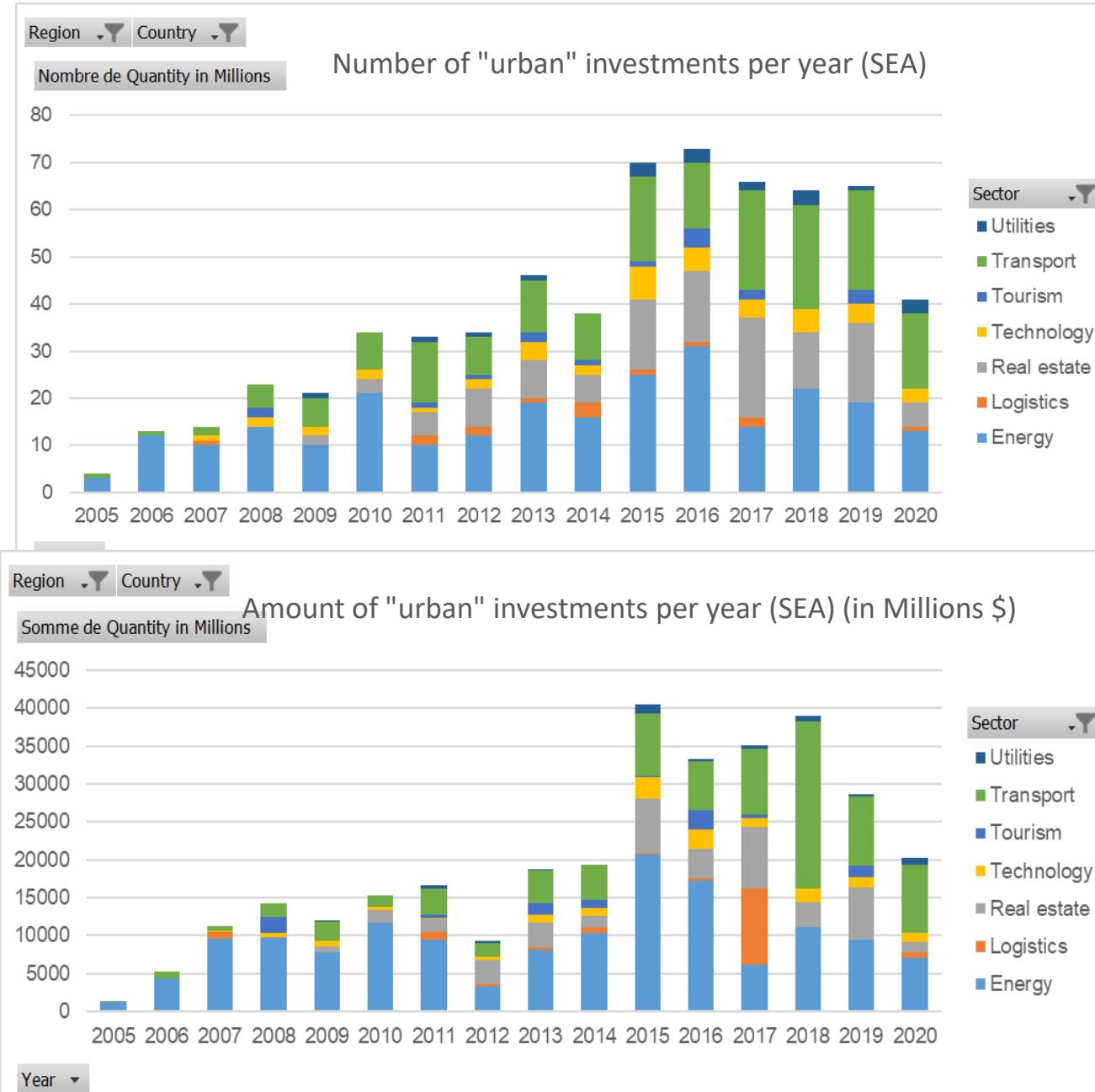
- Despite their numbers, investments in 2012 were low
- High average investment in 2017 in logistics => one massive investment from Vanke, Hopu, Hillhouse and Bank of China (9000 millions \$)
- Overall, it looks like there is no sector that is consistently higher or lower than the others in terms of their average investment (except energy, even if it's not that visible).



What happened in 2012?

- 2012 doesn't look special at all when we look at the number of investments by sector. There were just less money involved those years
- The only major difference we can see, is that investments (in numbers) are more spread out in 2012 than in 2011 and even 2013 => hard to find a clear justification on how it affects average money invested

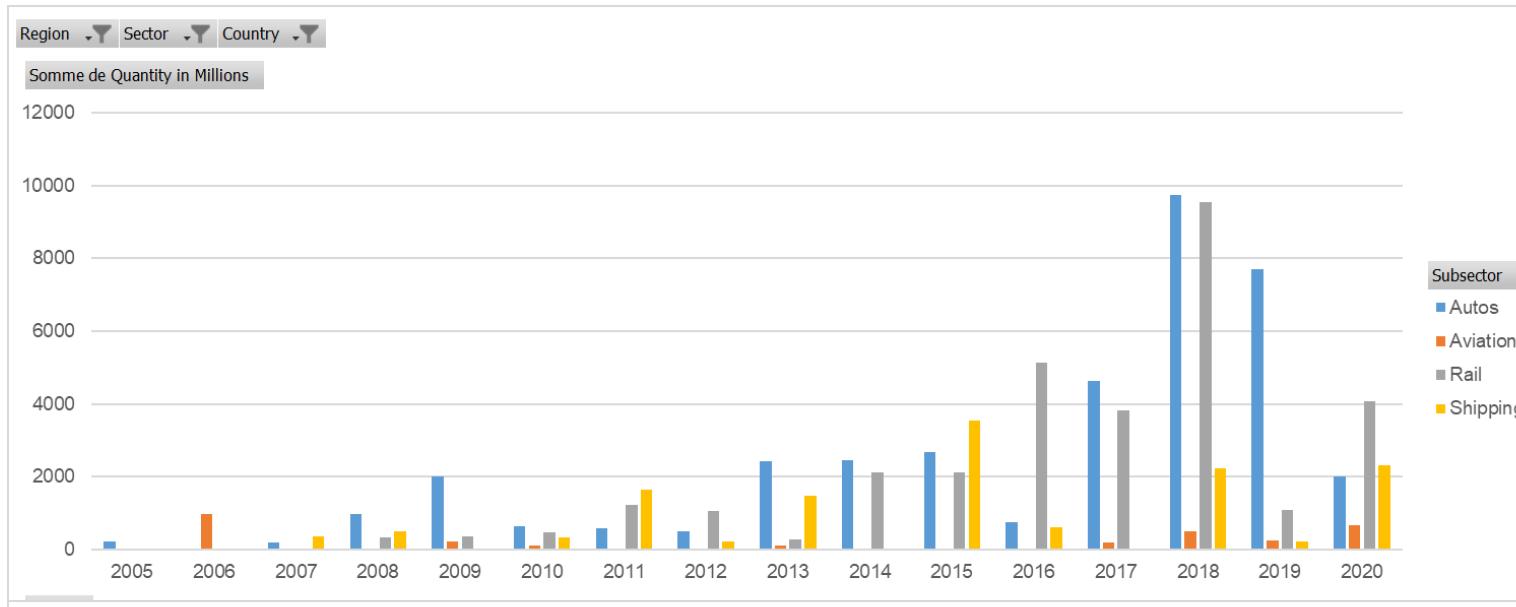
Evolution of the number of investments per year and per sector



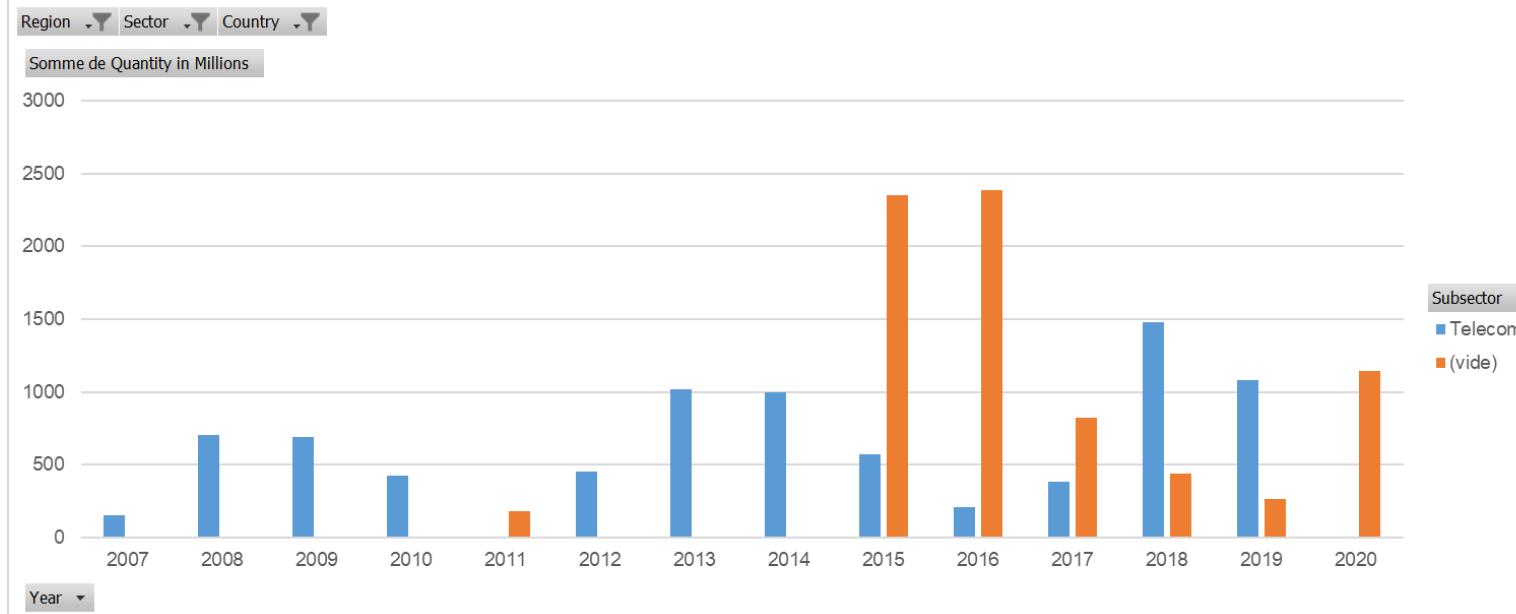
- Energy seems to have always be strong in terms of investments
- **Transport, Technology, Real Estate** grew a lot with 2014 / 2015 peak
- **Utilities and Tourism** looks like fairly new sectors of investment. It will probably take a few years to see if they will become major sectors of investment.

Evolution of the amount of investments per year in Transport and Technology

TRANSPORT



TECHNOLOGY



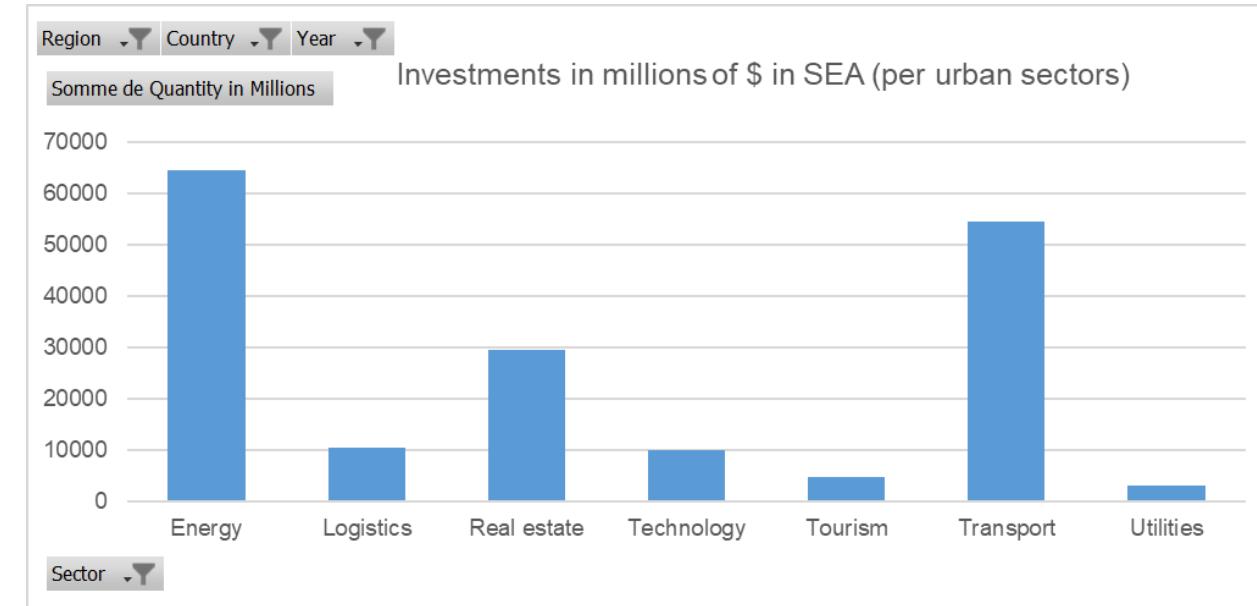
- **Auto, rail and even shipping** have seen a huge **growth** after 2015 while aviation remain low (in terms of big investments).
- It looks like Technology figure have **increased** due to the rise of « empty » that mostly include **electronical parts** and high tech products.
- Telecom remains stable overall with a fall around 2016 and a recent comeback (with 5G)
- Those results could be explained by the **cycling behaviour of telecoms** that require huge investments at the arrival of a **new generation**.

Part 3: Focus on Sectors (1/4)

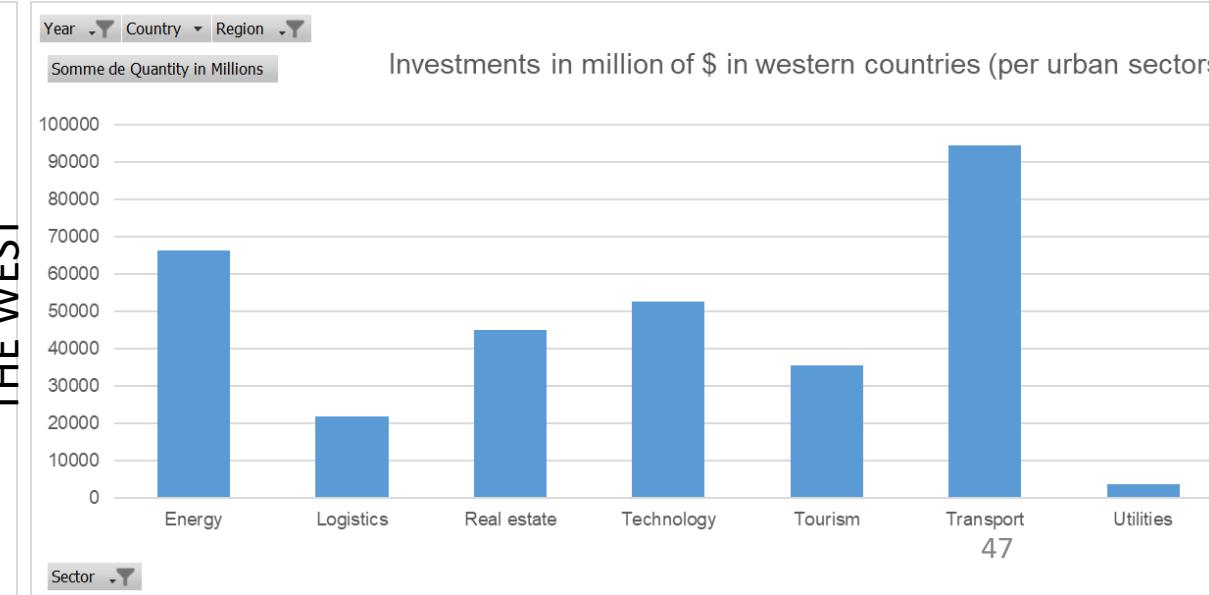
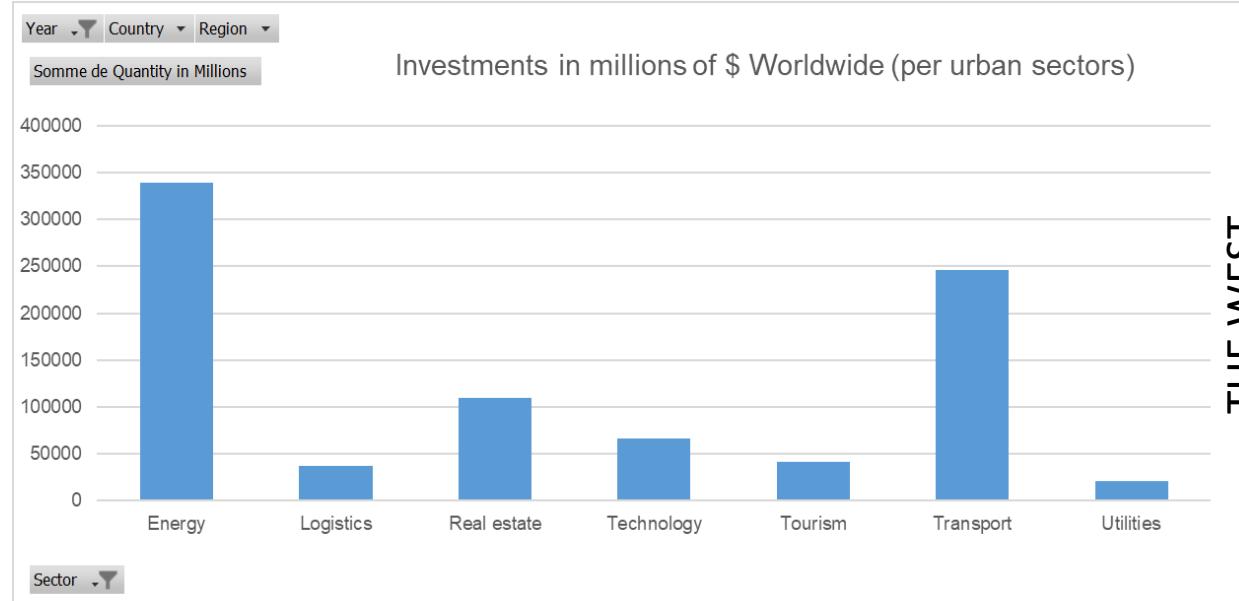
Range : SEA between 2015 and 2019 (Investments and Construction)

1/ All « urban sectors »

Amount of investments per sector

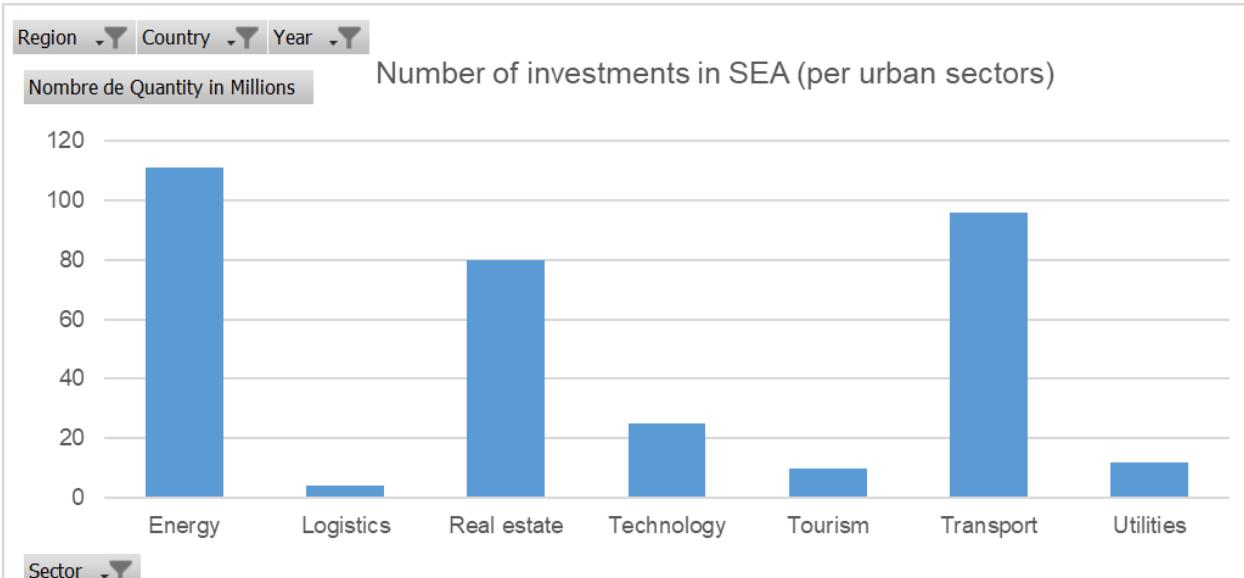


- Investments in SEA doesn't seem to be that much different than in the rest of the world
- We can still see that Real estate is more important in SEA while Tourism is less.
- Investments in SEA are more focused on energy while and less in every other sector (especially transport) except utilities

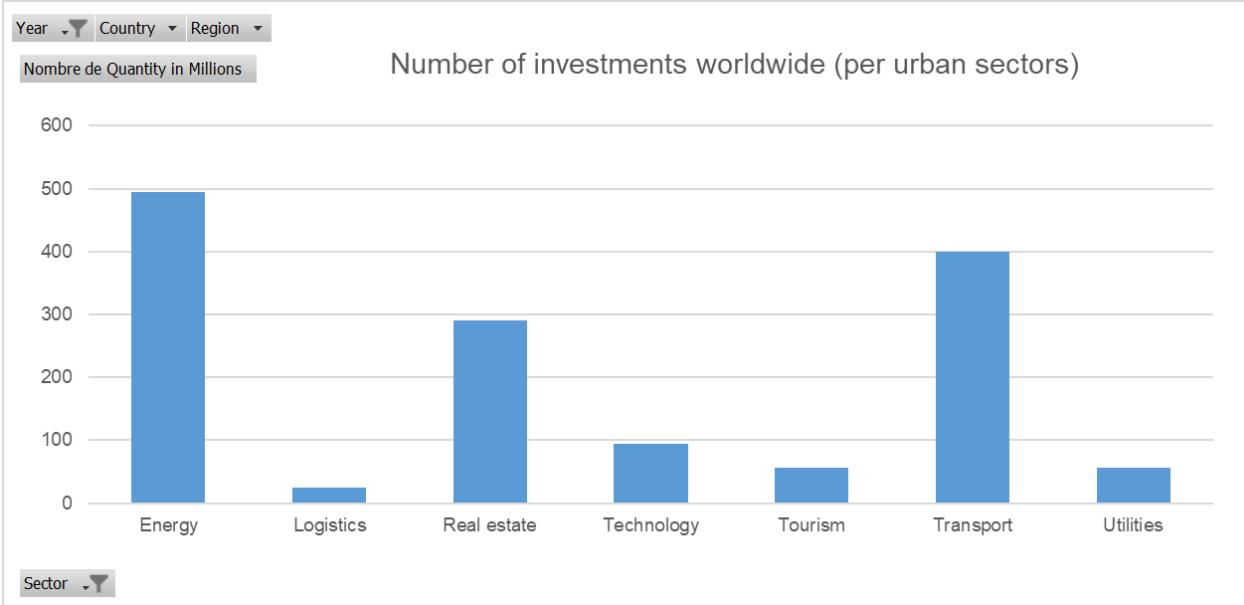


Number of investments per sector

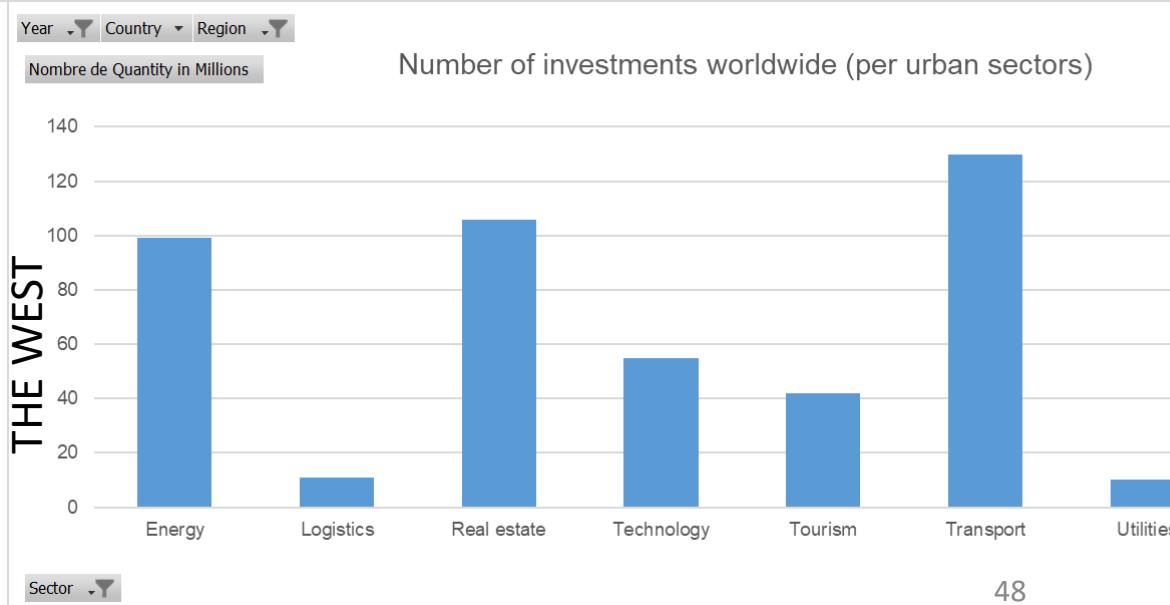
SEA



WORLD

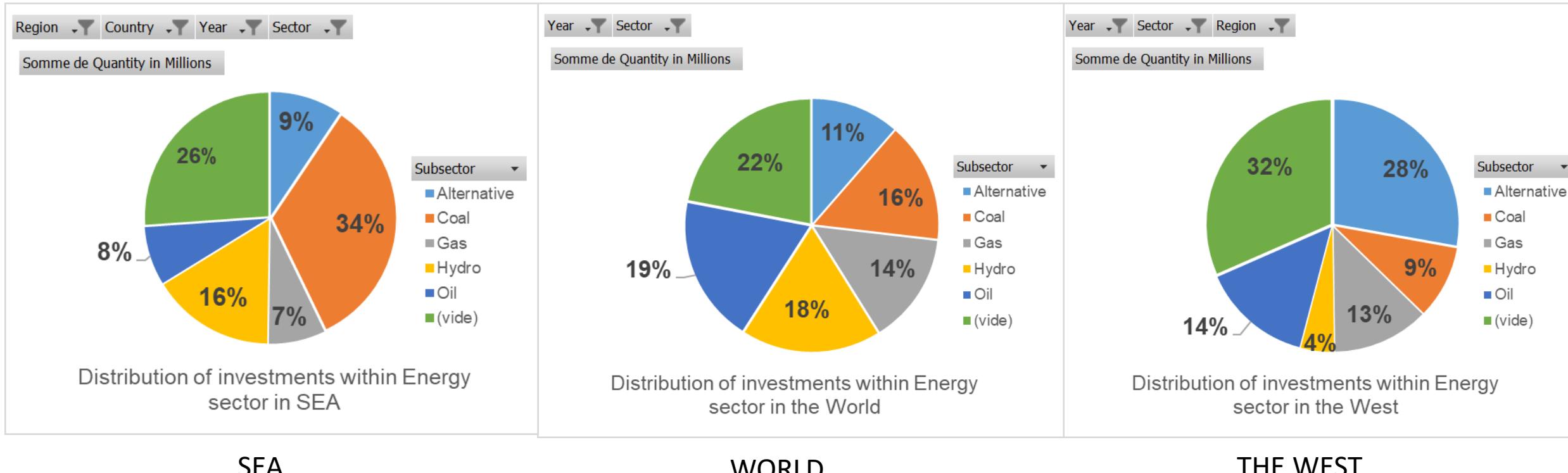


THE WEST



- We can end to the same conclusion regarding the fact we look at the number of investments.

Amount of investments in Energy



SEA

WORLD

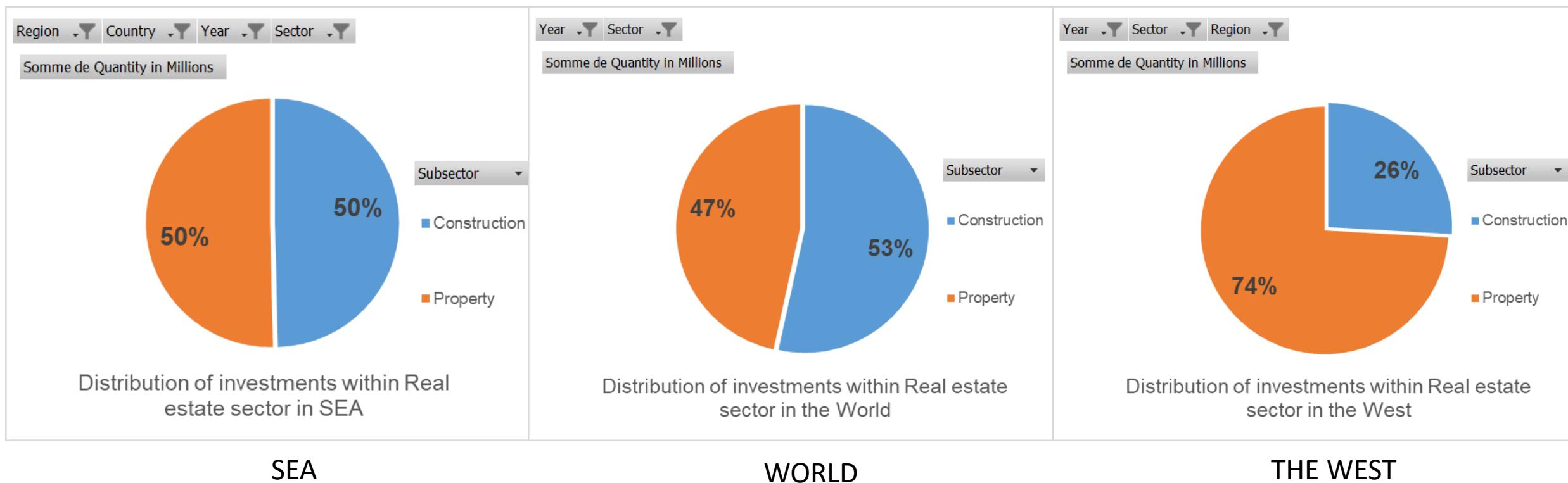
THE WEST

- Investments in SEA are massively turned towards coal which was expected. Which can be expected as it correspond quite well with china's energy mix : <https://www.iea.org/countries/china>
- Hydro is much more important than in western countries where its potential is often already fully exploited
- If we look at investments by numbers, we see there are a lot of investment on alternatives (>20%) which can translate the beginning of a diversification of energy sources (and growth of renewable energy)

Focus on Sectors (2/3)

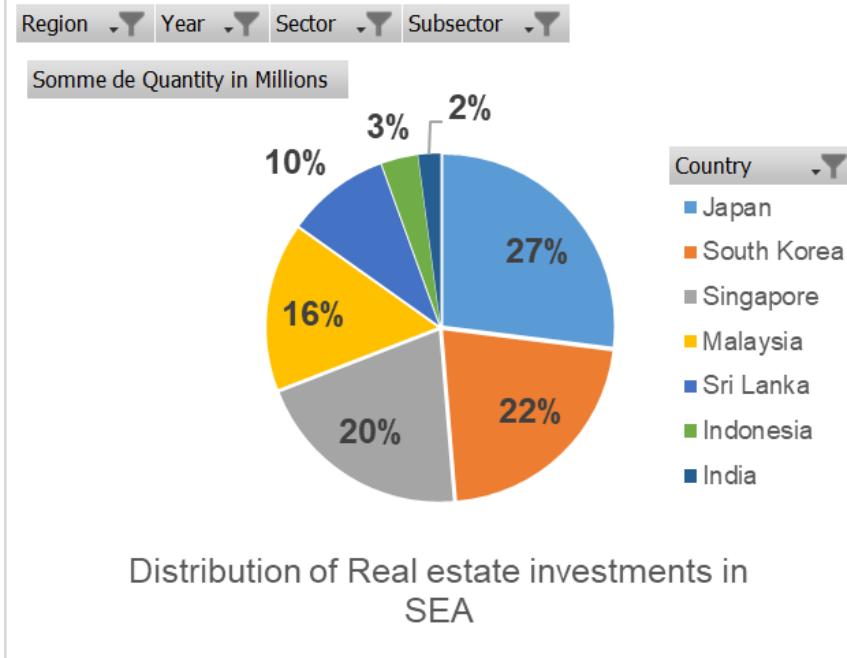
Range : SEA between 2015 and 2019 (Investments and Construction)

2/ Real Estate

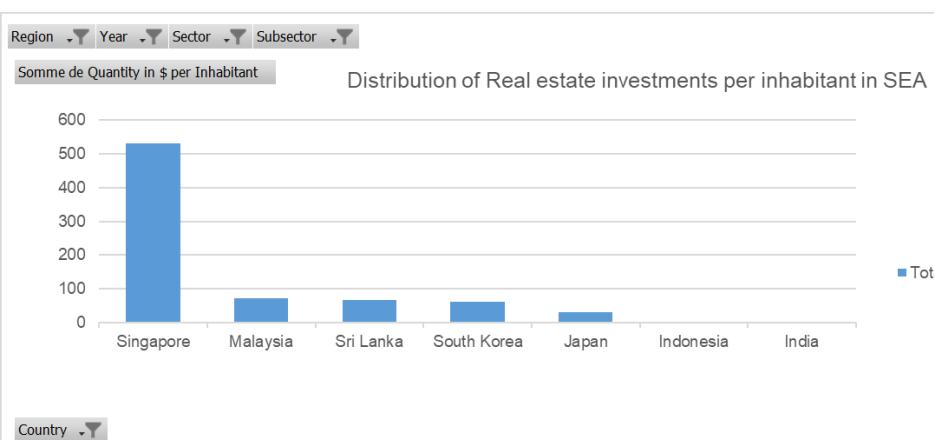
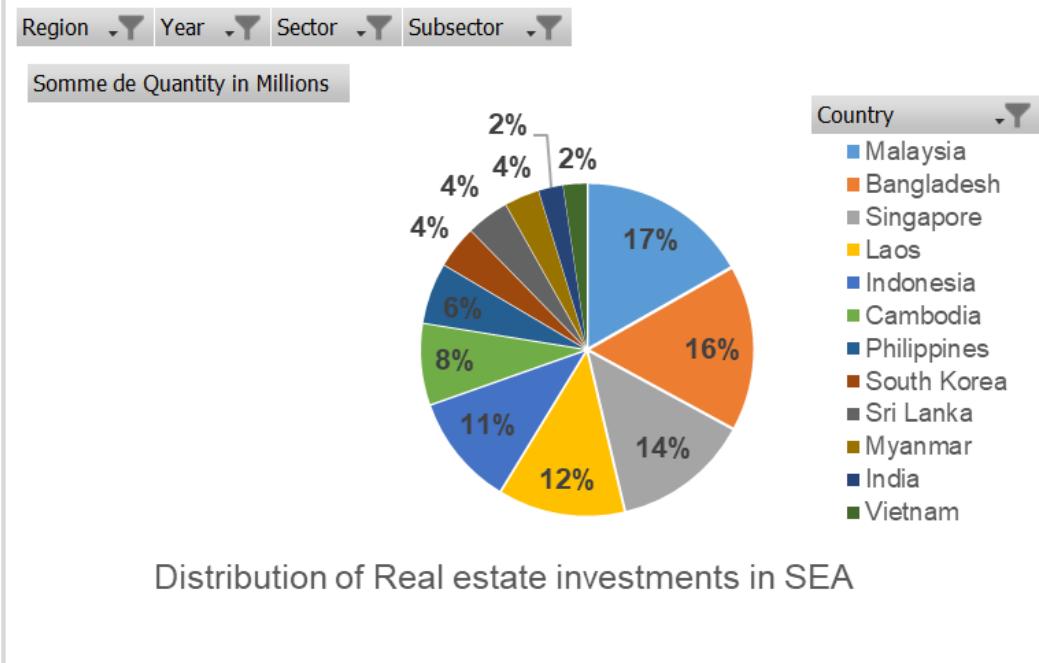


- In SEA we can see there are a lot of investments for the construction of new building than in the West which makes sense as developing countries need new infrastructures.
- The difference with the 69% property in SEA in found early shows that in 2019 there were massive investments in construction. If we look at investments from 2005 to 2020, we are still close to 50% each.

PROPERTY



CONSTRUCTION



When we look at investments in millions of \$, we see that **property** investments are made in the most developed countries in SEA at the exception of **TAIWAN** (in our perimeter)

In **construction**, investments are made in countries where Chinese companies invest a lot in other fields for a long time (MALAYSIA, BANGLADESH, LAOS etc.) that may still need more building to develop their cities and activities.

Per inhabitant, SINGAPORE is a really big place for both building and buying. **Real will to be represented in SINGAPORE? => influence?**

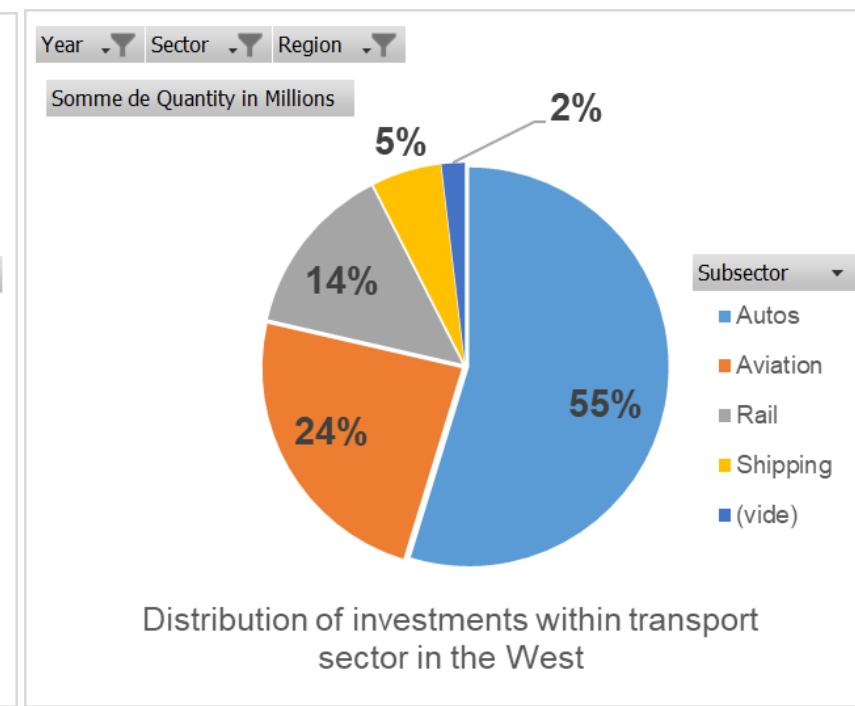
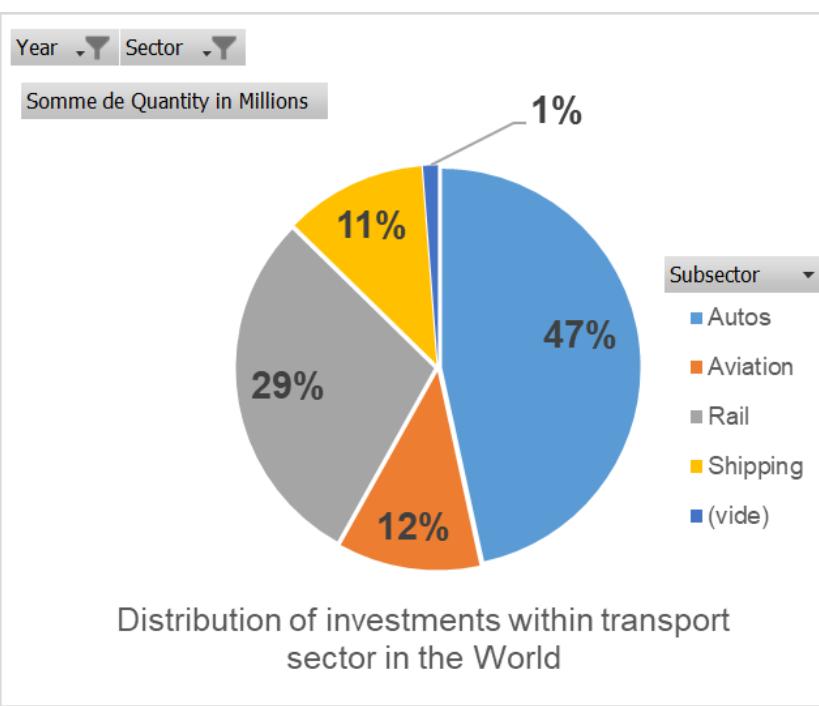
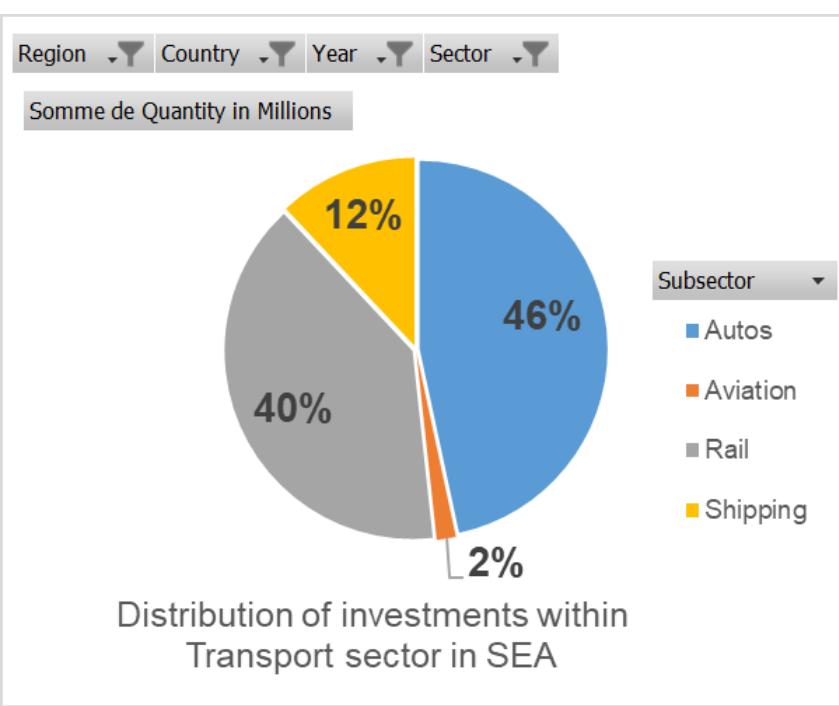
VIETNAM, INDIA, Brunei, THAILAND and Myanmar (in a sense) really doesn't show up and are totally forgotten in terms of real estate investments.

Focus on Sectors (3/4)

Range : SEA between 2015 and 2019 (Investments and Construction)

3/ Transport

Amount of investments Transport



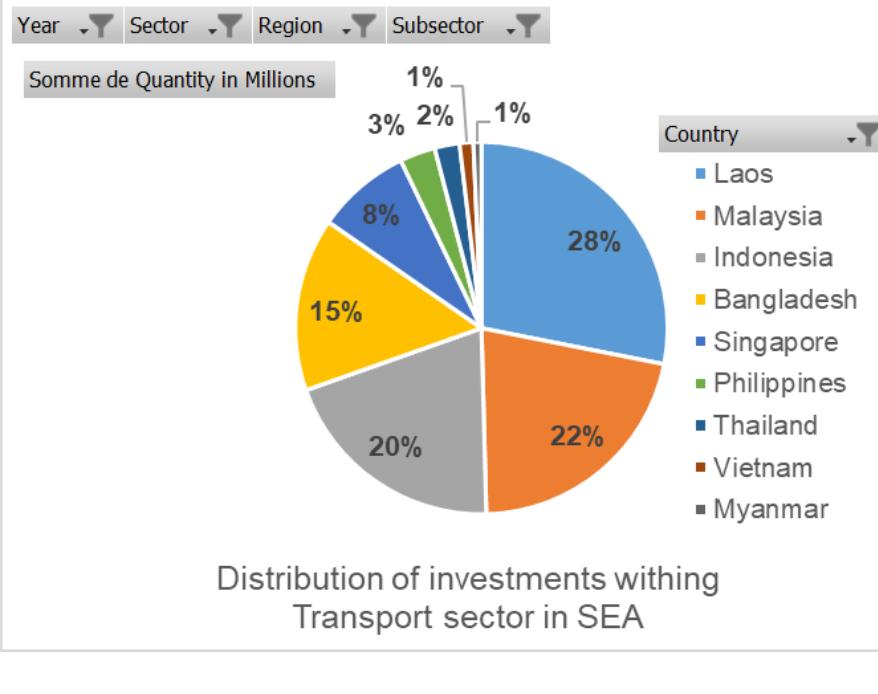
SEA

WORLD

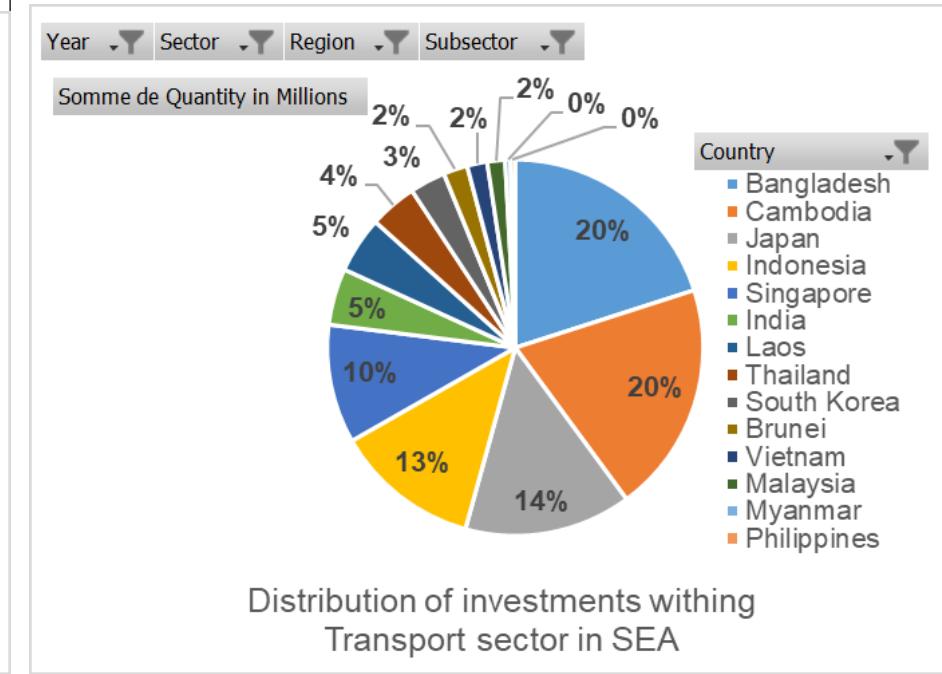
THE WEST

- Investments in SEA are less focused on aviation and much more on rail.
- Both good and people transport? low cost Aviation already well developed?

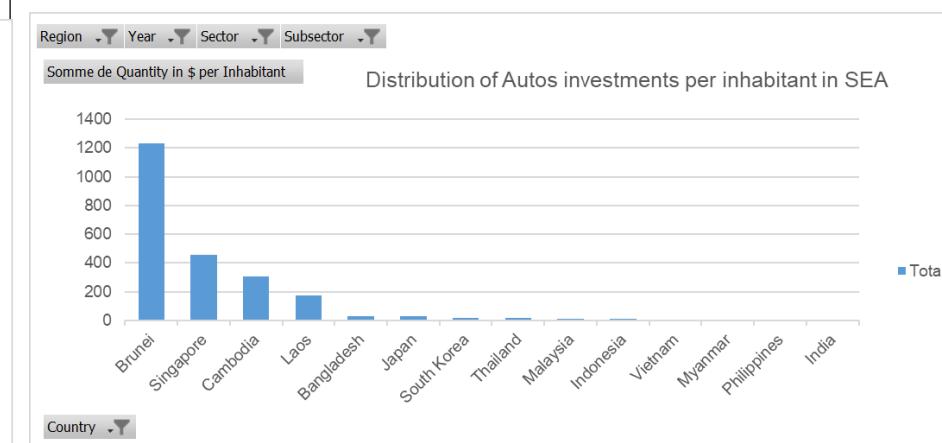
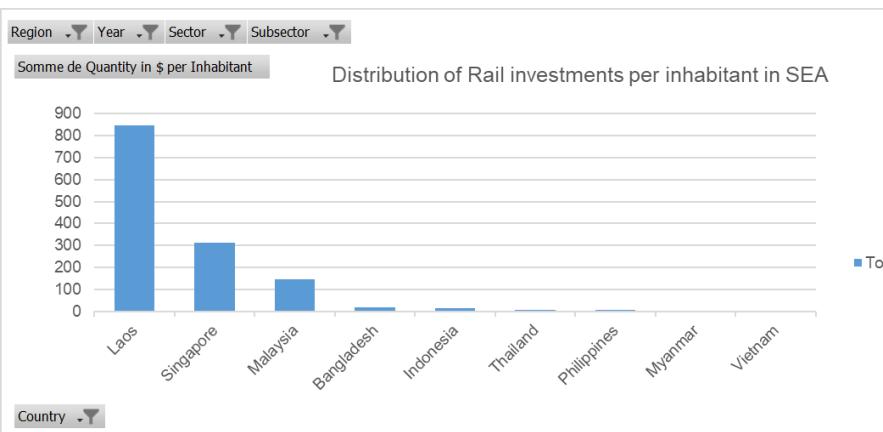
RAIL



AUTOS



- When we look at investments in millions of \$, we see that **rail** investments are made in developing countries in SEA but not all of them (in our perimeter) with **LAOS** and **MALAYSIA** at the top.
- Same thing in Autos but the 2 countries on top are **BANGLADESH** and **CAMBODIA**. In countries with a lot of investment in transport, it seems there is a choice made between focusing in auto or rail (by looking at this picture and others).
- JAPAN** look important in auto subsector but it could be on cars rather than in roads (**nissan** as a transaction party).



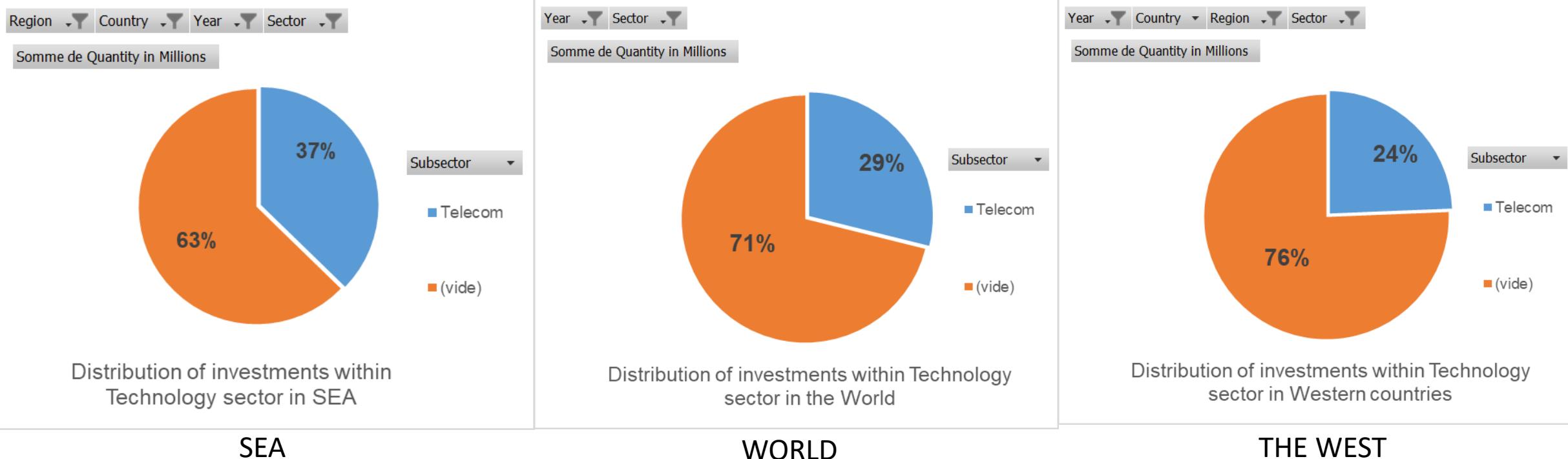
Per inhabitant, SINGAPORE and Laos are both big in auto and rail and Brunei appear as important in auto.

Focus on Sectors (4/4)

Range : SEA between 2015 and 2019 (Investments and Construction)

4/ Technology

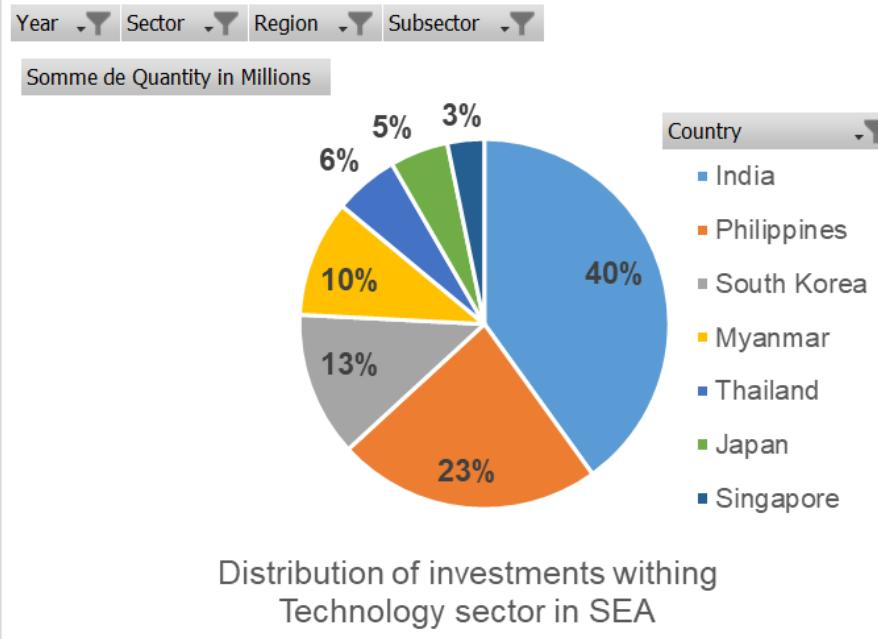
Amount of investments in Technology



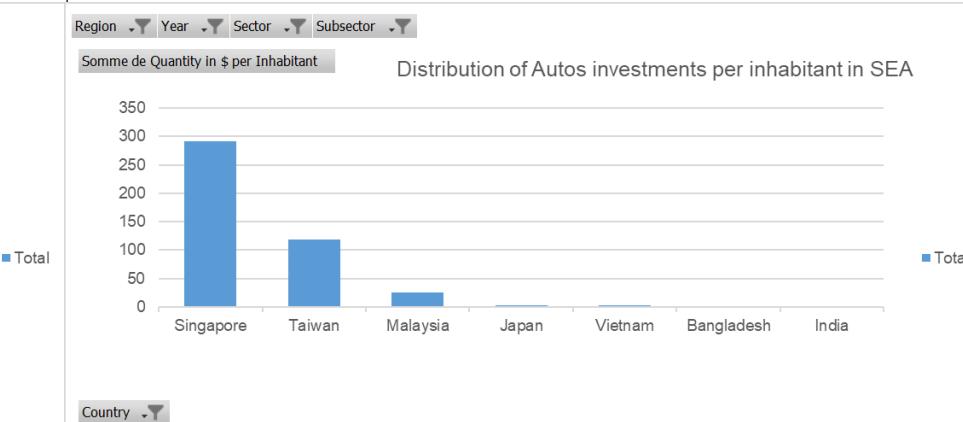
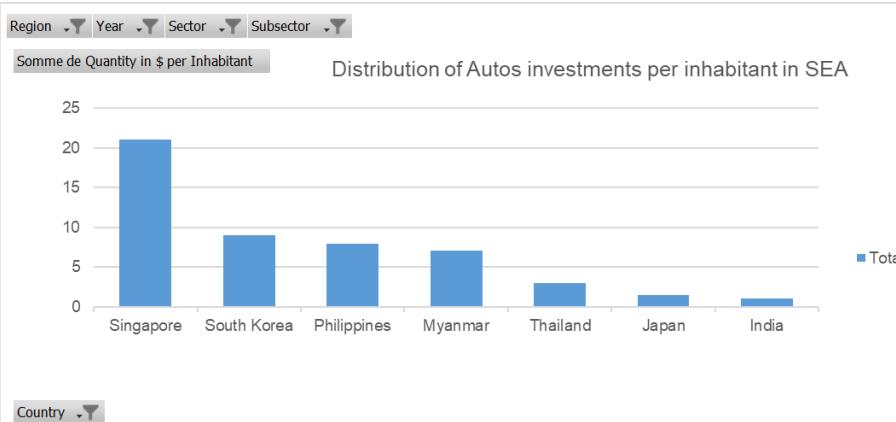
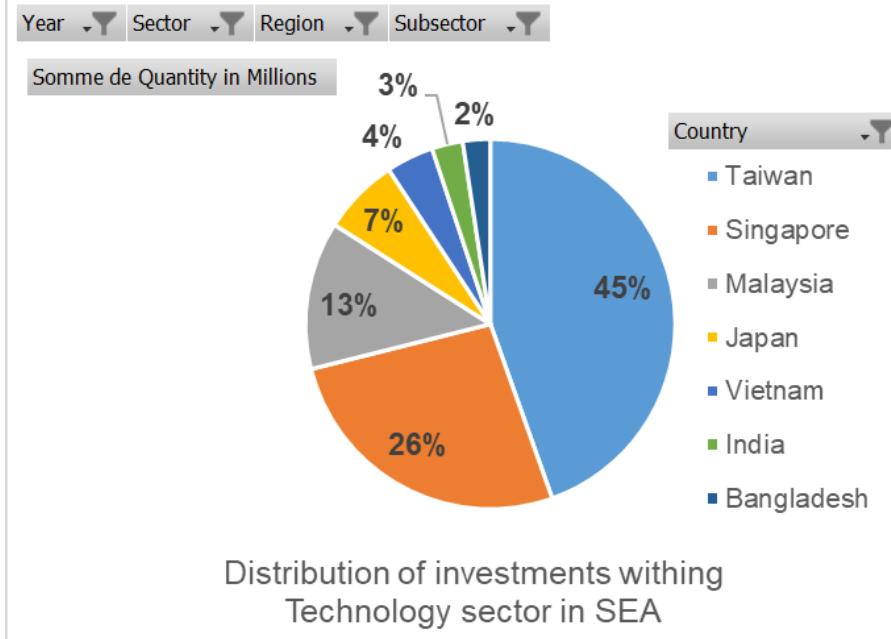
- Investments in SEA seems a bit more focused towards Telecoms than the rest of the world

Probably due to 5G development which is faster and much more dominated by chinese companies in SEA.

TELECOMS



OTHERS



- In **Telecoms**, the profile of countries are really different with **INDIA** at 40% alone.
- In **others** (mainly electronic parts / high tech) **TAIWAN** is the biggest country where investments are made with **45 %** !
- Per **inhabitant**, **SINGAPORE** and Laos are both big in auto and rail and Brunei appear as important in auto.
- In proportion to inhabitant **SINGAPORE** is by far the most important place both in telecoms and others.
- In **others** (mainly electronic parts / high tech) **TAIWAN** is the biggest country where investments are made with **45 %** !
- Per **inhabitant**, **SINGAPORE** and Laos are both big in auto and rail and Brunei appear as important in auto.

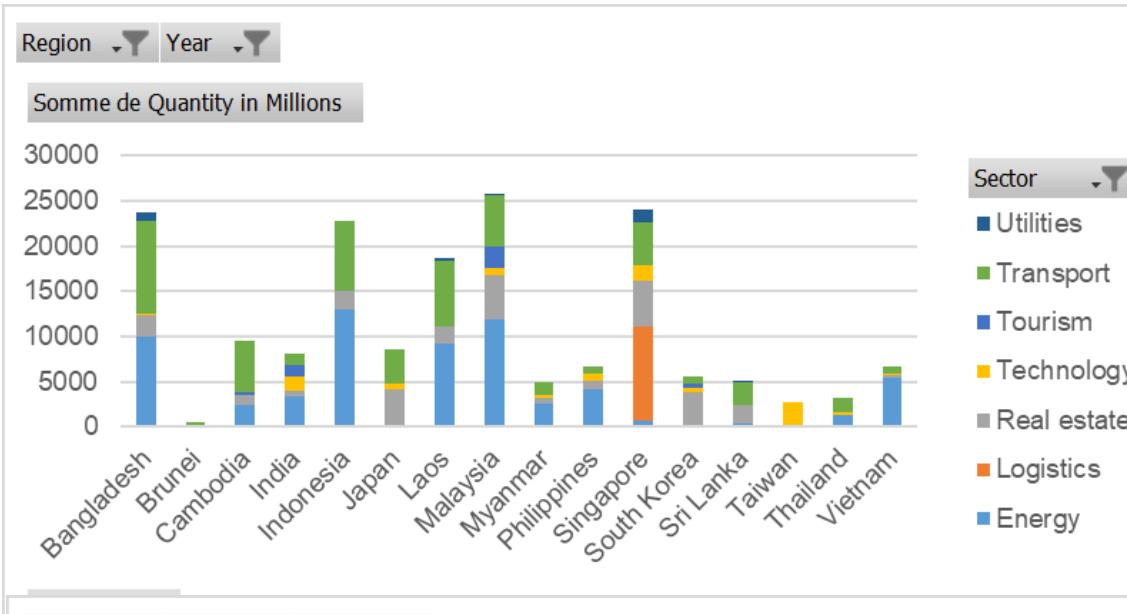
Part 4: Focus on Regions

Perimeter : **Urban sectors** between 2015 and 2019 (Investments and Construction)

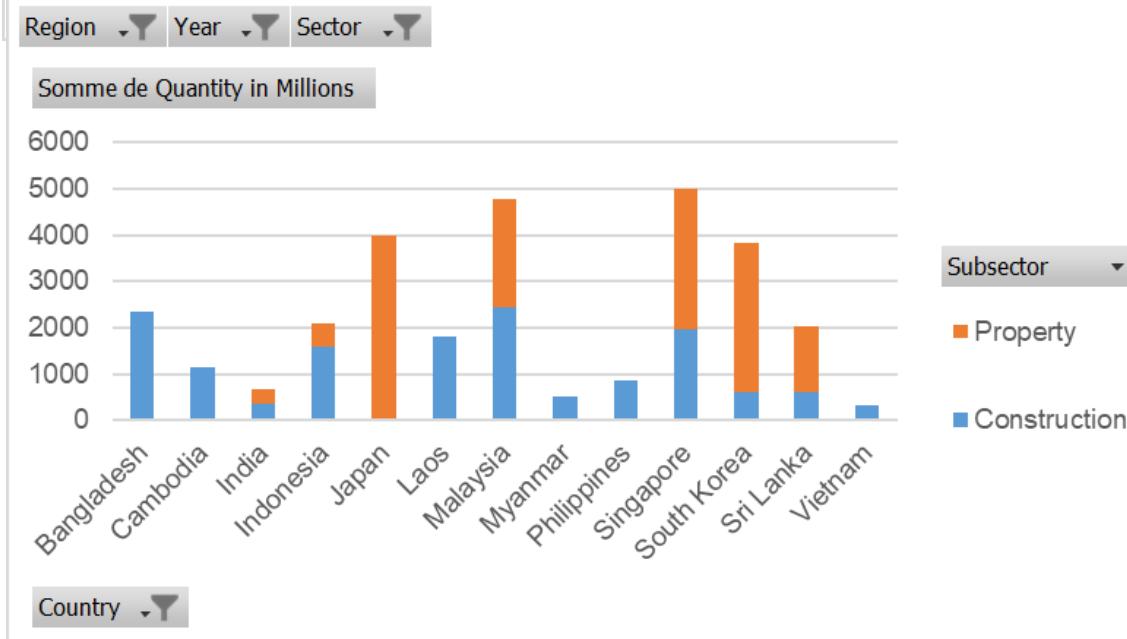
1/ SEA

Amount of investments per country, per sector in SEA

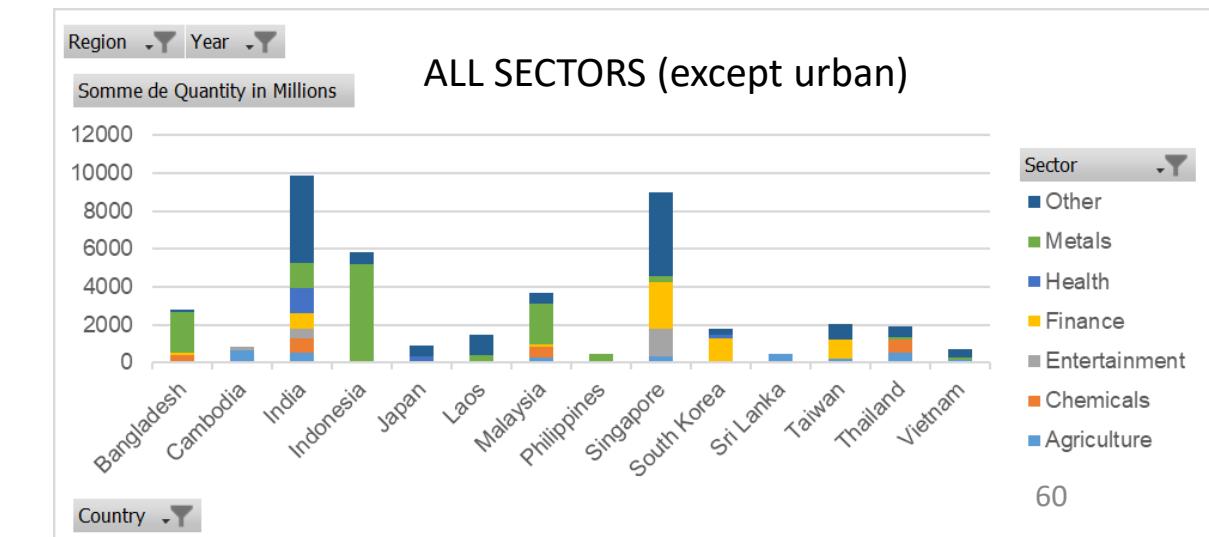
URABAN SECTORS



REAL ESTATE

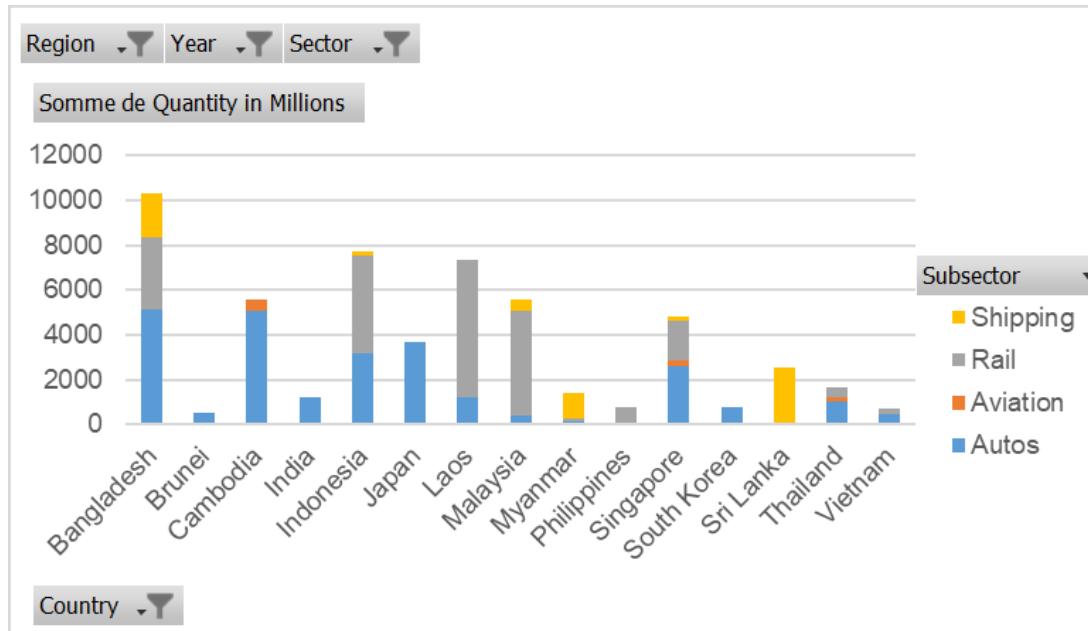


- We clearly see a few counties where China invest a lot. These are developing countries such as BANGLADESH, INDONESIA, LAOS, MALAYSIA where we see massive investment in energy and transport, more than anything else.
- It looks like China really wants to promote core investments in those countries to help them develop fast.
- We can also see that those developing countries are targeted by construction project (in Real estate) rather than property (thing we saw just before). It confirms even more the will to construct massively in those countries.
- The situation in Japan or in SOUTH KOREA is different as there is just no more space to build new buildings. That's why China influence and investment are more « soft ».
- We can see that this strategy doesn't apply to other sectors. We can see that some countries that felt excluded by urban investments are probably the target of other strategies (especially in INDIA and also in developed countries where China invest in finance).

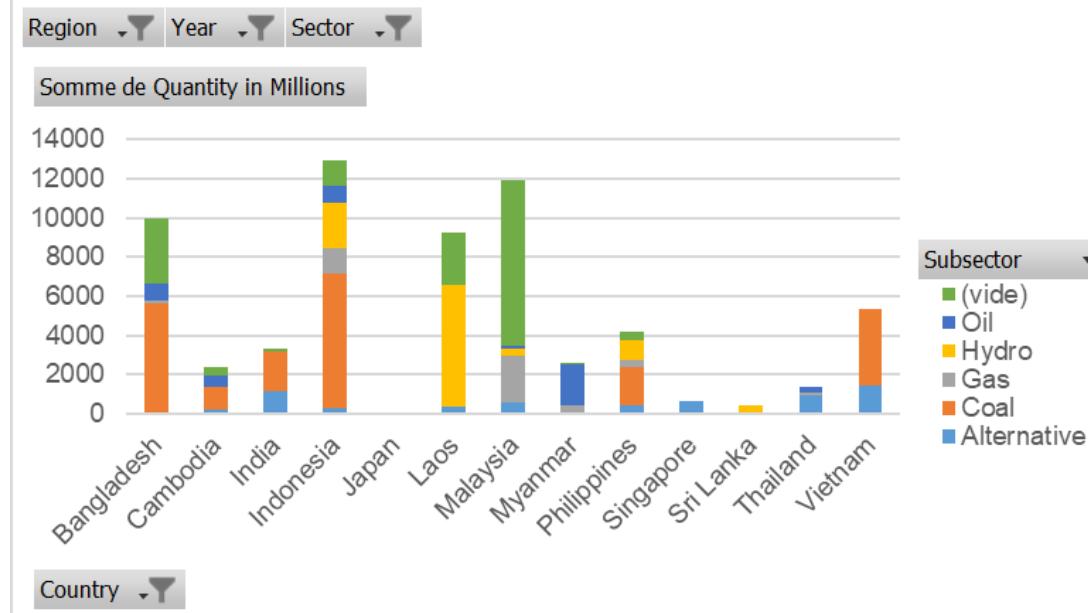


Amount of investments per country, per sector in SEA

TRANSPORT



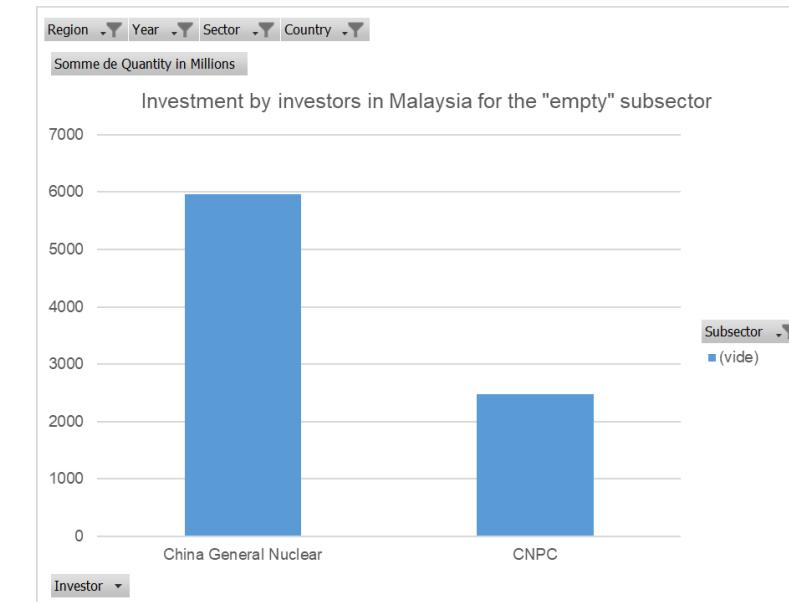
ENERGY



- Massive investments in construction and energy seems linked with rail. It seems that China and chinese companies have a clear project for these countries.

Such massive investment combined with a particular interest in rail infrastructures makes me believe China is at the initiative of the creation of new cities.

- I was also expecting the use of **coal**, a source of energy quickly available and cheap. It is really the case for **BANGLADESH** and **INDONESIA** but not for **LAOS** and **MALAYSIA** where China massively invested respectively in **hyro** and **nuclear** energy.
- Both **MALAYSIA** and **LAOS** already had the ambition to invest in those sources of energy, that can explain why China's companies didn't invested that much in coal. (links in commentary)



CNPC = China National Petroleum Corporation

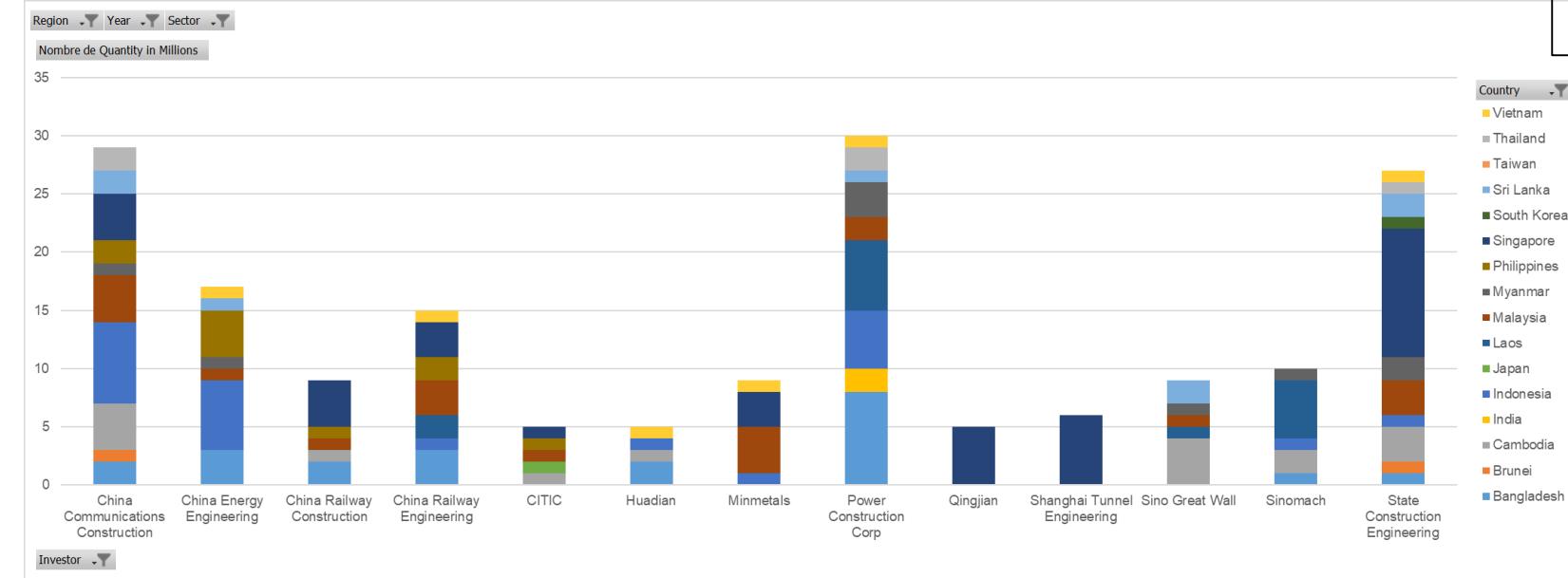
Most of the investment in MALAYSIA are nuclear energy

Part 5: Investors

Range : Urban sectors between 2015 and 2019 (Investments and Construction)

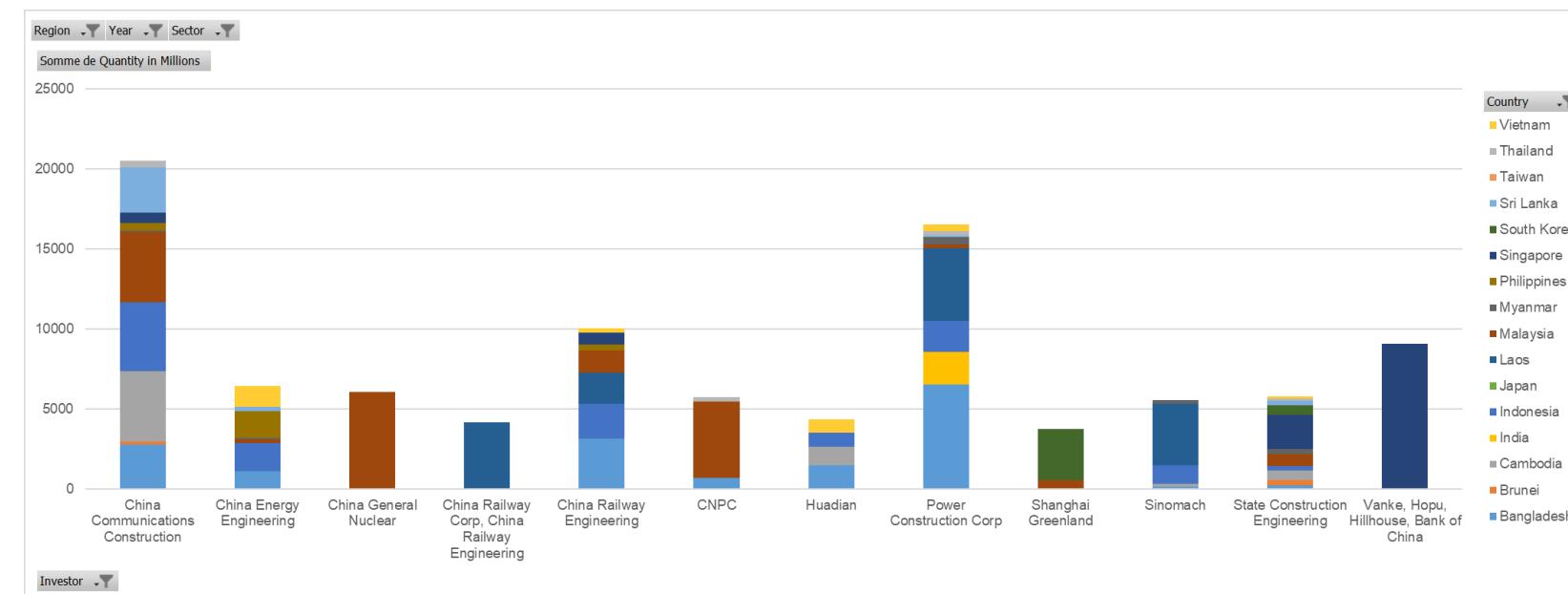
1/ SEA

Investments per investors, per country in SEA



Graph 2 : top 10 in investments filter

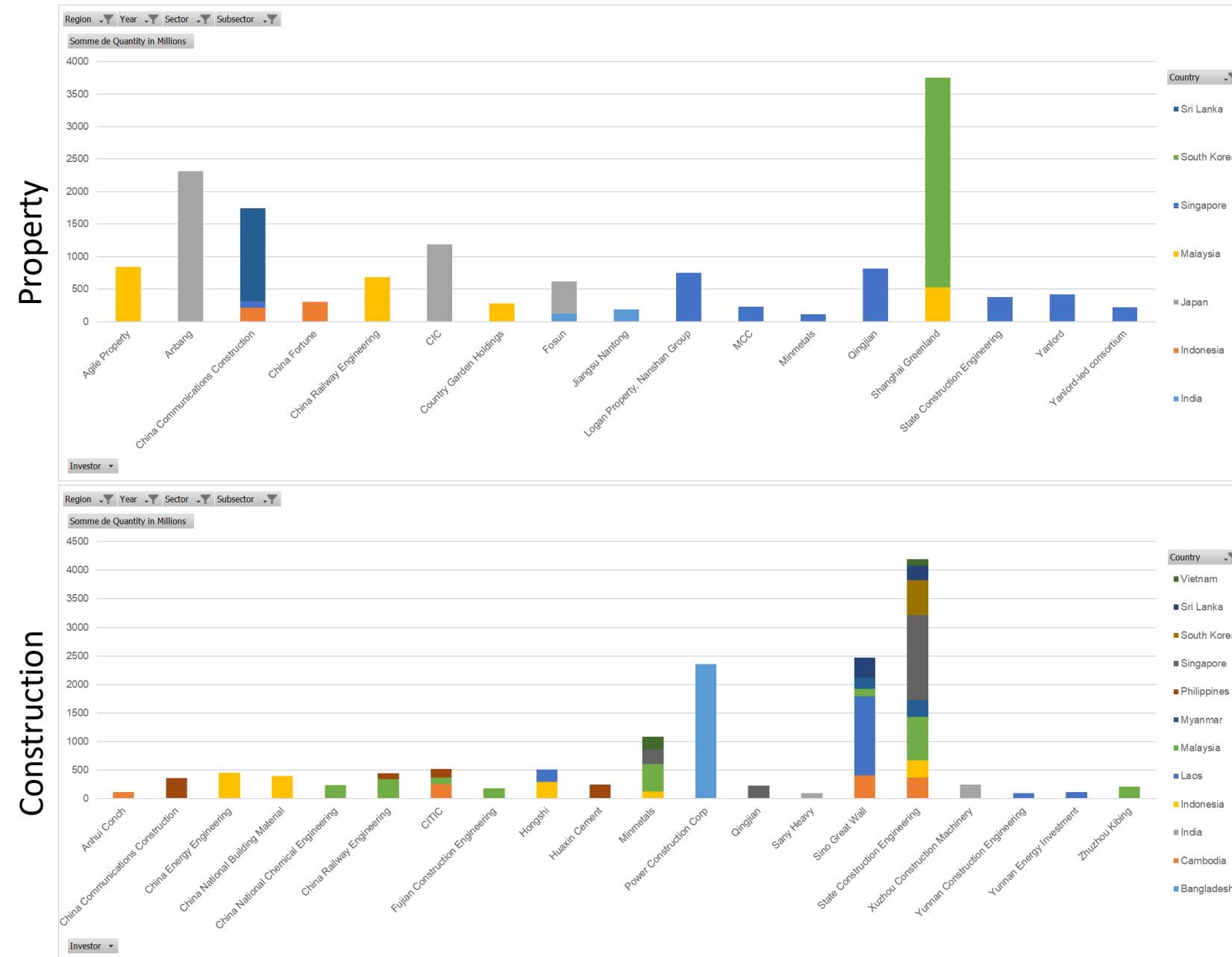
- At the exception of 1 or 2 companies, the ones having **multiple investments in multiple countries** are big and **state owned companies**
- The only **private** companies that do multiple investments also invest in **one country** (Qingjian and Shanghai Tunnel Engineering)
- By looking at the amount of money investing it comes with no surprise that its mainly public companies that carry big projects in SEA (considering what we just saw)
- It seems state owned are encouraged to invest massively outside, and here in SEA especially. China Communication Construction has spent 20 000 Millions of \$ in only 4 years in SEA.



- A few countries attract some companies in particular that invest only here. It's the case for **SINGAPORE** (Qingjian and Shanghai Tunnel Engineering just made 9 investments only in SINGAPORE).
- SINGAPORE** ends up being really unique as it attracts massive investments for its population, in sectors not developed elsewhere (logistics) so we will go deeper to see what data on actors can tell about it

It is also the case for **MALAYSIA** which had a big project around **nuclear plants**.

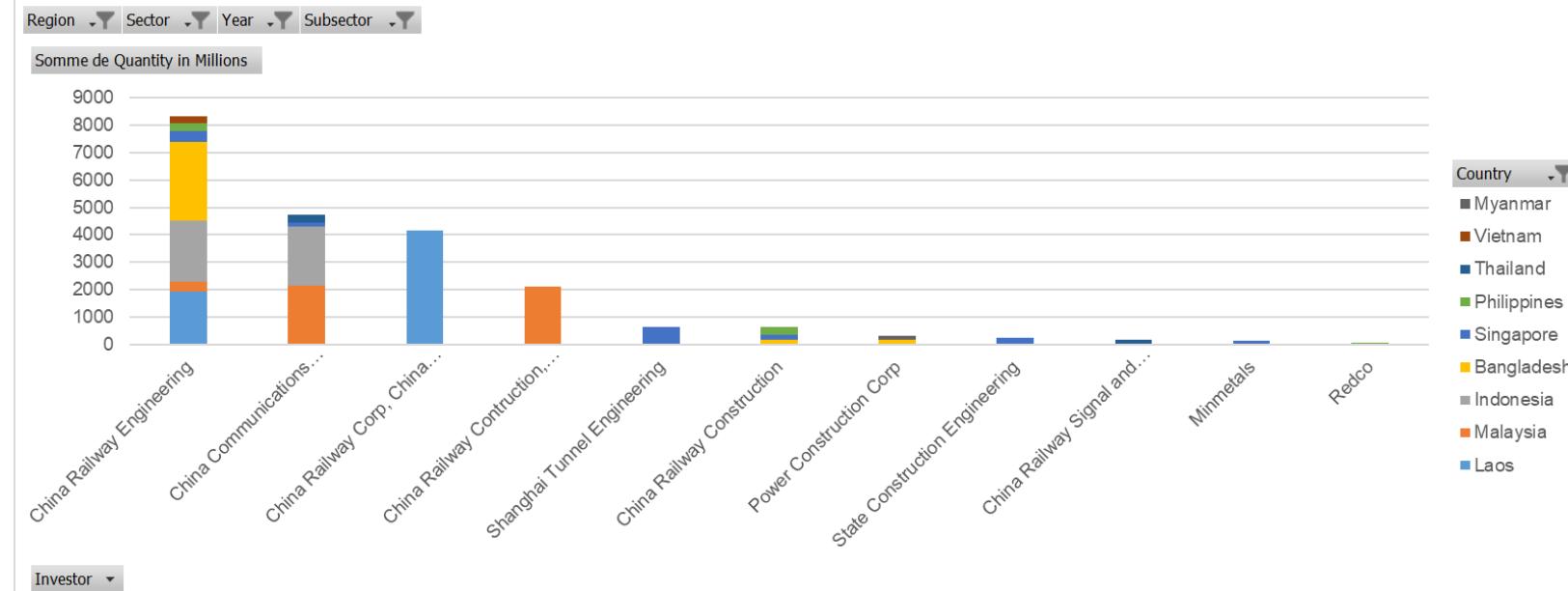
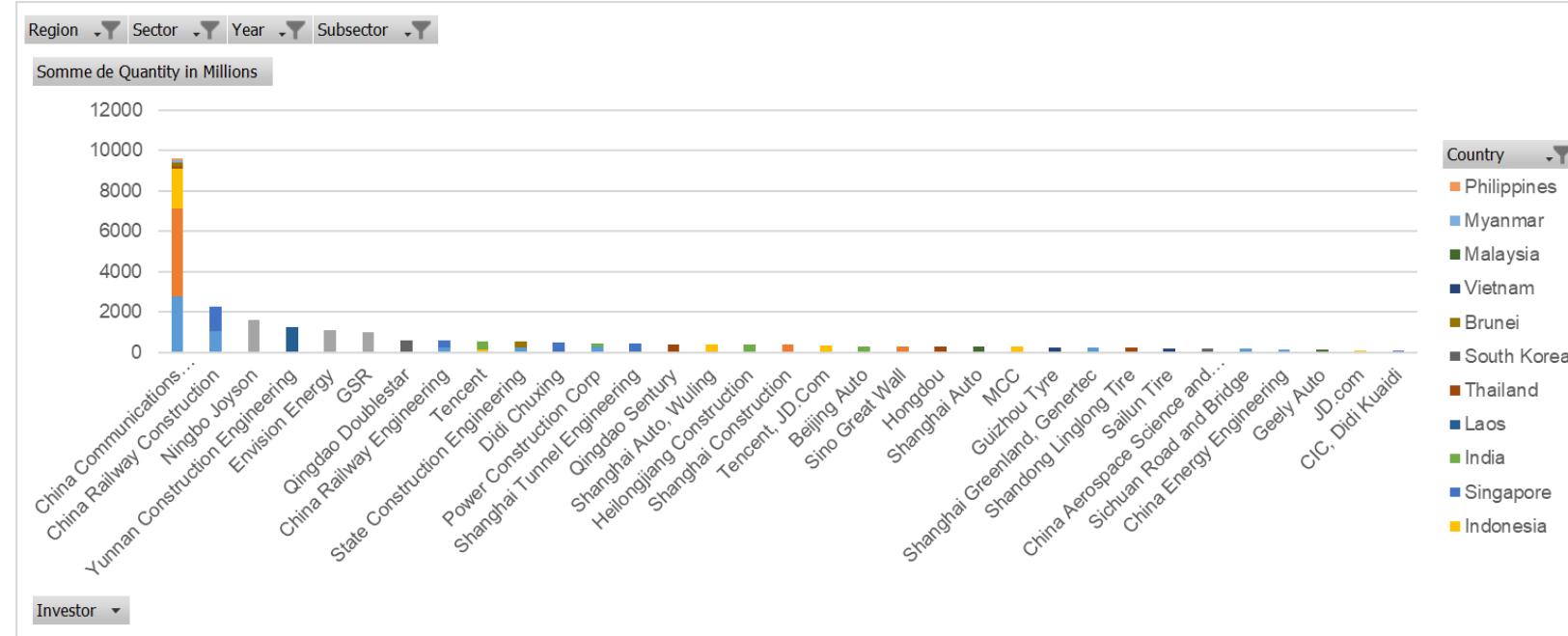
Amount of investments in Real estate, per investors, per country in SEA



- In property, private companies are not always the one that invest the least
 - They are also split in only 3 countries : Japan, SINGAPORE and INDIA
- => What could it mean?
- Only private company invest in INDIA => INDIA refuse chinese public investment?

- In construction we also see that companies that invest the most, and in most countries are state owned
- Despite differences in amounts, there are as much public than private companies that invest in SEA real estate (and in different countries)

Amount of investments in Transport, per investors, per country in SEA

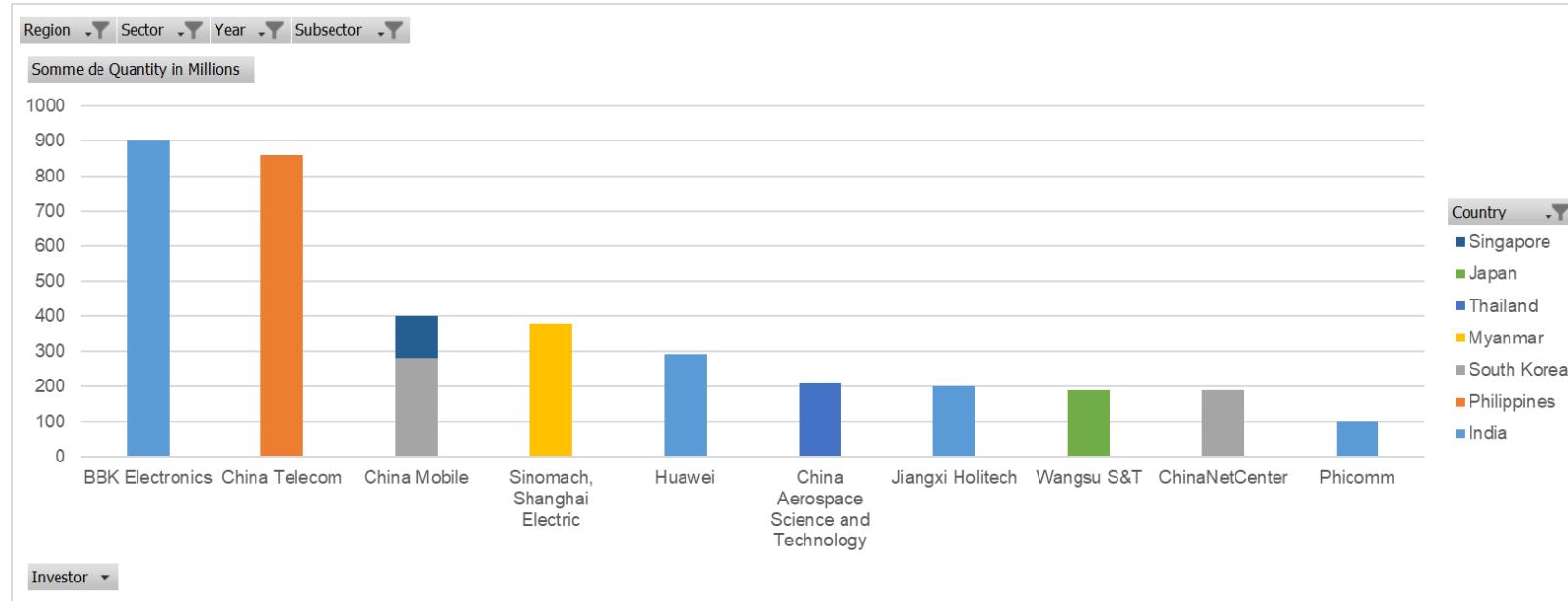


- China communication construction is massive and invested in the most countries than any other investor.
- Very few investors invest in multiple countries (mainly the biggest)
- Looking at the most important investors, we can see **private/public** companies that invest in 1 or 2 **developed countries** and probably in **auto industry**.
- At the opposite we have **state owned** companies in multiple **developing countries** that seems to invest in **roads** and **infrastructures** (construction).
- For rail its almost exclusively **state owned companies**.
- **China Railway Engineering** / construction is really dominant with 2 times the value of the second.
- China doesn't seems to invest in developed countries' infrastructures, that why they do not appear.
- There aren't big investments in rail industry this time like there is for auto industry.

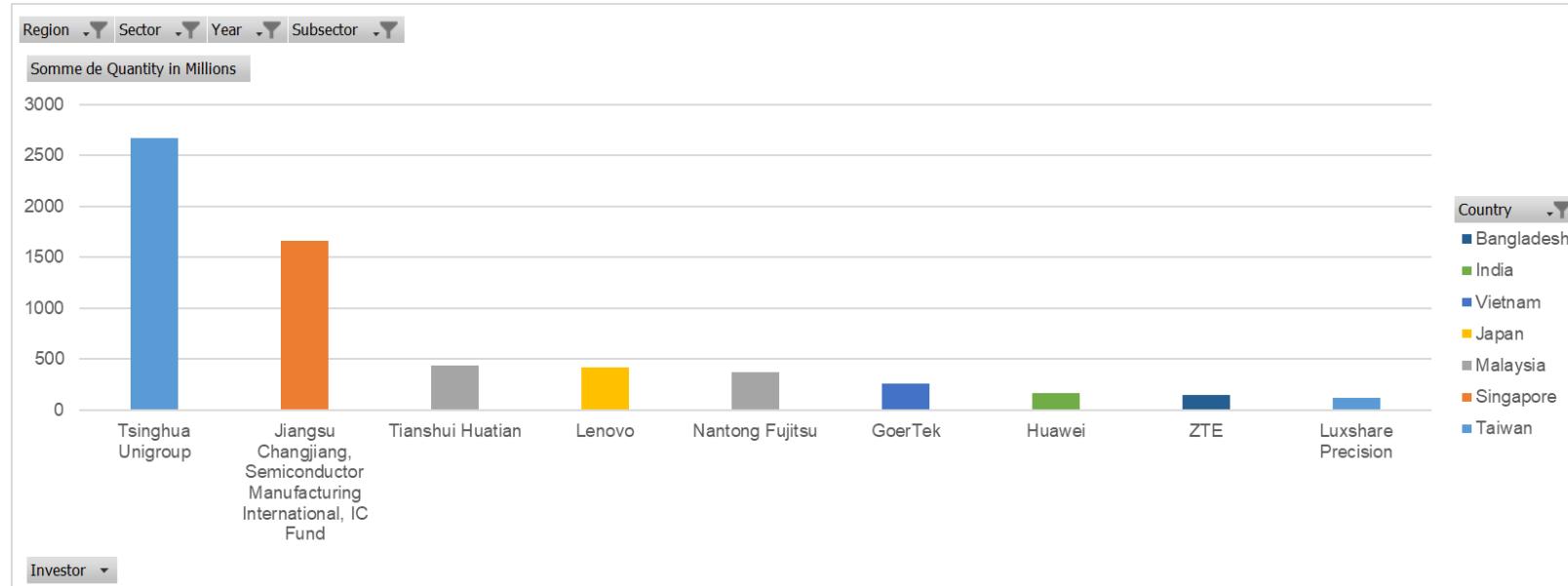
For **aviation**, Bank of China is the biggest investor (in **SINGAPORE**)

Amount of investments in Technology, per investors, per country in SEA

TELECOMS



OTHERS



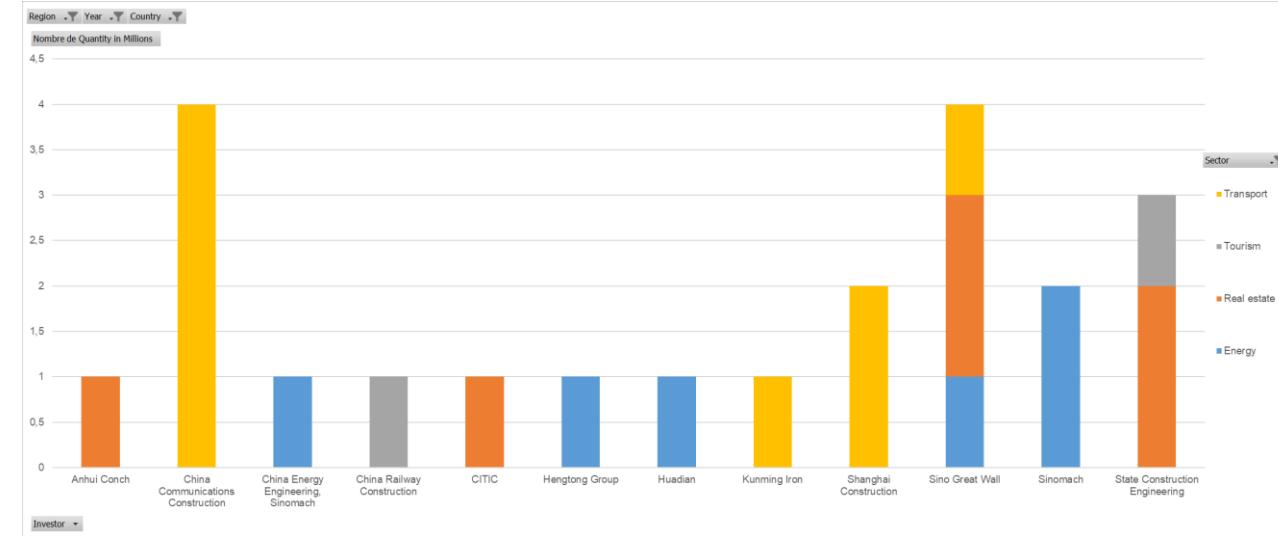
- In Technology, investors focus their investment **on 1 country only**, which is surprising in **telecom** where we expect **5G** being developed in a lot of countries. (looks like it is a different company for each country)
- The first investor in both subsector are public / private

Investors

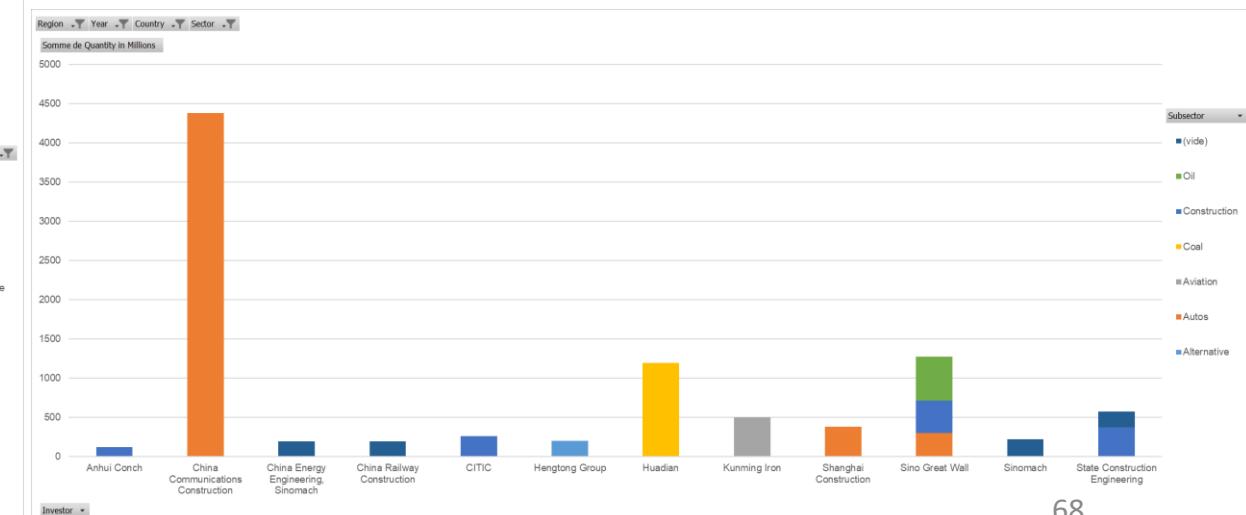
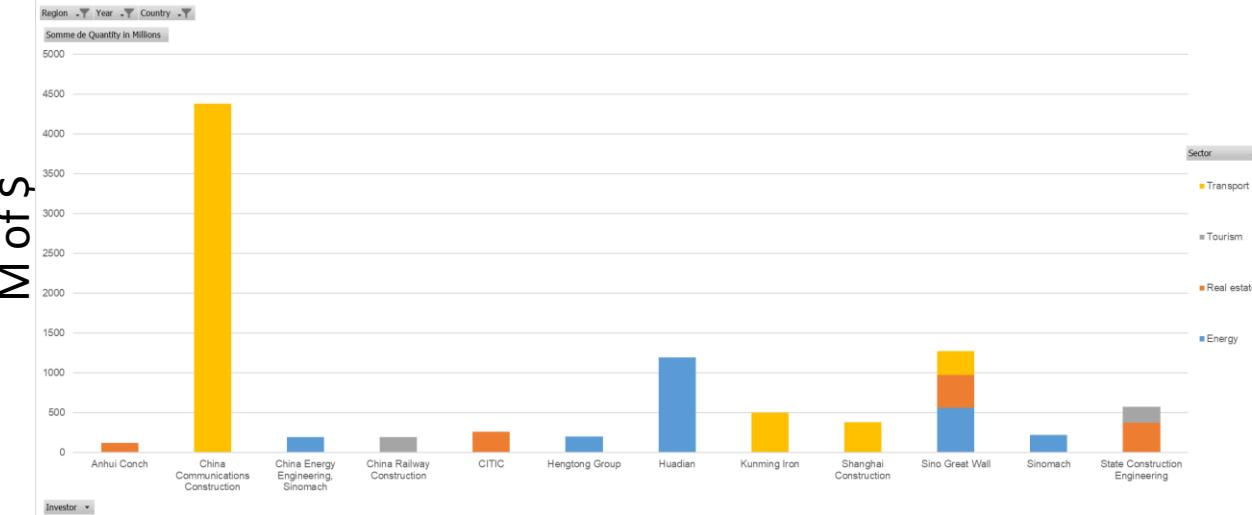
Range : Urban sectors between 2015 and 2019 (Investments and Construction)

2/ CAMBODIA

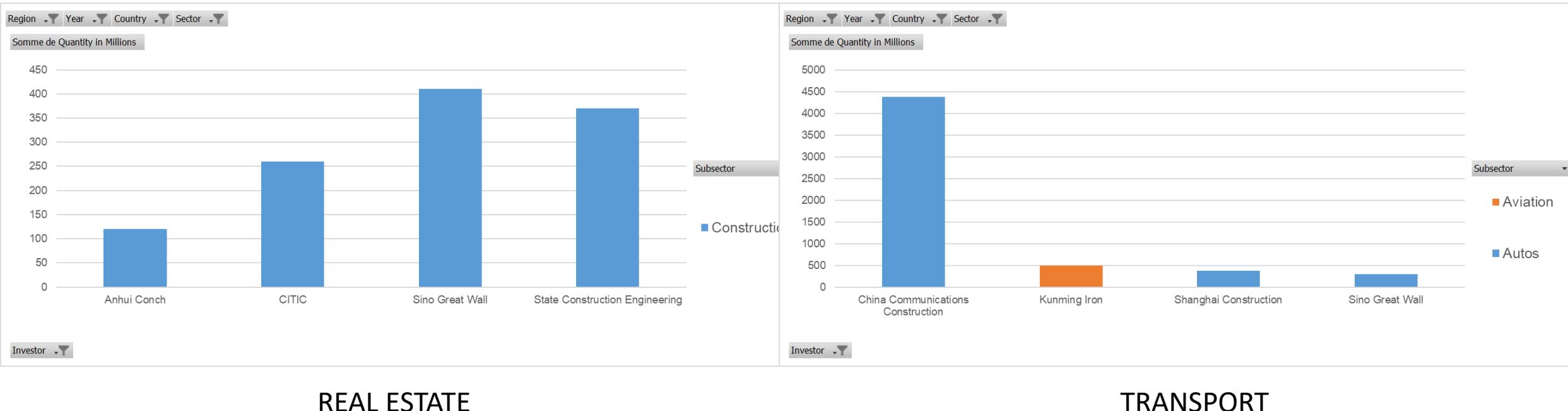
Investments per investors, per sector in CAMBODIA



- The **vast majority** of chinese investors in CAMBODIA are **State owned companies**
 - Investors with the most projects and money spend are known for **investing in many countries in SEA**
 - We can see the scheme of investments for developing countries with **Energy** (coal), massive **transport** (roads) and **construction** for real estate.
- Energy and transport investments are both led by one company investing a lot. Real estate is on the other hand more diverse.
- No Property
 - A road project that register in a more global strategy?



Investments per investors, per sector, in Real estate and Transport in CAMBODIA



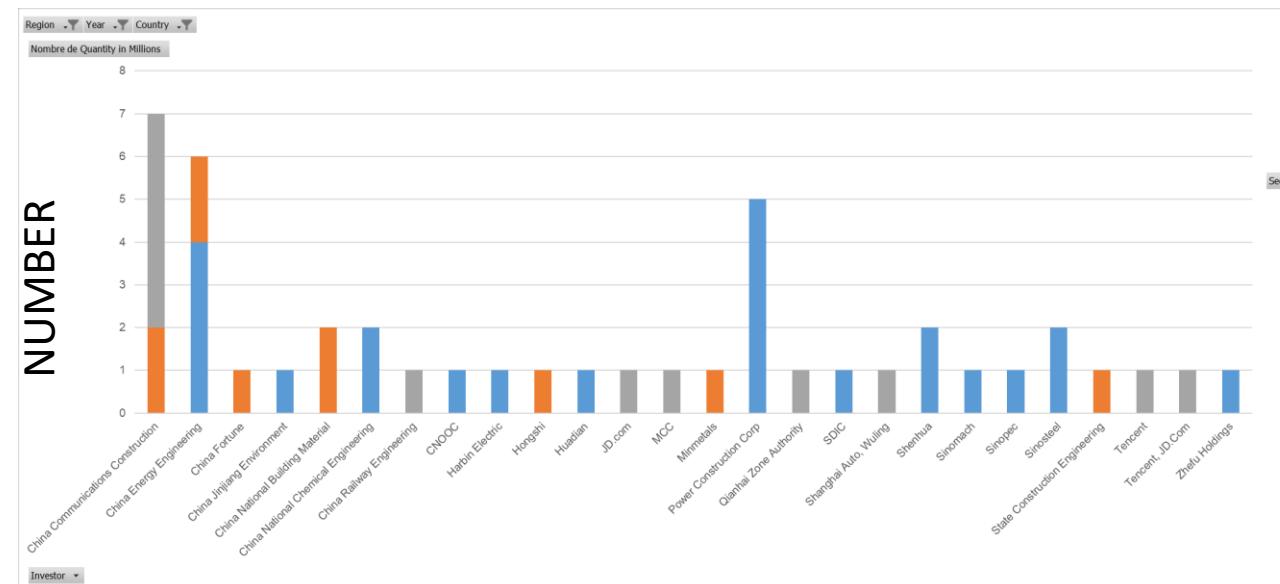
- As we could see, there is only construction in Real estate and almost only auto (probably road infrastructures) in Transport.
- That correspond to the scheme of massive core investments in developing country we straed to realized.

Investors

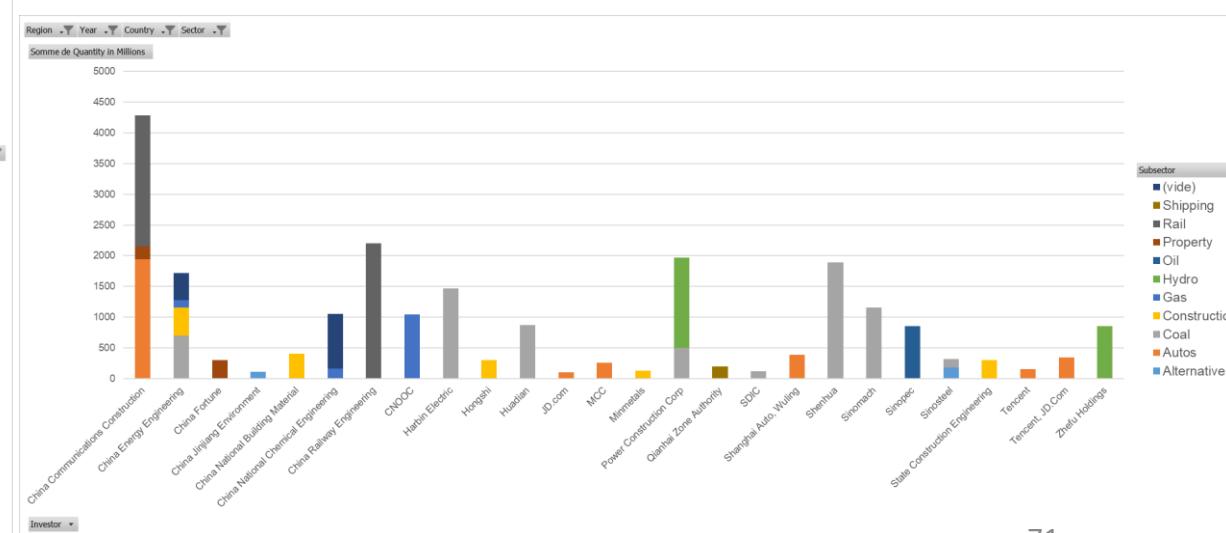
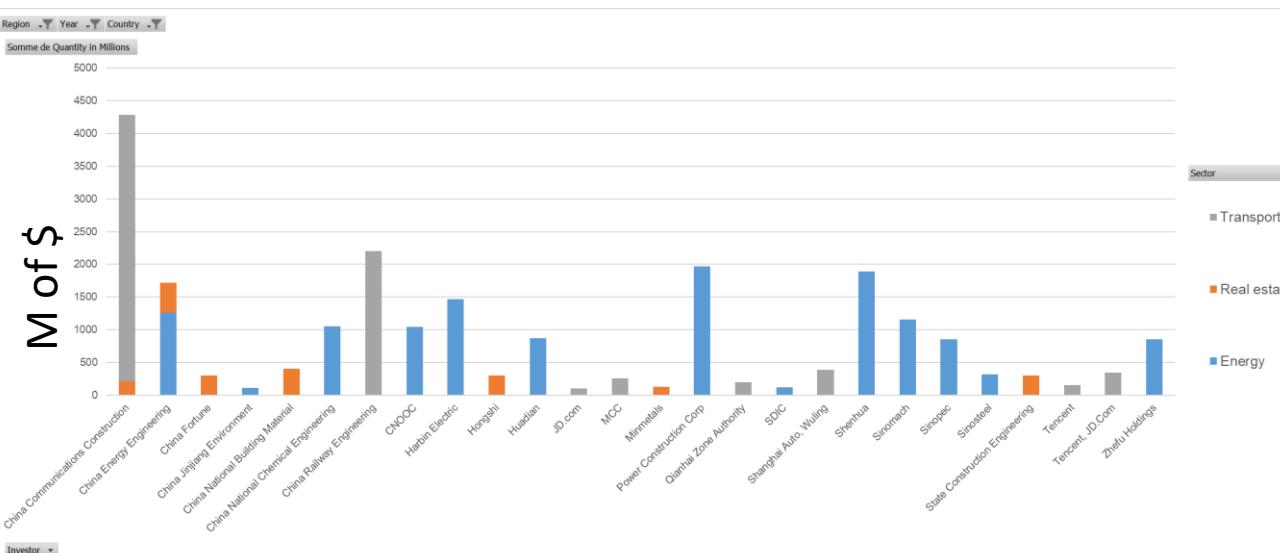
Range : Urban sectors between 2015 and 2019 (Investments and Construction)

2/ INDONESIA

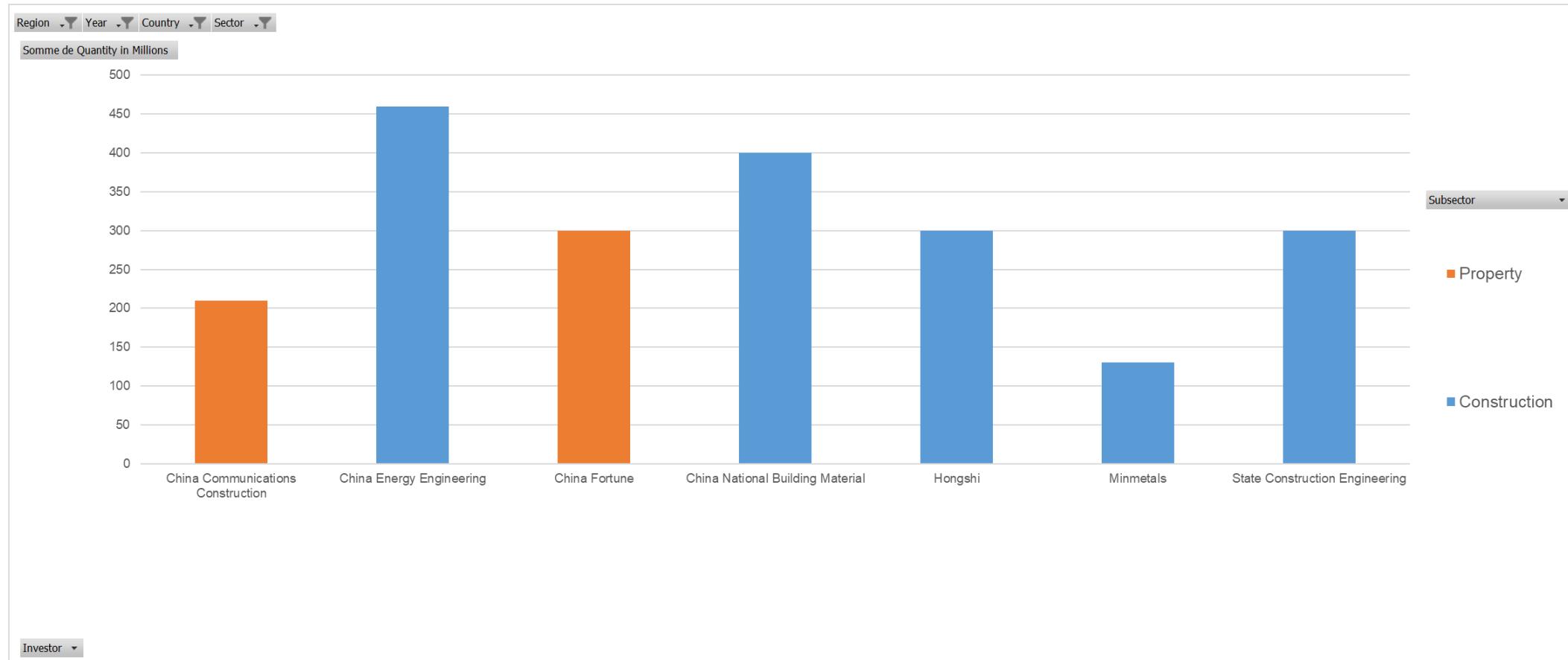
Investments per investors, per sector in INDONESIA



- Same conclusion as before : massive investment in **transport** led by **CCC** for **roads**, with some investment in **rail** this time (**CCC** and **China Railway Engineering**).
- Energy is still massive but investments are splitted between companies (mainly coal and hydro)
- Nothing else than **transport, energy** and **real estate**.
- Most investors invest elsewhere (except maybe **Shenhua** in coal and some companies in hydro and shipping because they are subsectors we don't see often).
- Tencent in transport?

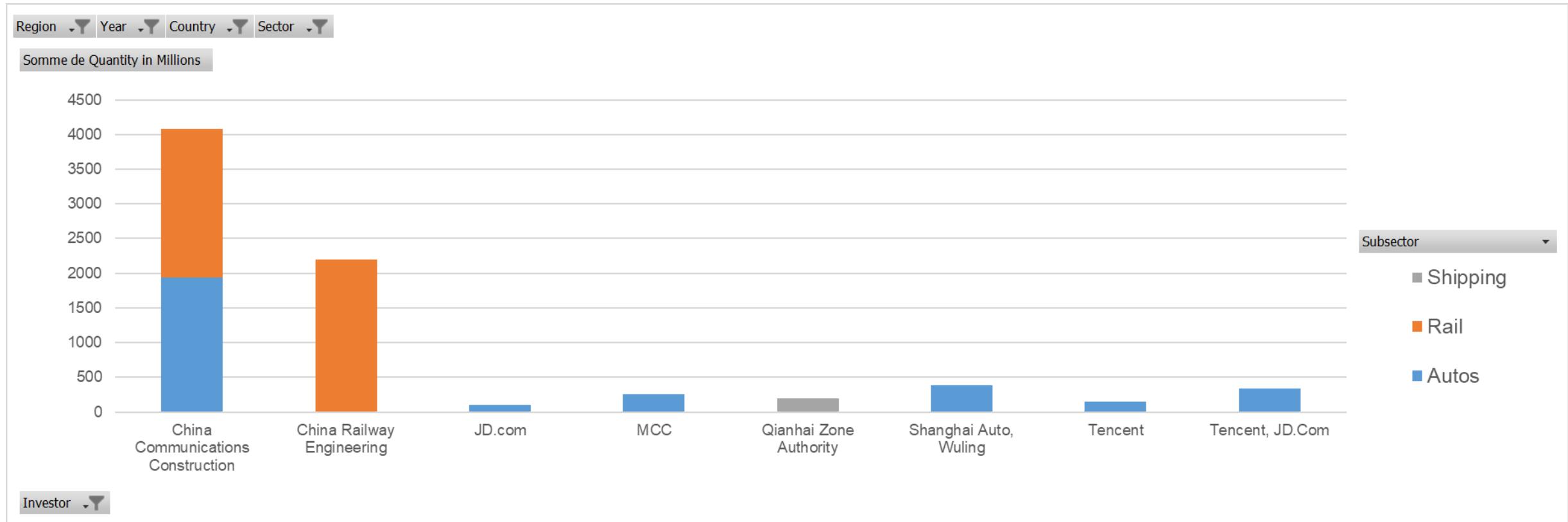


Investments per investors, per sector, in real estate in INDONESIA



- As we could expect with what we have seen so far for developing countries, it is mainly construction investments despite the fact property is not negligible

Investments per investors, per sector, in Transport in INDONESIA



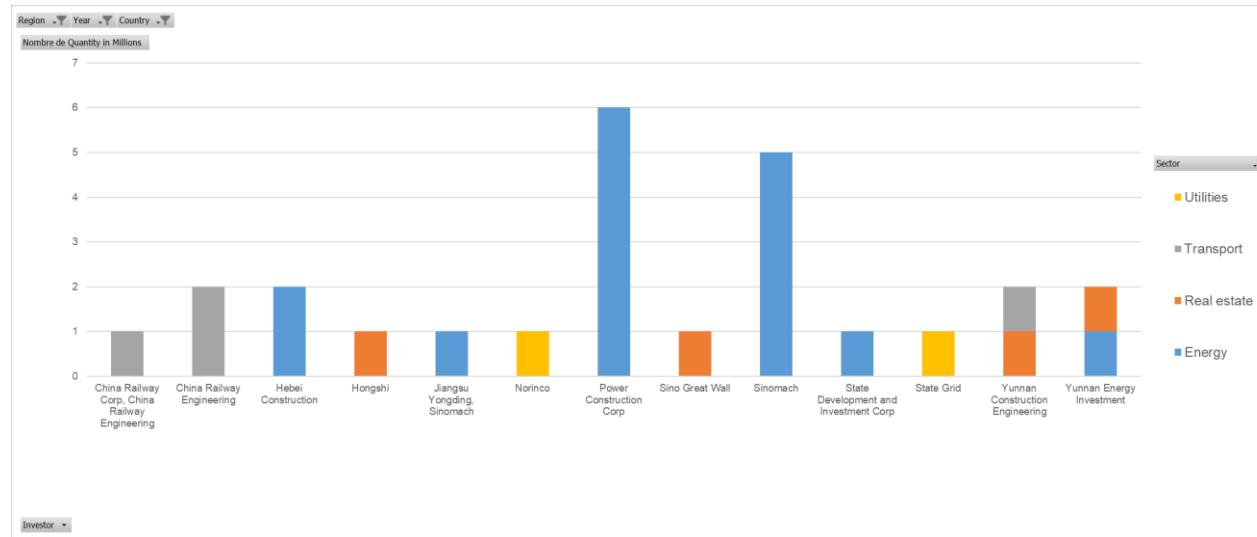
- Dominated by the 2 state owned companies we know, and investing in infrastructures (fully correspond to the scheme)
- Tencent is probably investing on smart buses

Investors

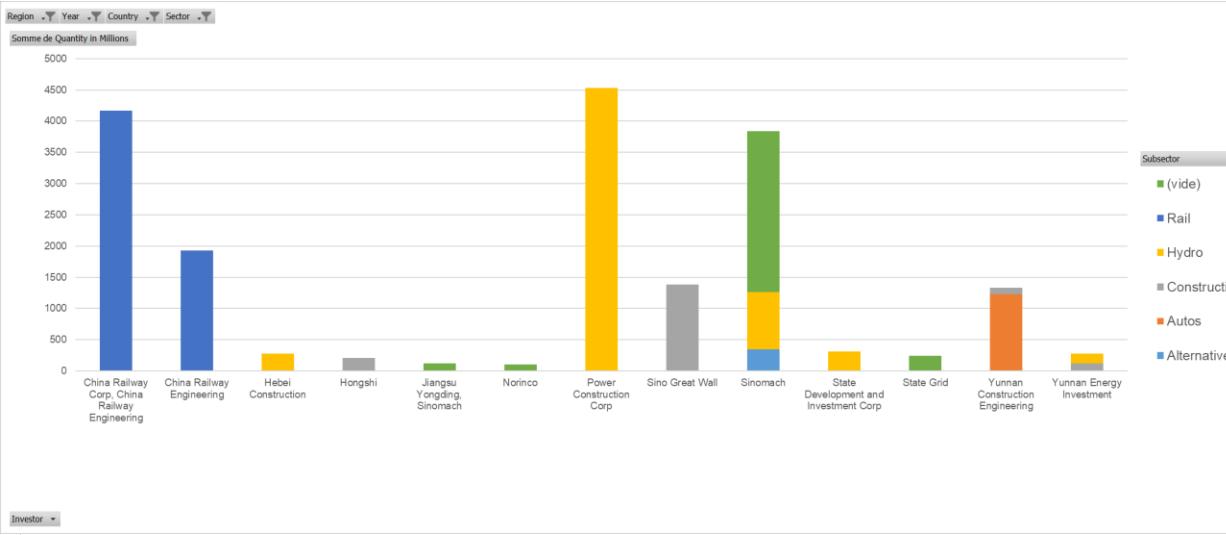
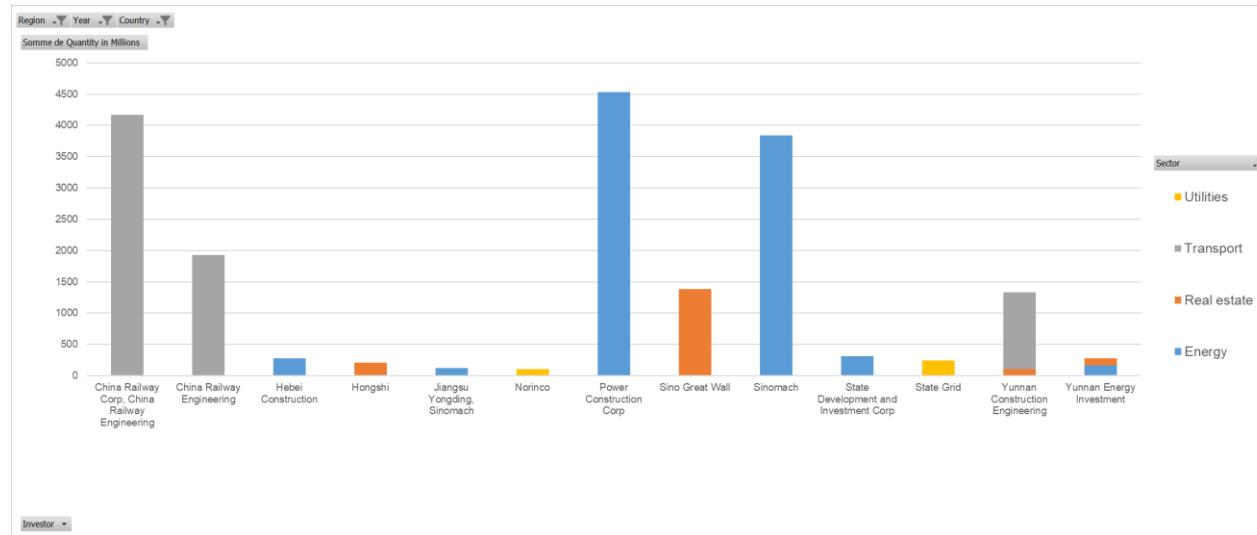
Range : Urban sectors between 2015 and 2019 (Investments and Construction)

3/ LAOS

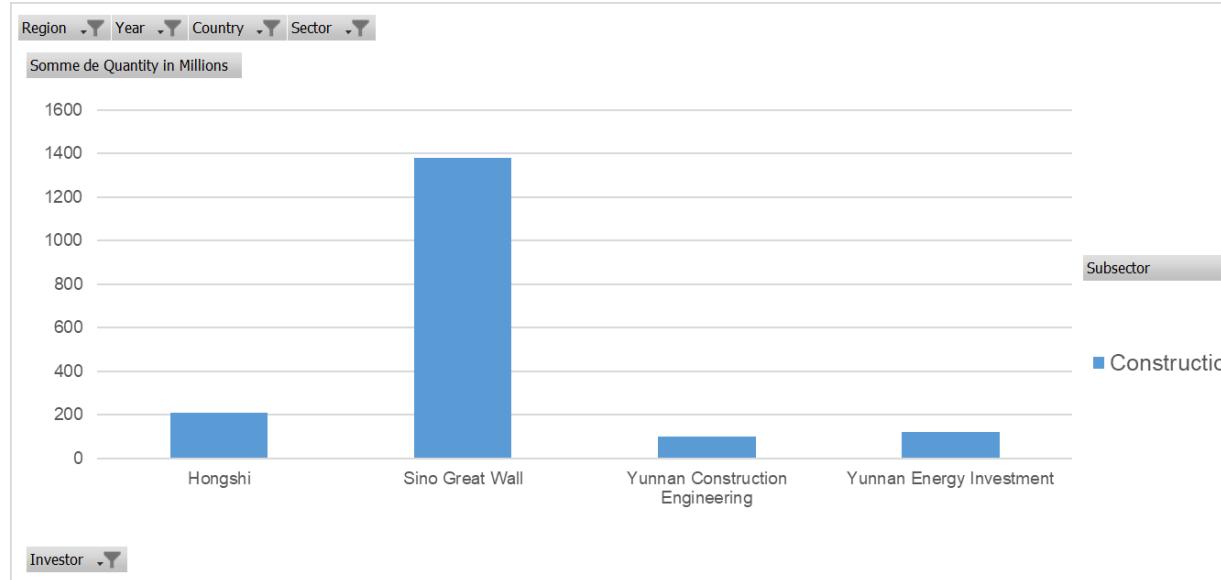
Investments per investors, per sector in LAOS



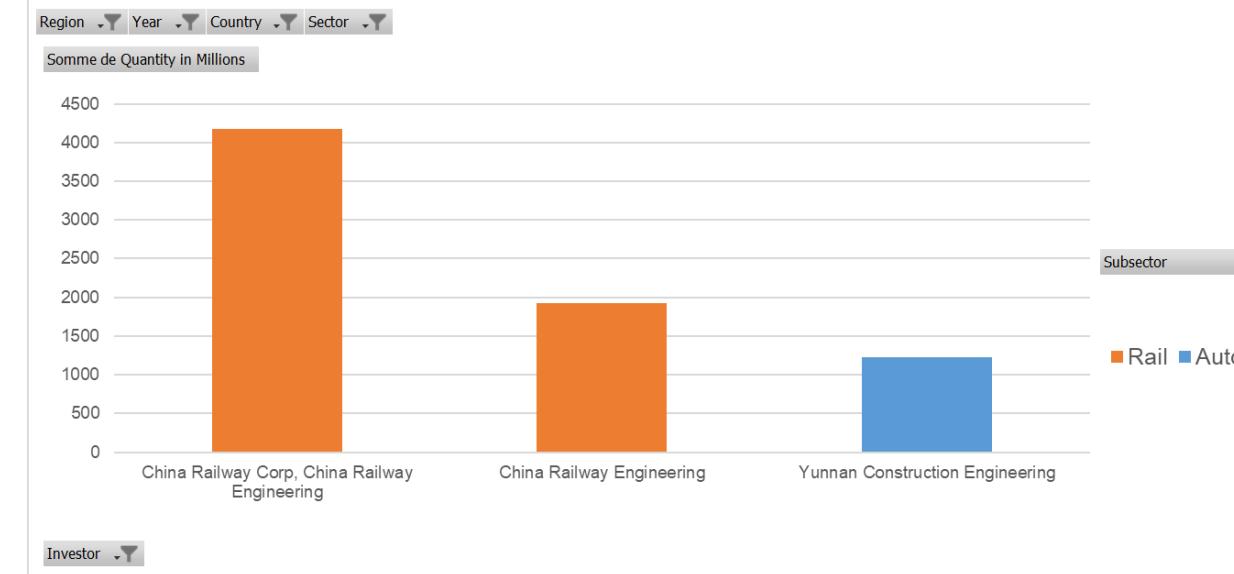
- LAOS still follow the same scheme for developing countries with massive investments coming from state owned companies in **hydropower** and **rail**.
- There is no property, every investment in real estate concerns construction.
- Non state owned** companies are concentrated around **Real estate**.



Investments per investors, per sector, in Real estate and Transport in LAOS



REAL ESTATE



TRANSPORT

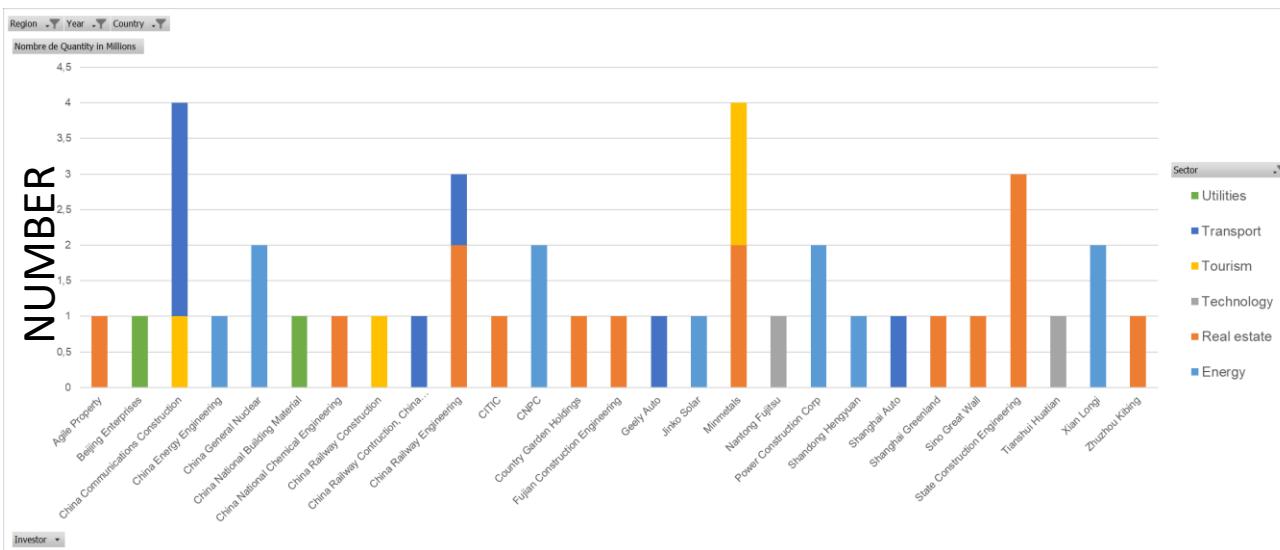
- Once again it perfectly fit what we can expect from a developing country.
- The focus in transport is made around train rather than auto

Investors

Range : Urban sectors between 2015 and 2019 (Investments and Construction)

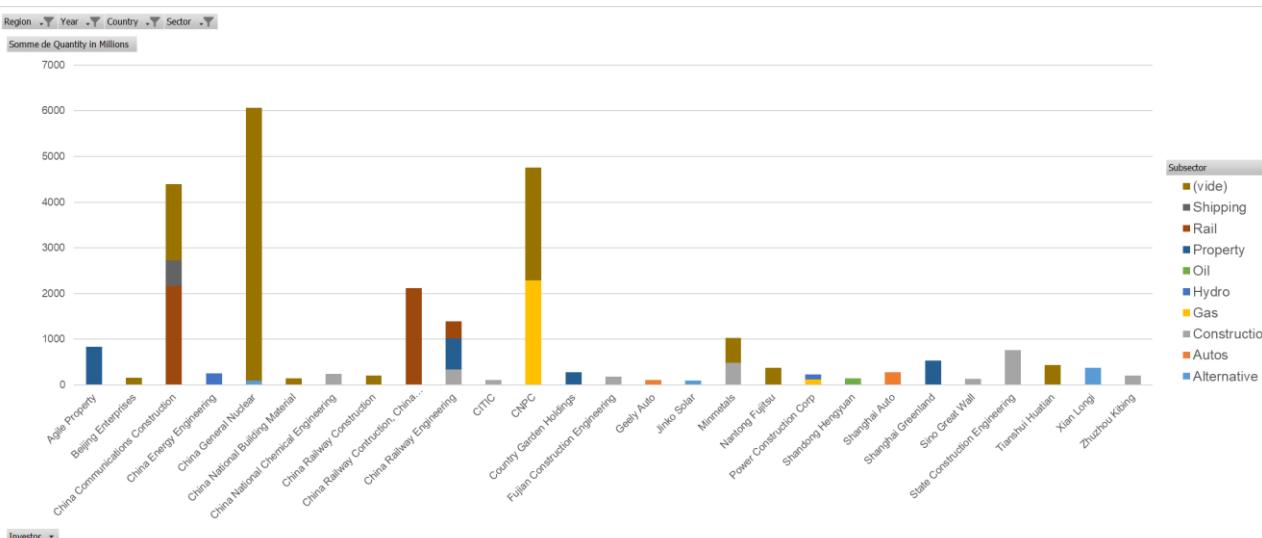
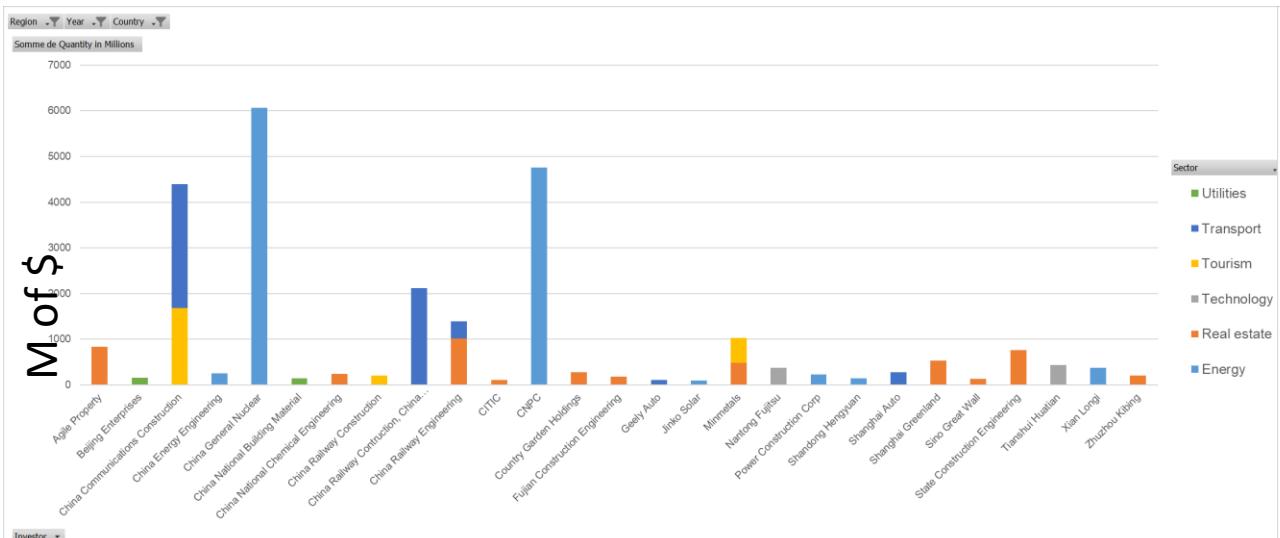
4/ MALAYSIA

Investments per investors, per sector in MALAYSIA

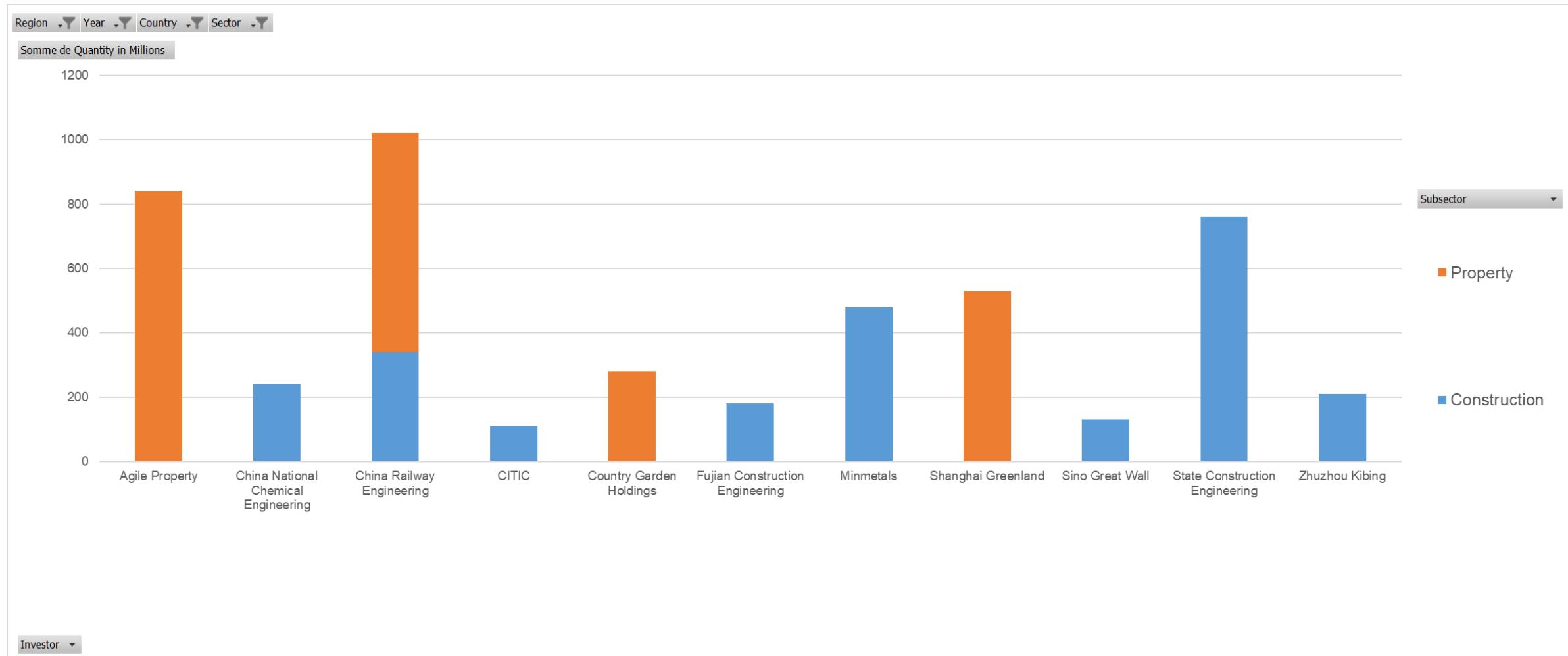


!/\ scale : some low peak can have great value compared to other countries

- MALAYSIA still follow the same scheme for developing countries with massive investments coming from state owned companies in **nuclear, gas and rail**.
- We can see there is a lot of different investors and some property which MALAYSIA will engage a transition from developing to developed country (in terms what kind of investments are made).

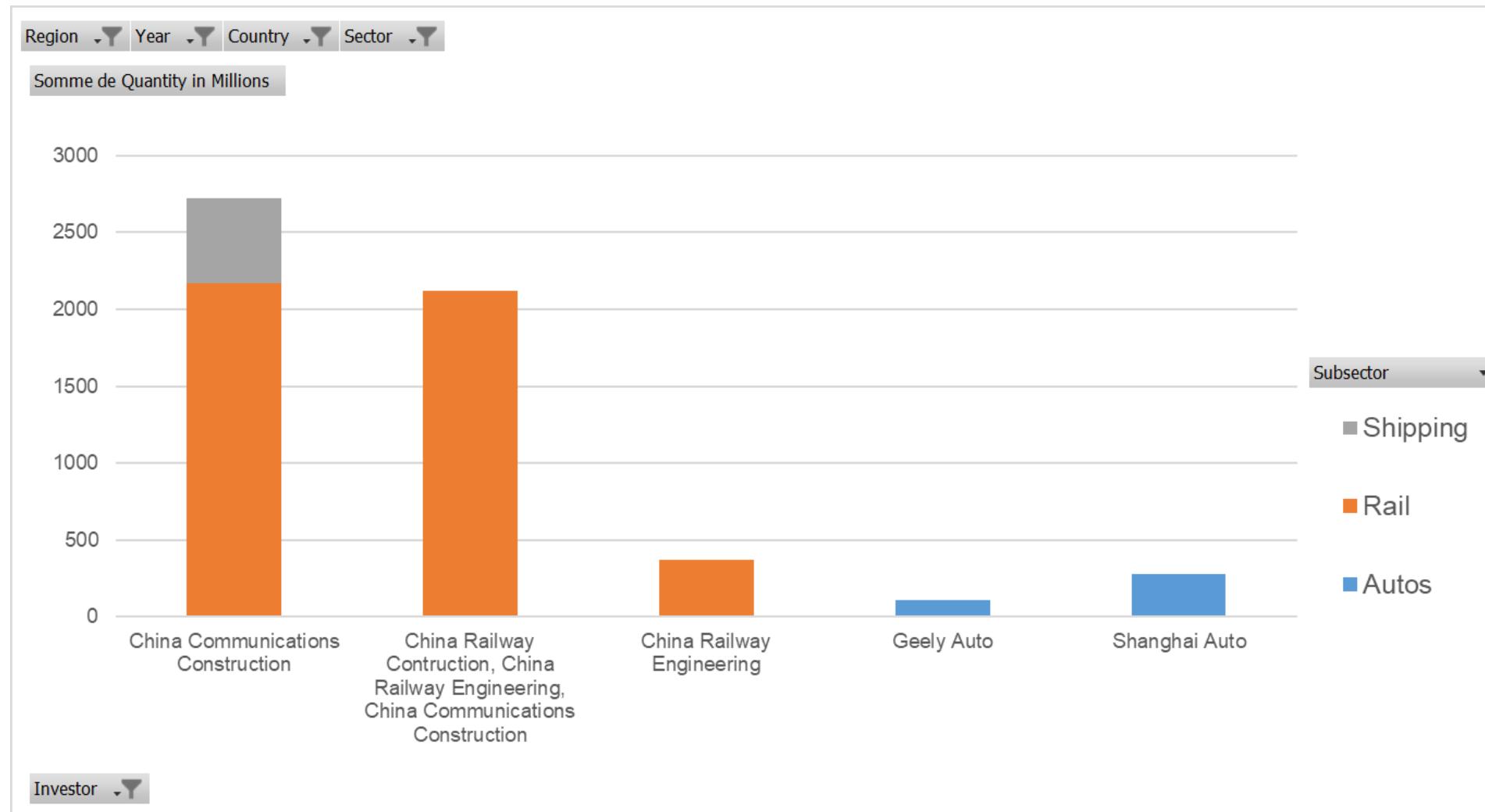


Investments per investors, per sector, in real estate in MALAYSIA



- We can see more clearly property is a thing in MALAYSIA and led by public companies (on stock market), while construction is still led by state owned companies

Investments per investors, per sector, in real estate in MALAYSIA



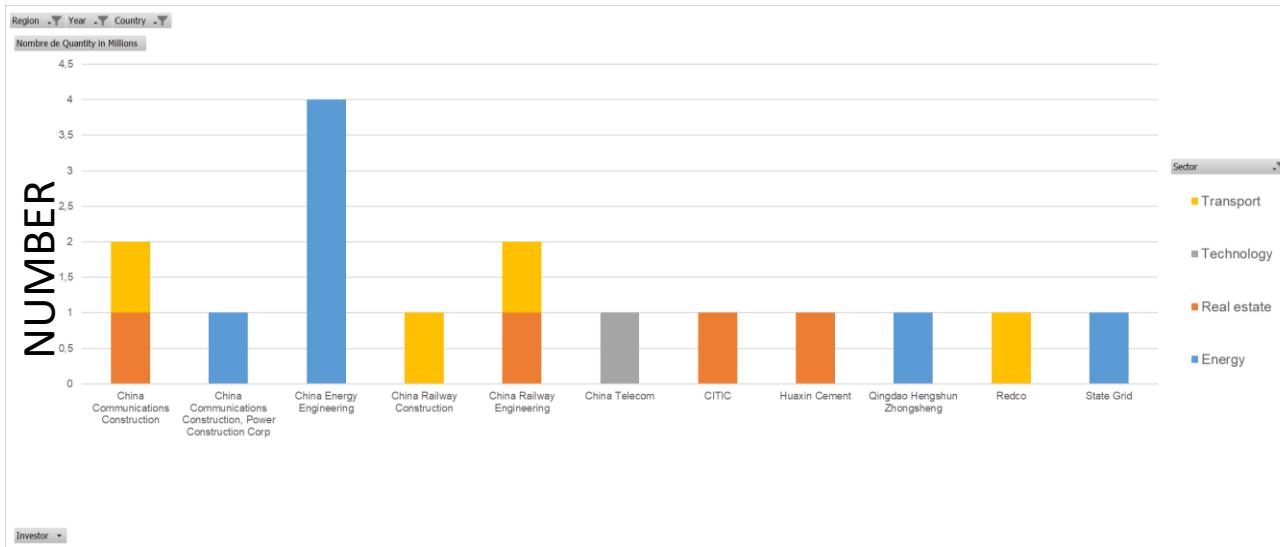
- Here Rail is way dominant with such a massive amount of money from chinese state owned companies.

Investors

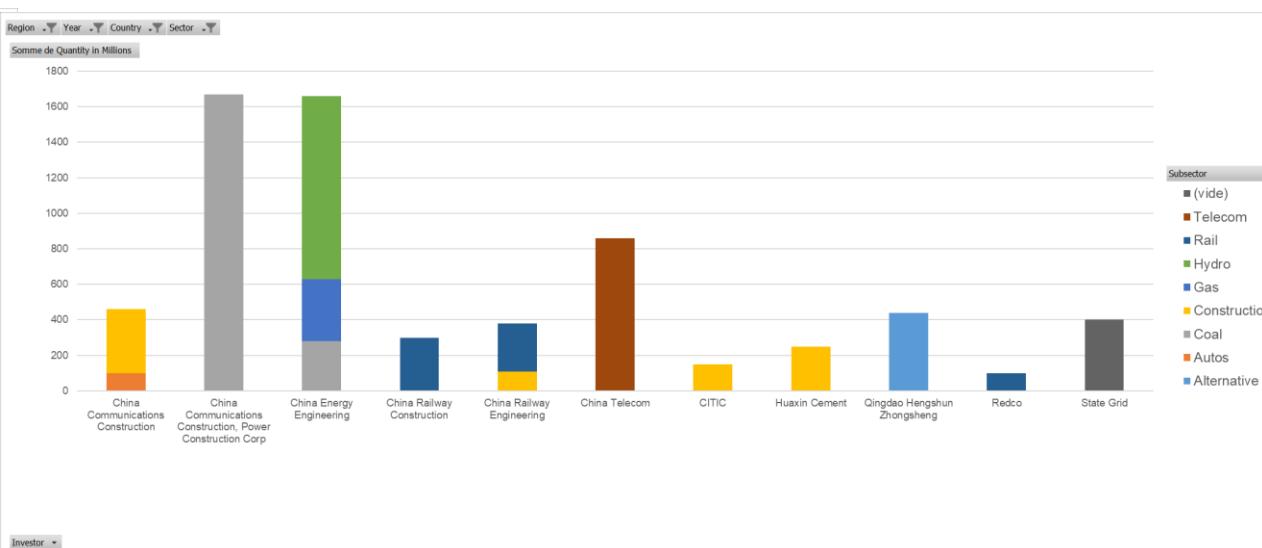
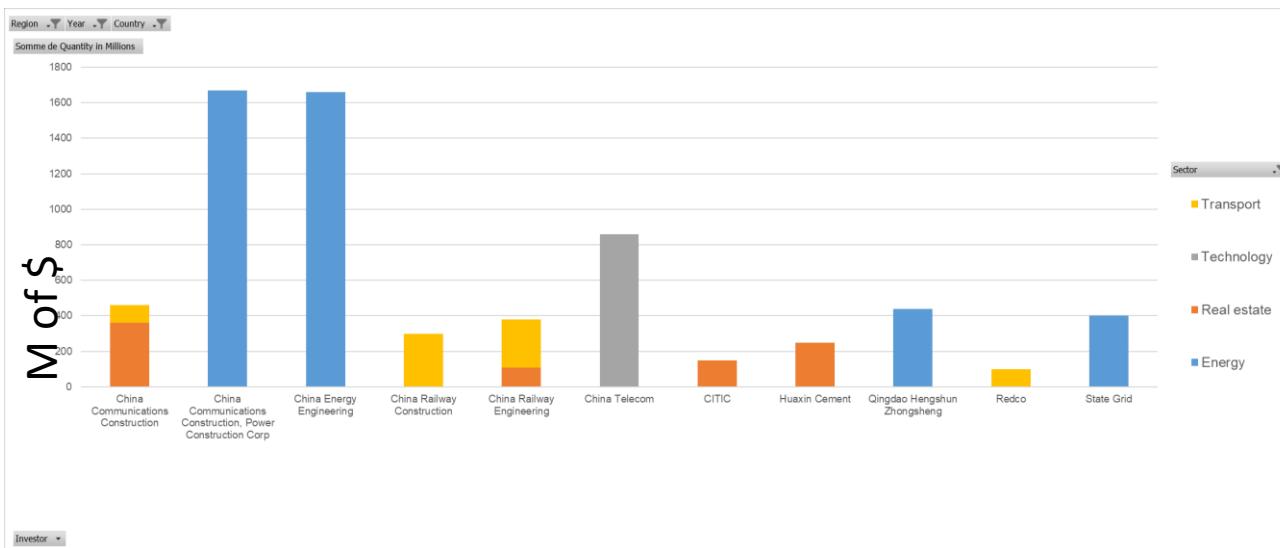
range : Urban sectors between 2015 and 2019 (Investments and Construction)

5/ Philippines

Investments per investors, per sector in Philippines



- Philippines have all the characteristics of a developing country such as INDONESIA or CAMBODIA in terms of investments. Philippines are just **late** in a sense as there are just fewer investments and **no huge investment in transport** that carry the overall sum.
- Only construction in Real estate
- There is an important investment from China Telecom we haven't seen in other countries => **what could it be?**



Investments per investors, per sector, in Real estate and Transport in PHILIPPINES



- Only construction and focused in rail (infrastructure probably)
- Follow the scheme of developing countries but amounts are lower (less massive would be more appropriate)

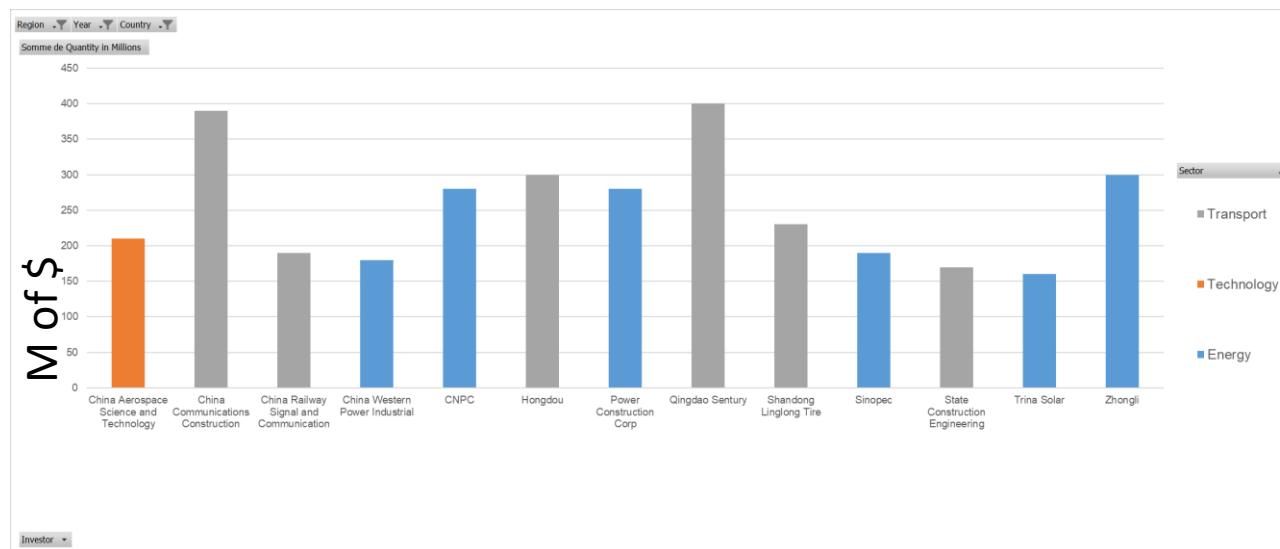
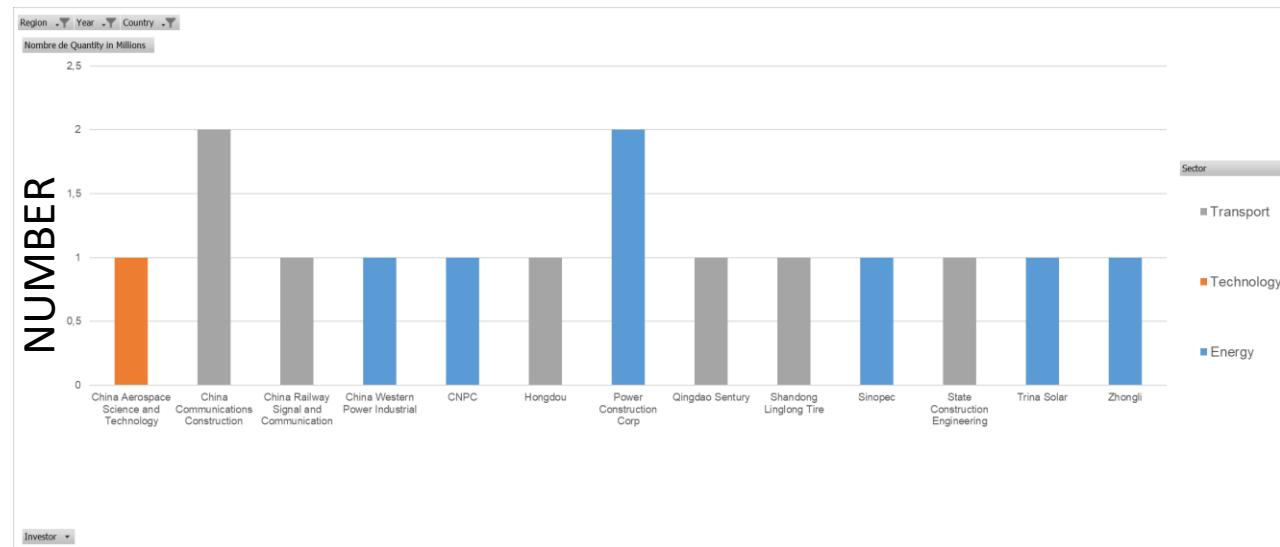
Investors

range : Urban sectors between 2015 and 2019 (Investments and Construction)

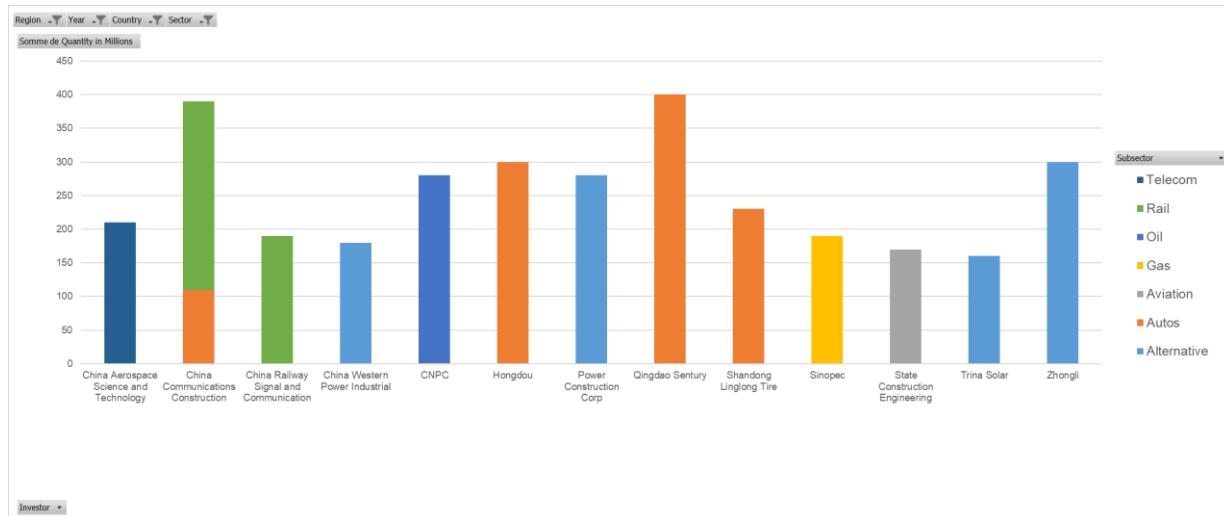
6/ THAILAND

Investments per investors, per sector in THAILAND

! scale : some high peak can have low value compared to other countries



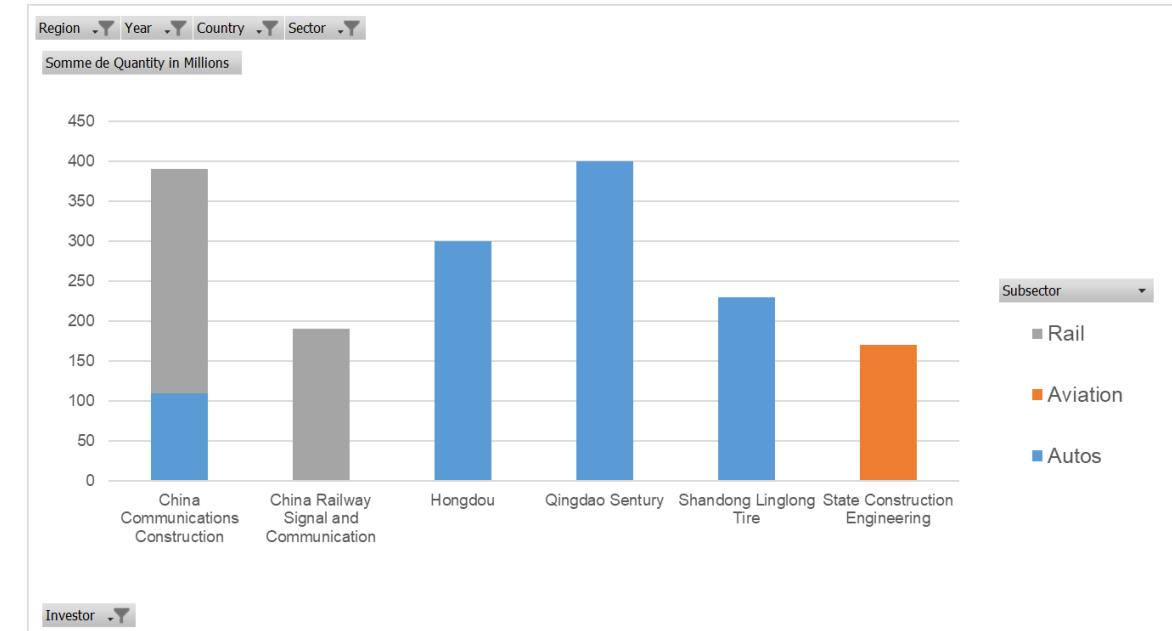
- Like Philippines, sectors of investments are close to attractive developing countries but it lacks some investors and big investment (no company above 500 Millions \$).
- Rail investments are made by state owned companies while **road** investments are made by **non estate owned companies** (which is different to many other countries)
- There is also massive investment in alternatives by both (non) state owned companies
- There is no real estate at all (construction or property).



Investments per investors, per sector, in Real estate and Transport in THAILAND

- No data on real estate (probably because of smaller and more discrete investments) ?

REAL ESTATE



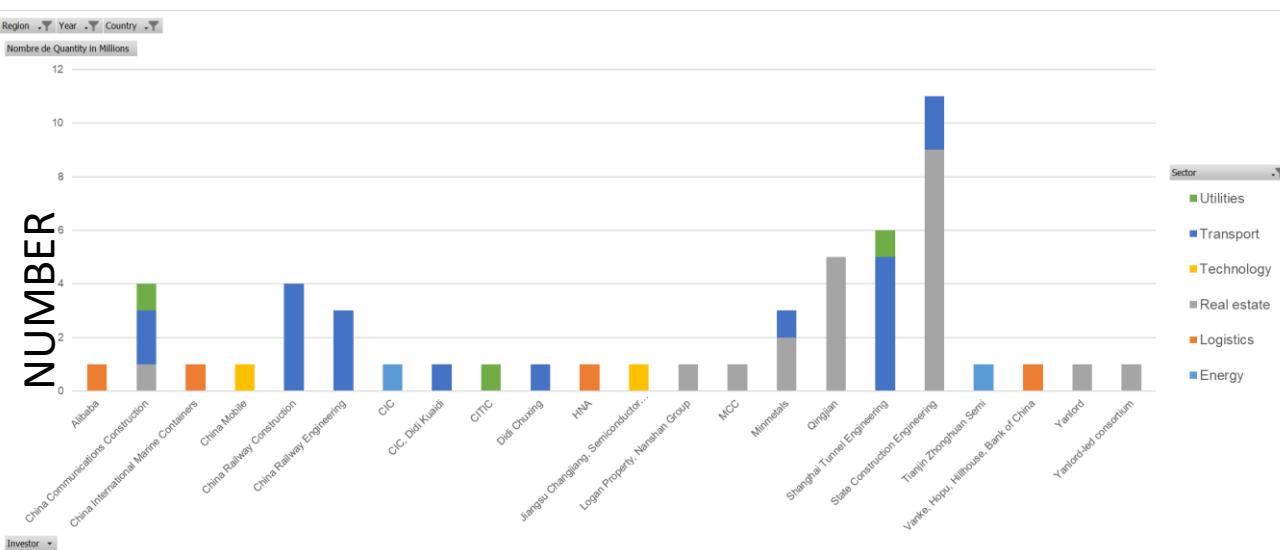
TRANSPORT

Investors

range : Urban sectors between 2015 and 2019 (Investments and Construction)

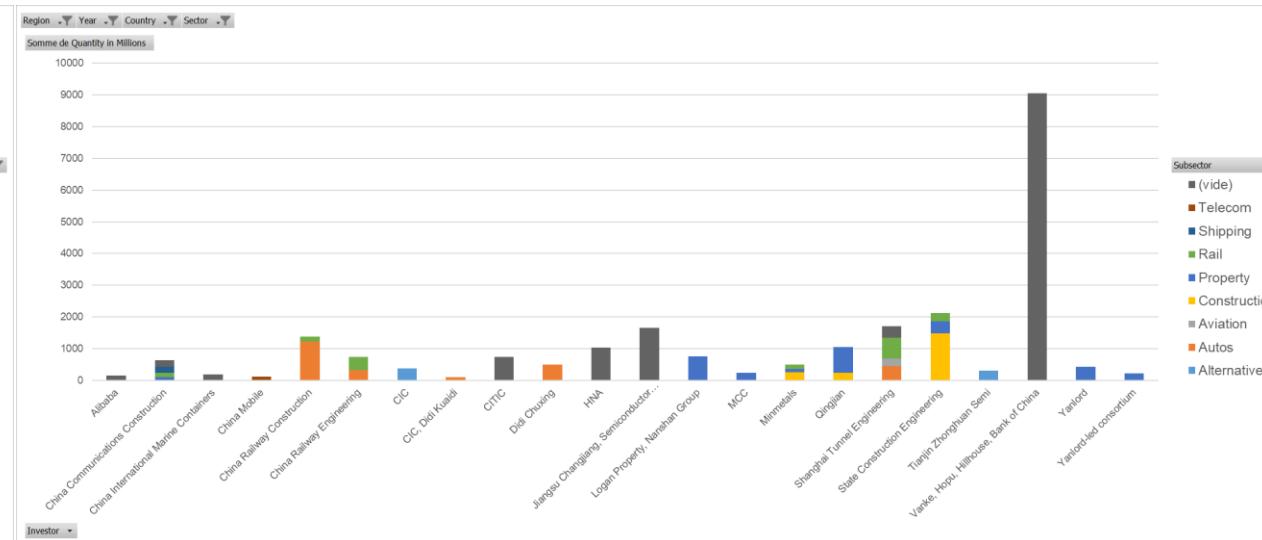
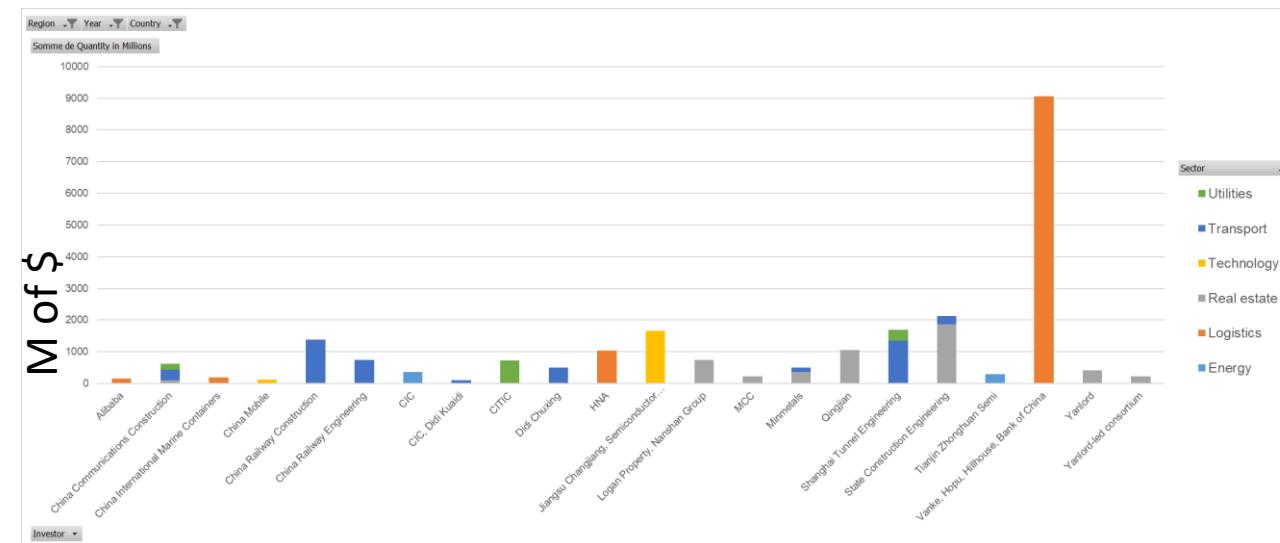
7/ SINGAPORE

Investments per investors, per sector in SINGAPORE

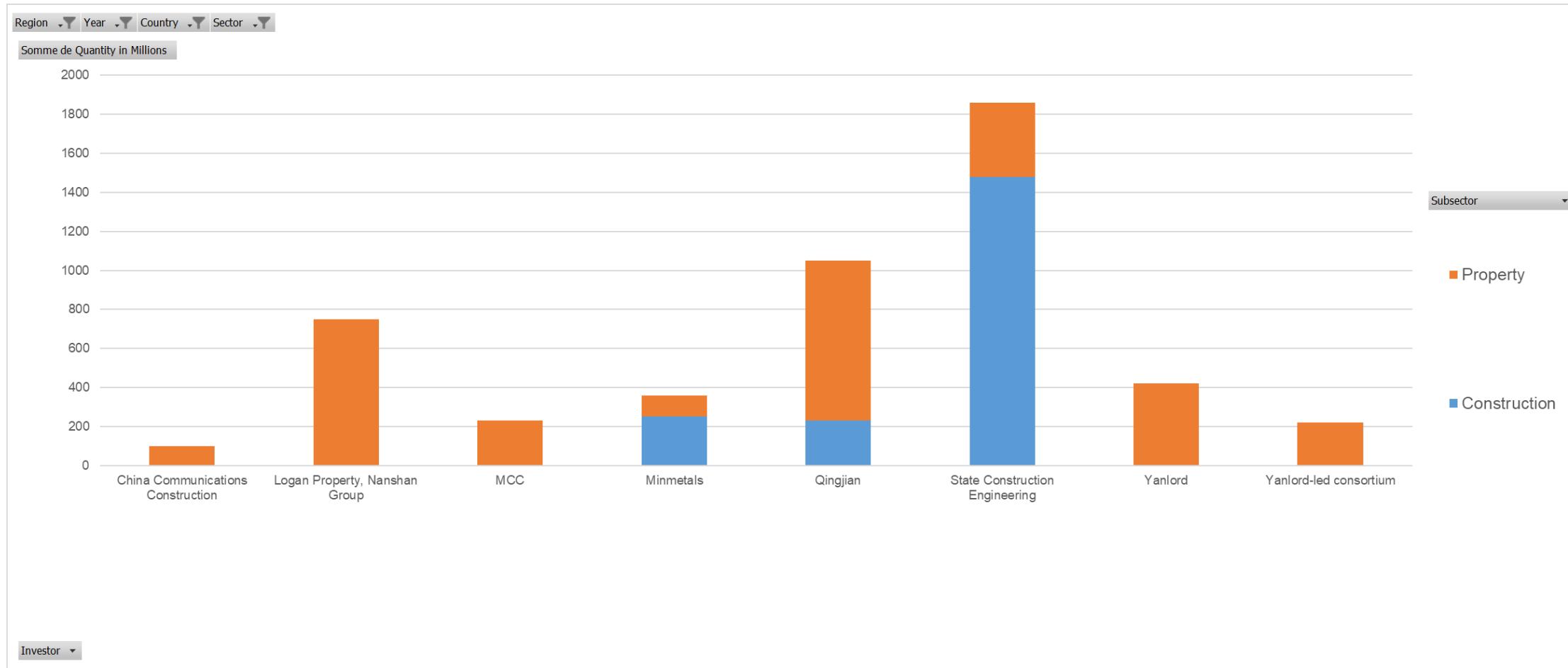


!/\ scale : some low peak can have great value compared to other countries

- We saw SINGAPORE had some Chinese investors that only invested there (in all SEA). It is confirmed by all the company names we haven't seen yet.
- There is a gigantic investment in logistics (in 2017) => What could it be ?
- Real estate, technology are as much if not more important than transport and energy which is something we see on developed country such as Japan and SOUTH KOREA.



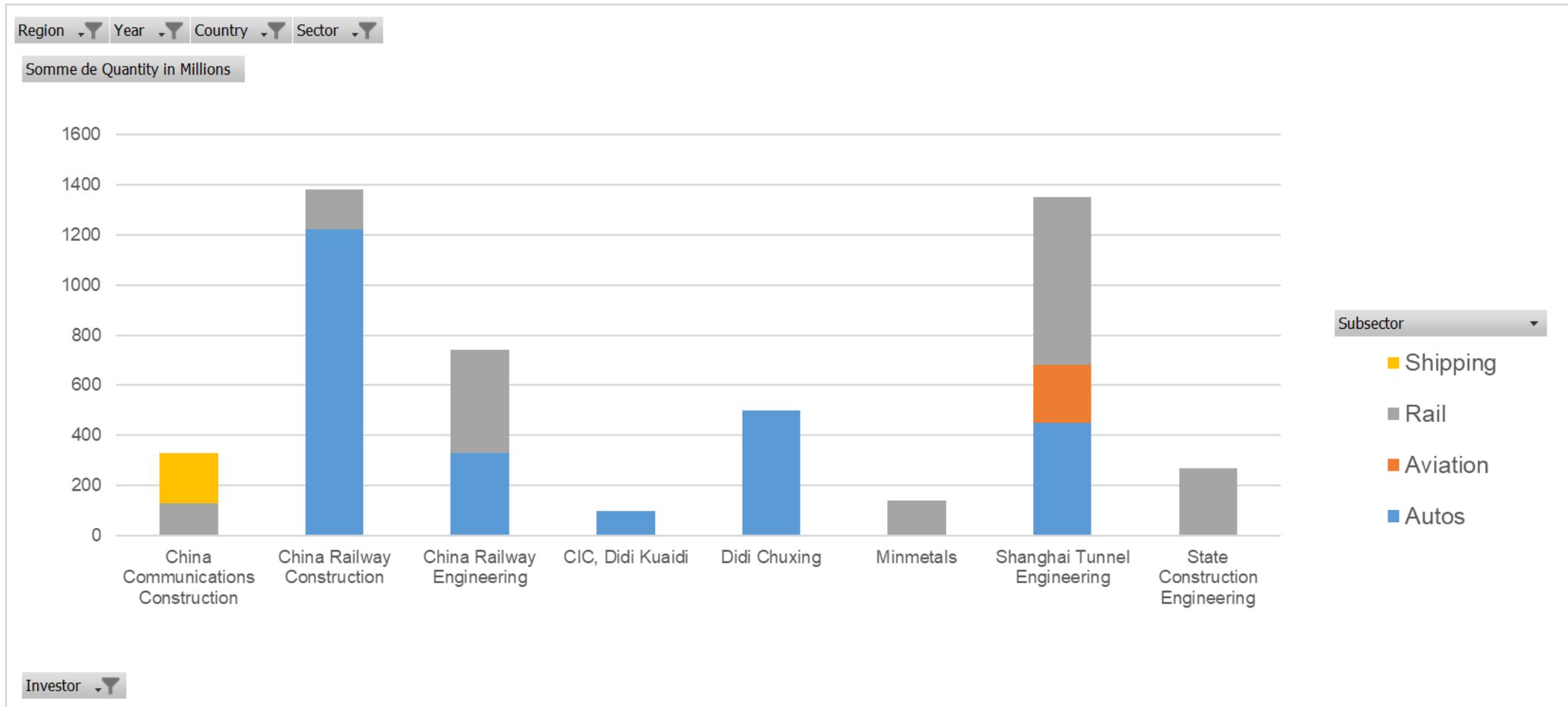
Investments per investors, per sector, in real estate in SINGAPORE



- Qingjian was an state owned company until 2015 (before our scope). Now it is private as logan property and yanlord which means property is not a sector led by state owned companies, while its still the case for construction (a logic that seems to be verified in a lot of countries that have property).

In general we see that private companies tend to be different in every countries except some exceptions while state owned companies are massive and everywhere.

Investments per investors, per sector, in Transport in SINGAPORE



Here we can clearly see state owned companies on big infrasctructure investments while services are let to private / public companies like Didi (car tourism rental)

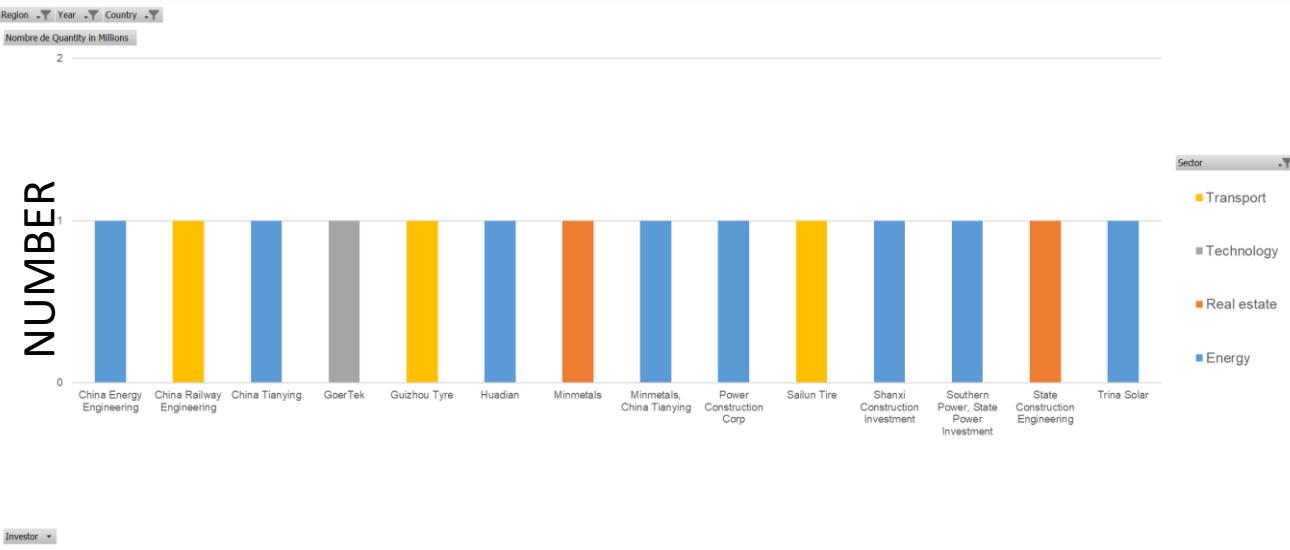
Investors

range : Urban sectors between 2015 and 2019 (Investments and Construction)

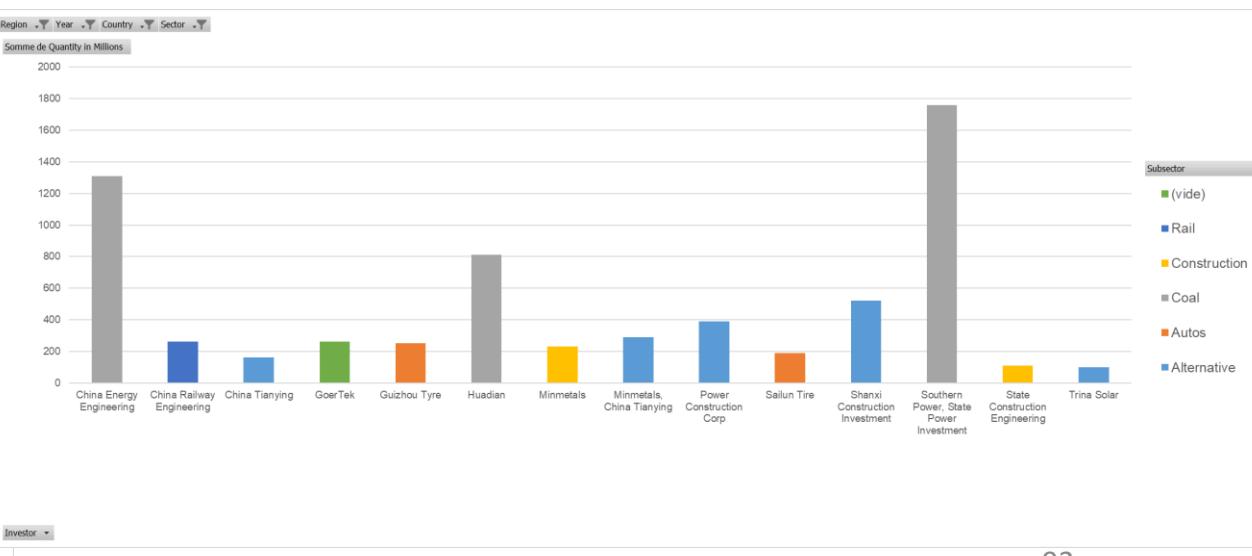
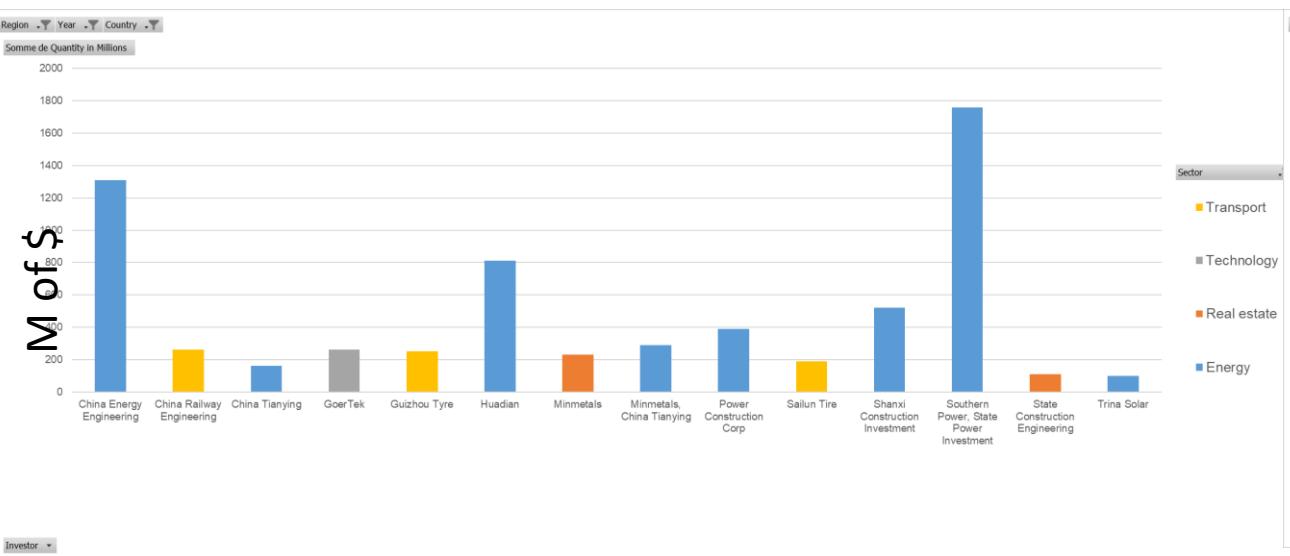
8/ VIETNAM

Investments per investors, per sector in VIETNAM

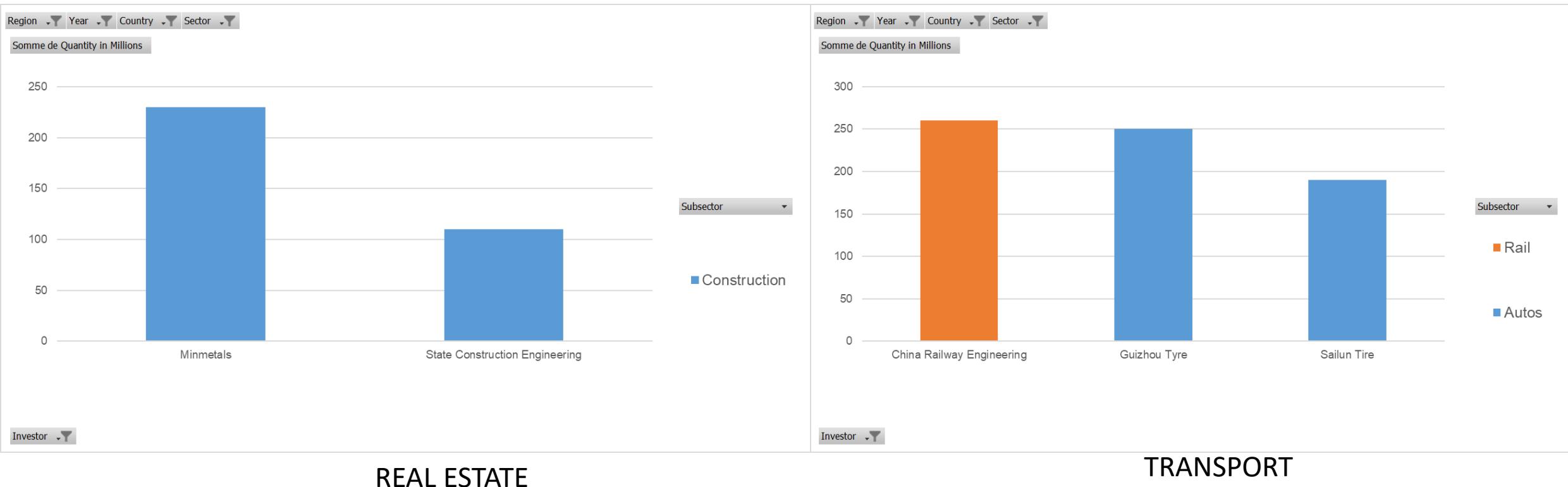
!/\ scale : some high peak can have low value compared to other countries



- VIETNAM was out point of comparison as for political reasons it used to be a country where China does not invest a lot.
- It is quite confirmed there. It has a behaviour close to THAILAND with very few investments but close to developing countries. Indeed energy and transport are important and there is no property.
- It lacks a gigantic investment in transport compared to other developing countries and there is an import part of the investments that goes in alternatives, like in THAILAND.



Investments per investors, per sector, in Real estate and Transport in VIETNAM



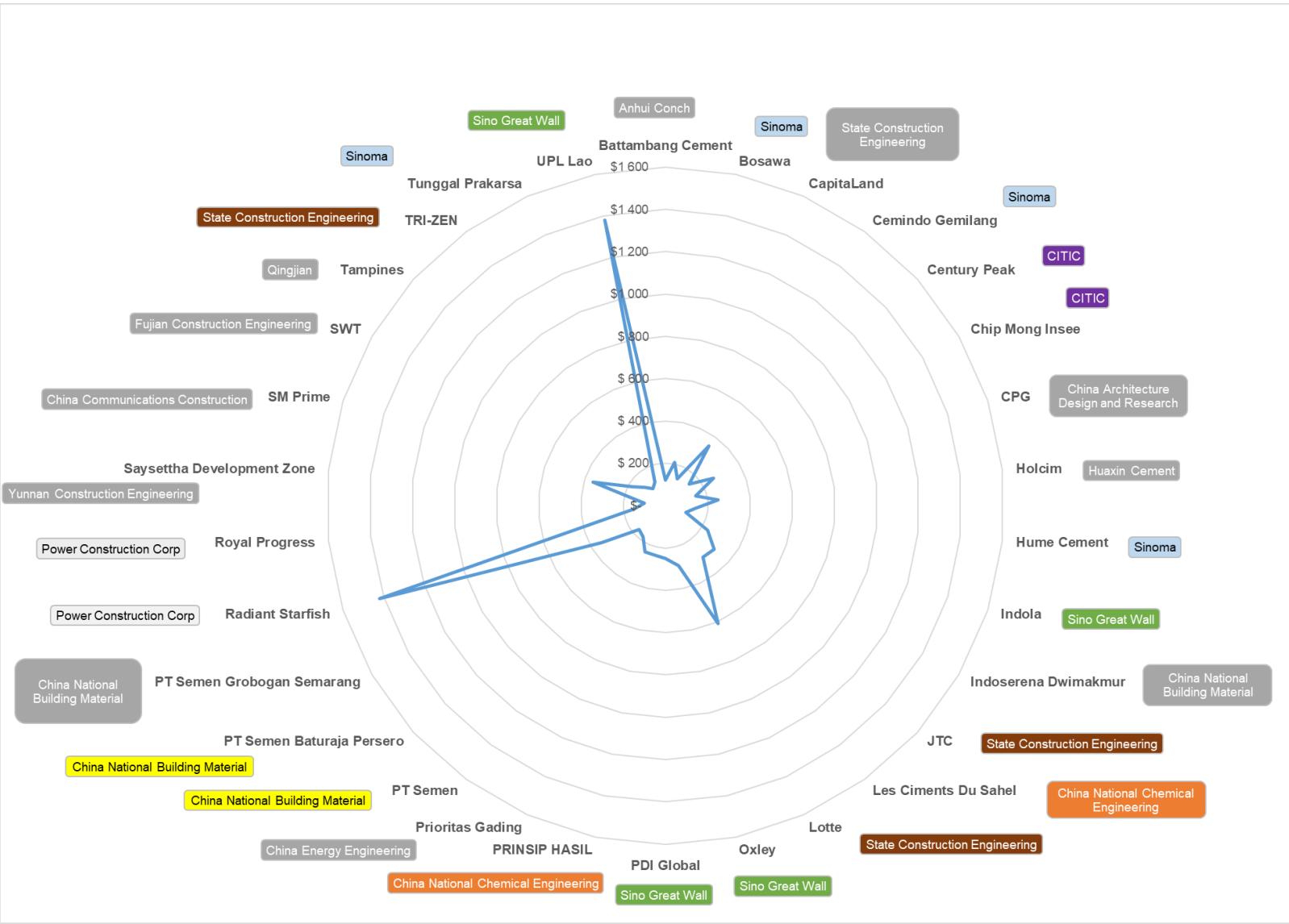
- Same as Thailand : fewer and lower investment, while corresponding to the developing country scheme in terms of type of investments
- Probably a lack of information on smaller investments but at least we can say there fewer massive project than in INDONESIA, CAMBODIA, LAOS or MALAYSIA

Part 6: Transaction party

range : **Real Estate** 2005 and 2020 (Investments and Construction)

39% of the investments involved have a transaction party

Investments per Transaction party, per investor, in construction



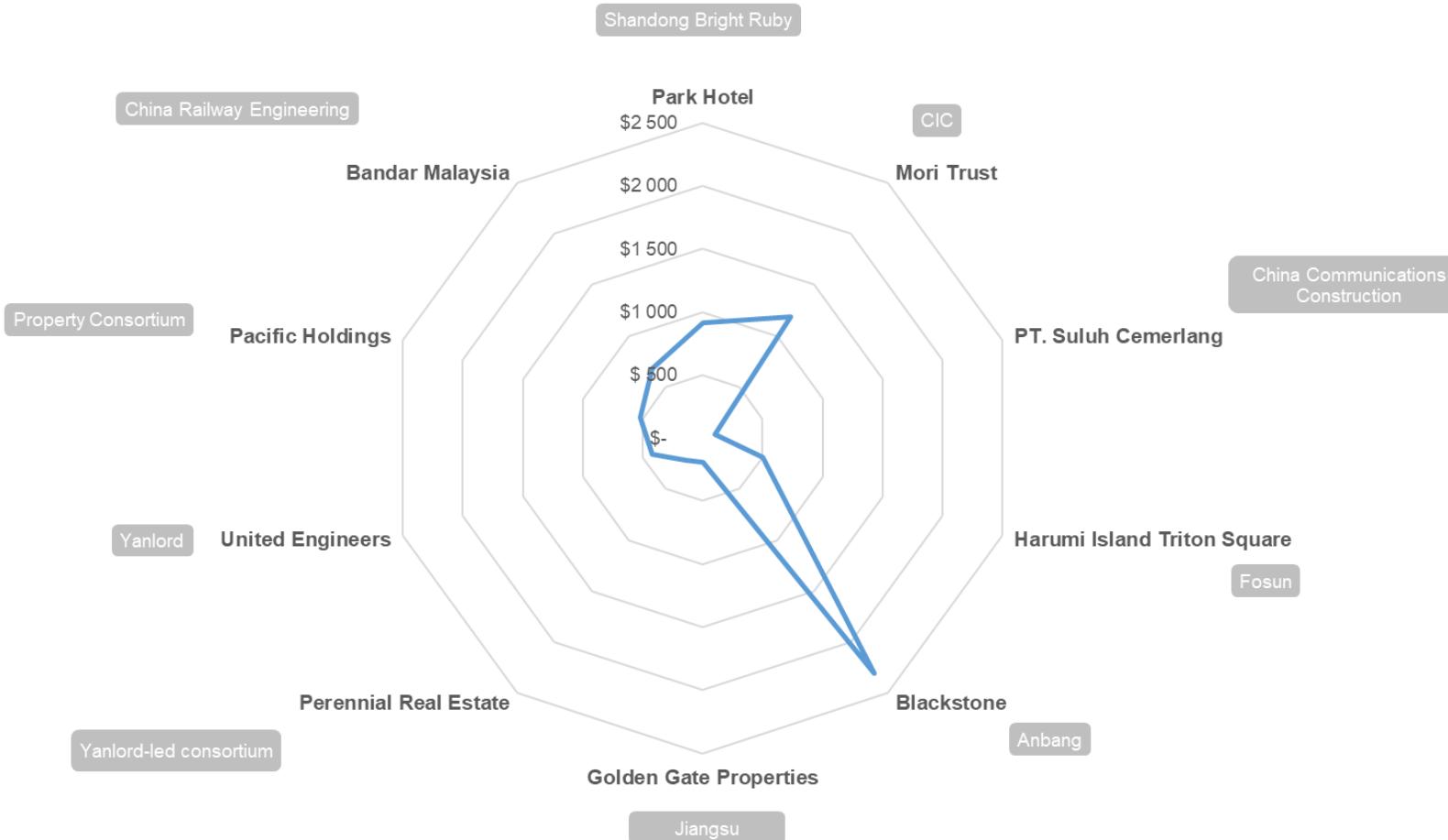
- We can see that **every investment as a different transaction party (when there is one)**.
- Even companies that make multiple investment change their transaction company everytime (except State construction Engineering that worked with JTC twice).
- There is no Transaction party that work for with multiple companies => something really specific to the project?
- China National Building Material seems to work for different but close transaction parties (start with « PT » ...).

!/\ legend :

framed texts are *investors*, color help seeing the same ones.

Non framed texts are *Transaction parties*.

Investments per Transaction party, per investor, in Property



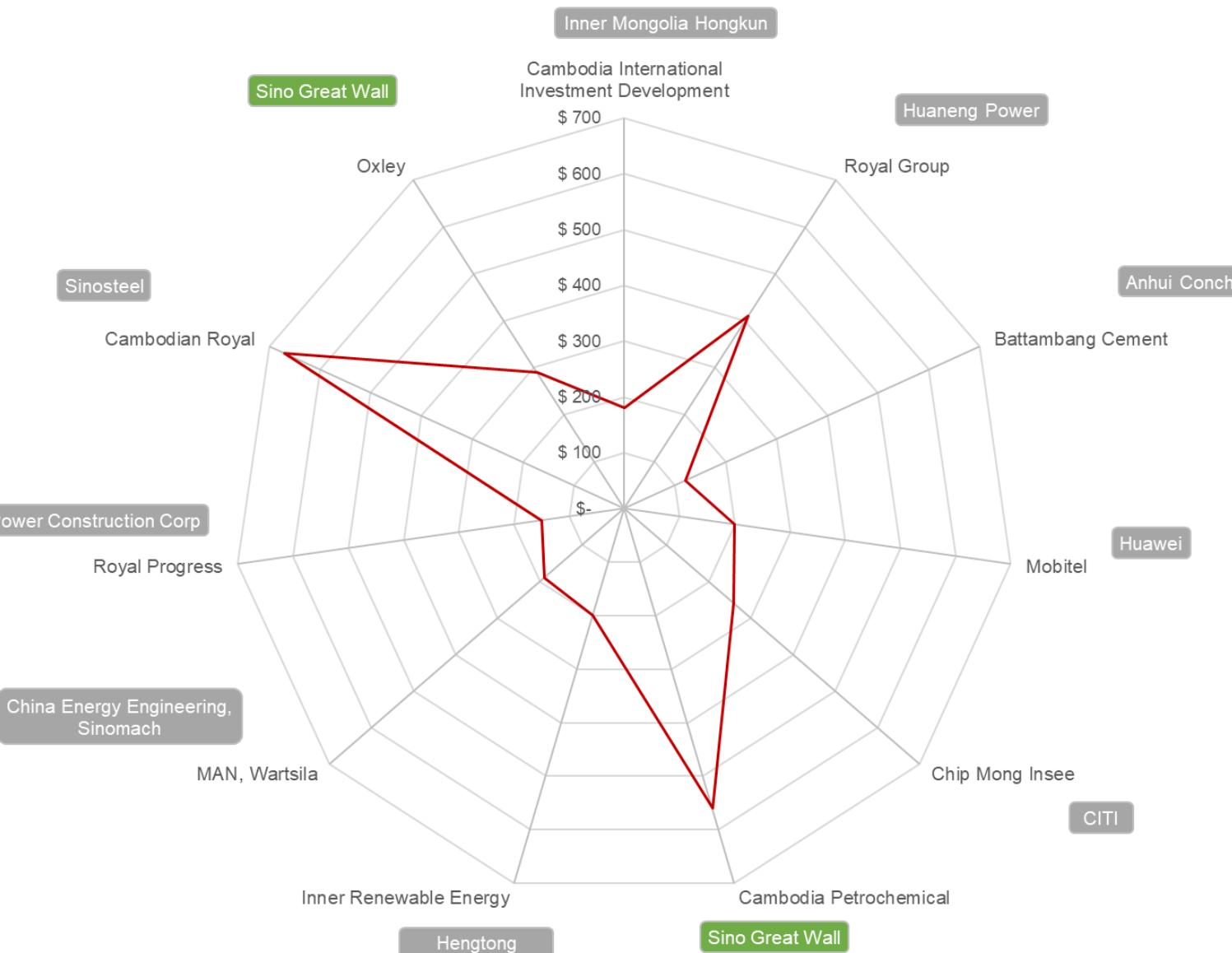
- Same conclusion for property
- Most projects doesn't have any transaction party

!/\ legend :

framed texts are *investors*, color help seeing the same ones.

Non framed texts are *Transaction parties*.

Investments Transaction party, per investor, in real estate in CAMBODIA



Every investment as a different transaction party.

Most Transaction party are organisation that are from CAMBODIA (which make sense otherwise chinese companies would not need transaction party).

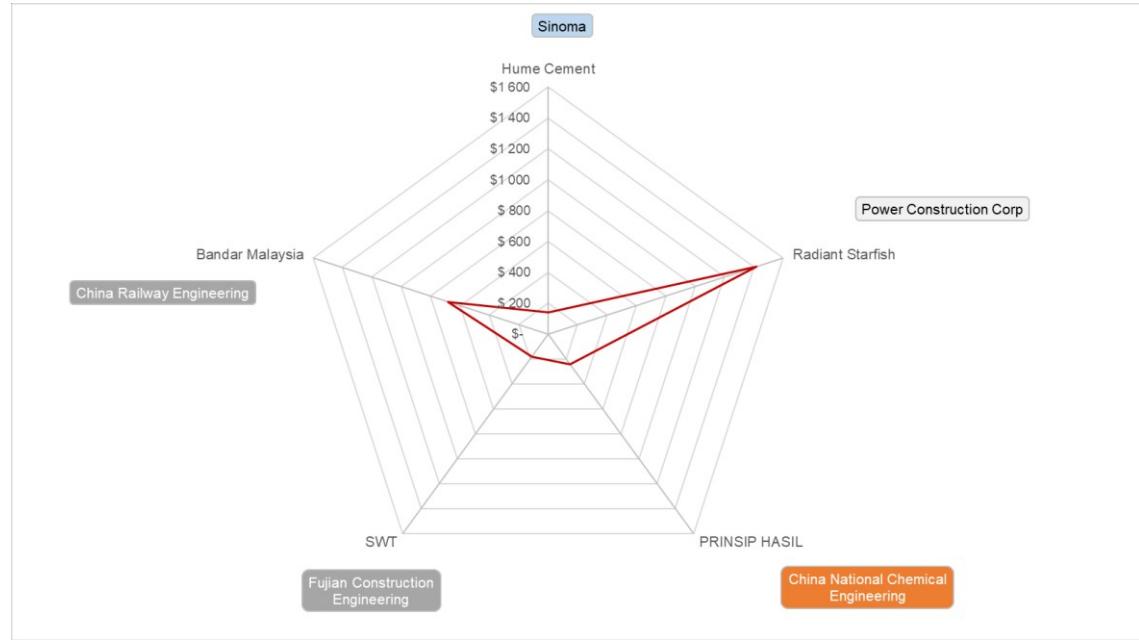
!/\ legend :

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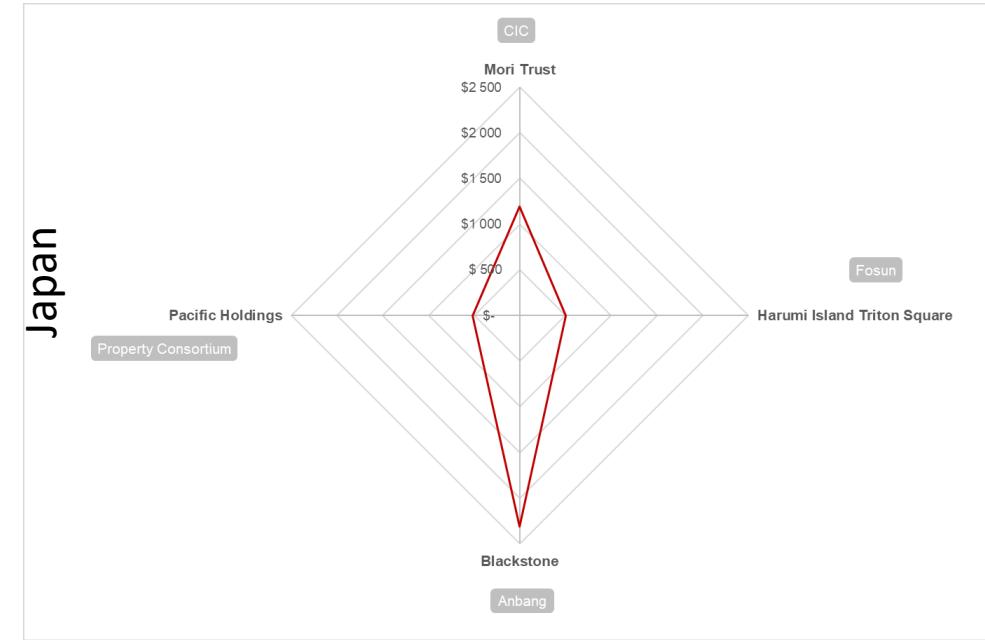
Non framed texts are Transaction parties.

Investments Transaction party, per investor, in real estate per country

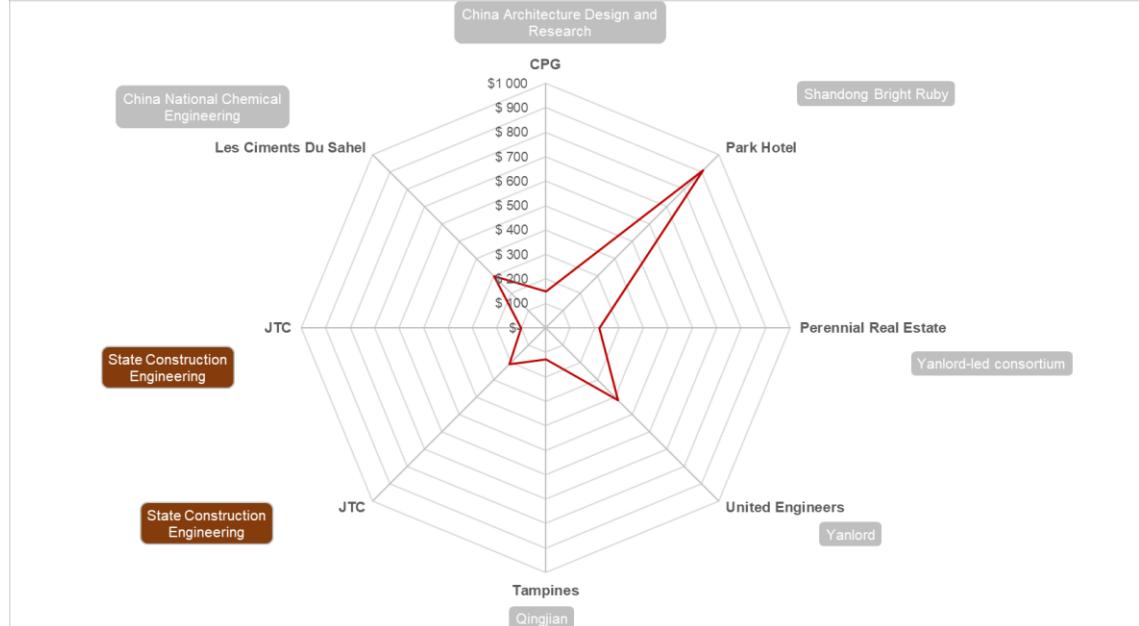
MALAYSIA



Japan



SINGAPORE



MALAYSIA and Japan :

- One transaction party per Investment
- Most investment doesn't have transaction party

SINGAPORE :

- One transaction party per investment except for State construction engineering that worked with JTC twice. 2 construction 2019 and 2020

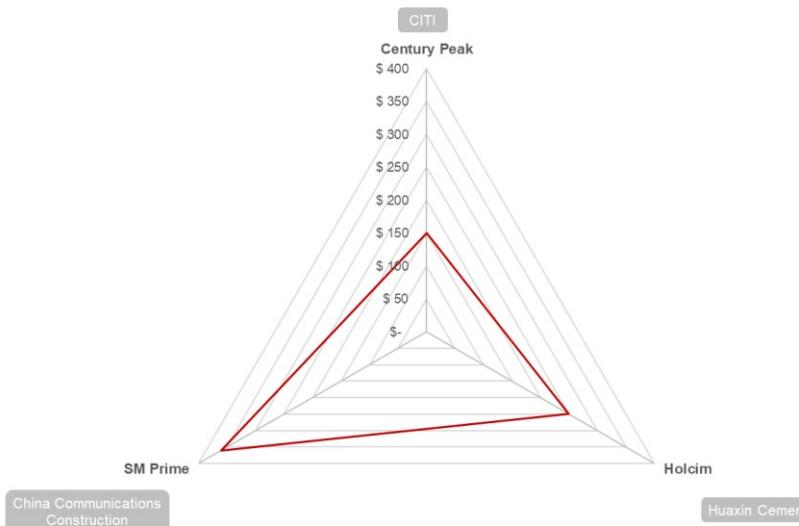
!/\ legend :

framed texts are **investors**, color help seeing the same ones.

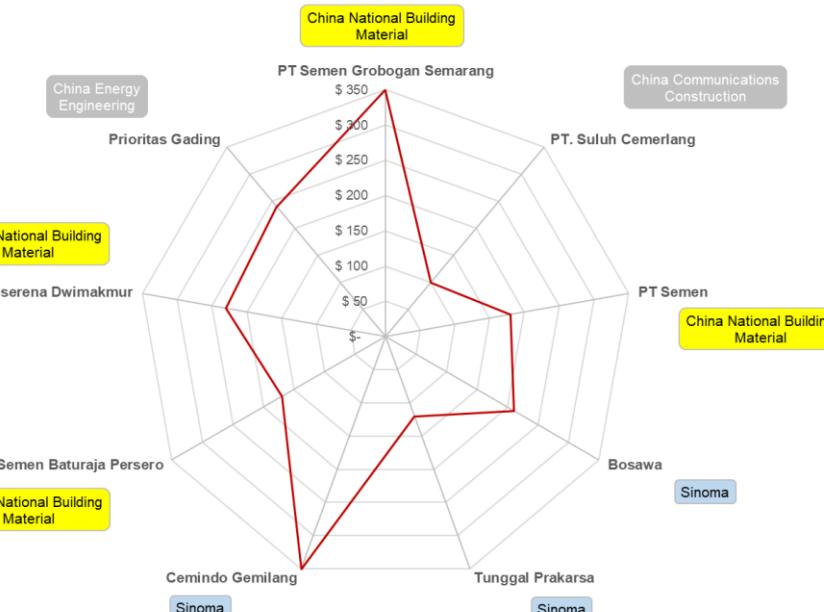
Non framed texts are **Transaction parties**.

Investments Transaction party, per investor, in real estate per country

PHILIPPINES



INDONESIA



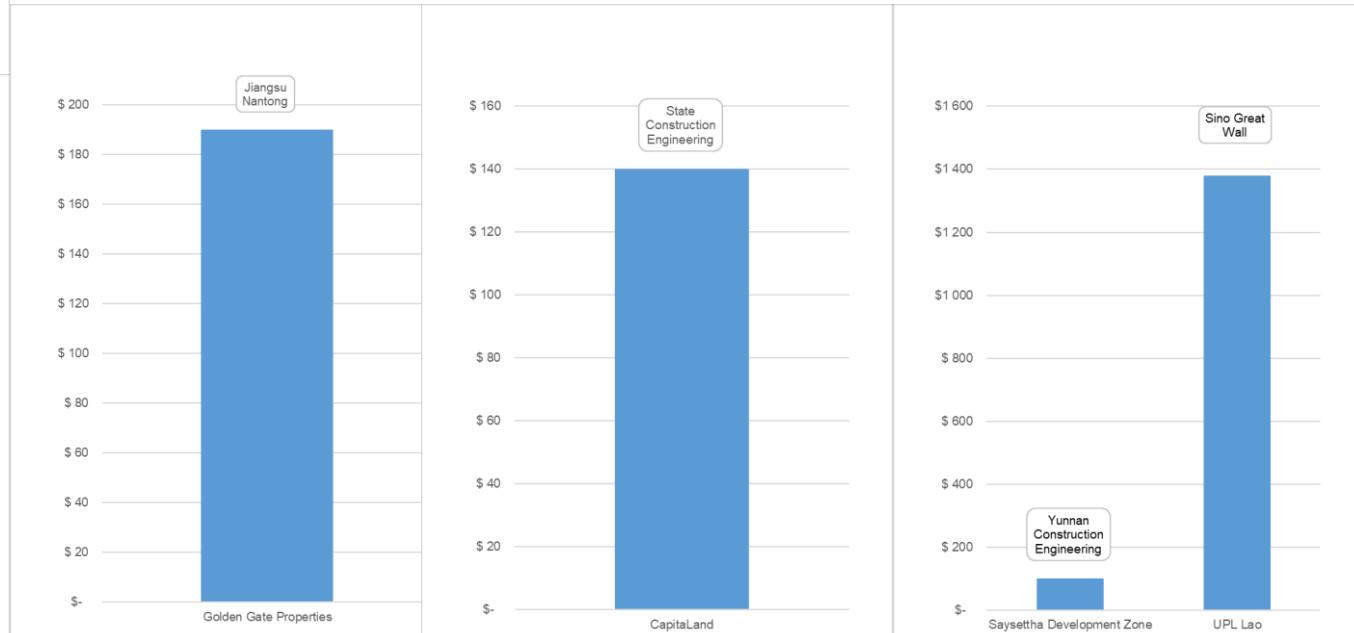
INDONESIA :

- China National Building worked 4 times with a transaction party and Sinoma 3 times.
- There are 4 iterations of a « PT » company (in 2011 and 2016)

/!\ legend :

framed texts are *investors*, color help seeing the same ones.

Non framed texts are *Transaction parties*.



INDIA

VIETNAM

LAOS 99

Transaction parties

- **Context :**

39% of investment have a transaction party

Much more transaction parties after 2015 than the decade before

- **Conclusion:**

In real estate there is no dominant transaction party per country or per investor.

Then the choice of transaction parties may be is not the one of investor that have to adapt to the context of their investments (when there are no constraints maybe they prefer no transaction party at all)

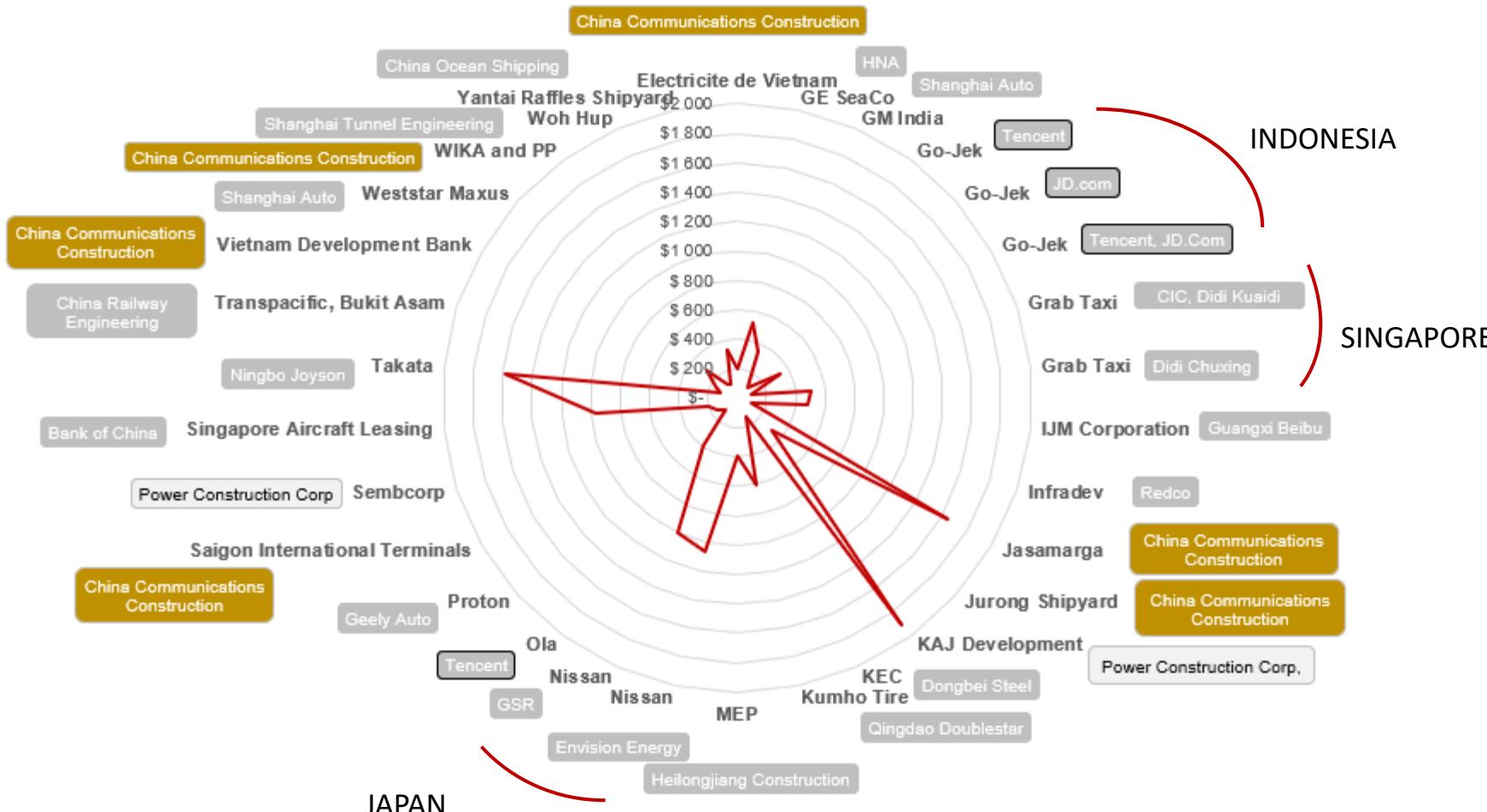
Still new cooperation?

Transaction party

range : **Transport** 2005 and 2020 (Investments and Construction)

25% of the investments involved have transaction party

Investments per Transaction party, per investor, in TRANSPORT



Some transaction parties work on multiple chinese investments, sometimes with the same company (tencent and Go-Jek), sometimes with different investors (Nissan).

Same with investors who sometimes work with the same transaction party (Tencent), but sometimes with different ones (China Communication Construction, Power Construction Corp.).

Here the company that work with the same transaction party is a non state owned but there is absolutely not enough exemples to make any conclusion.

Tencent investment probably correspond to investment in smart buses (means of payment)

!/\ legend :

framed texts are investors, color help seeing the same ones.

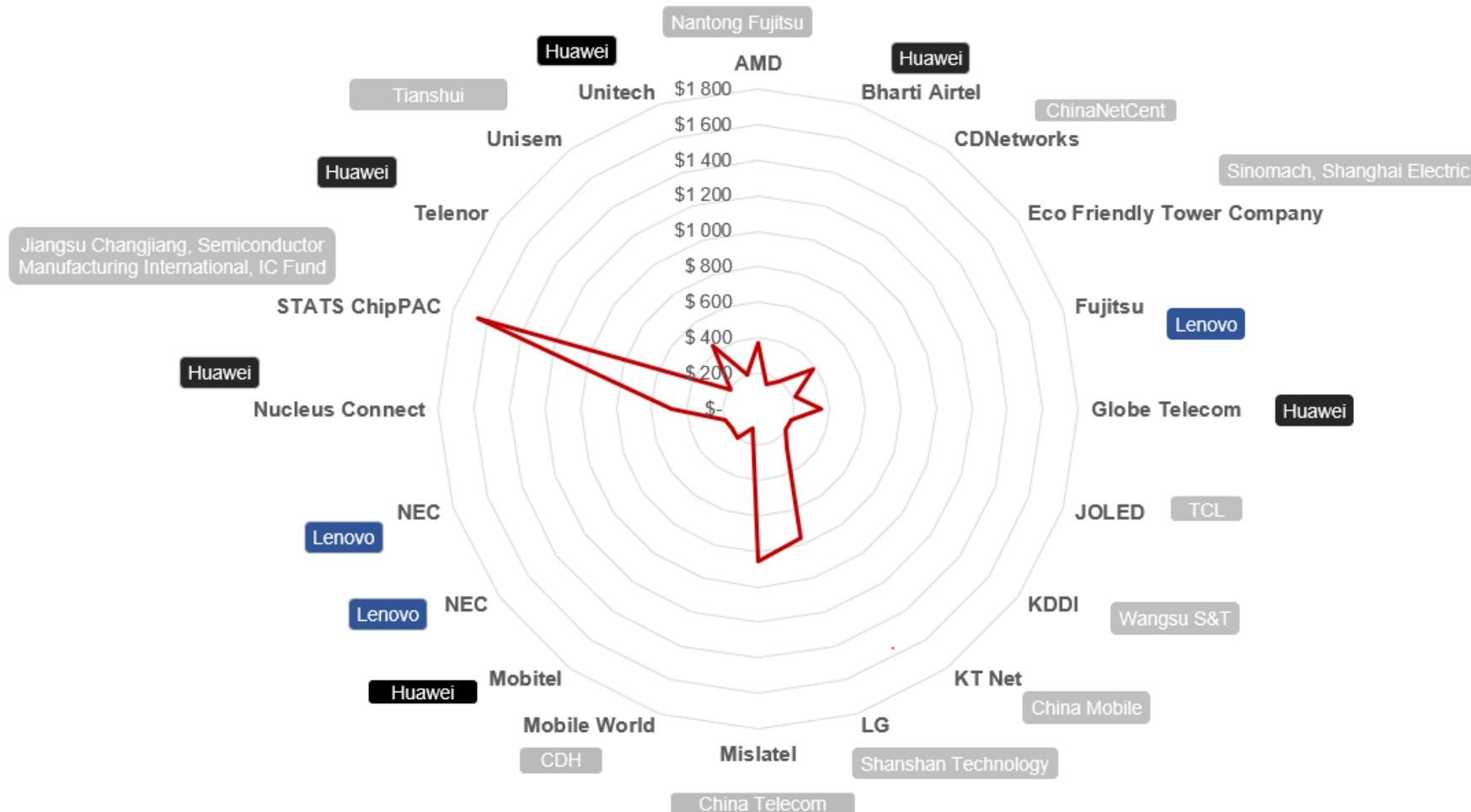
Non framed texts are Transaction parties.

Transaction party

range : **Technology** 2005 and 2020 (Investments and Construction)

68% of the investments involved have transaction party

Investments per Transaction party, per investor, in Technology



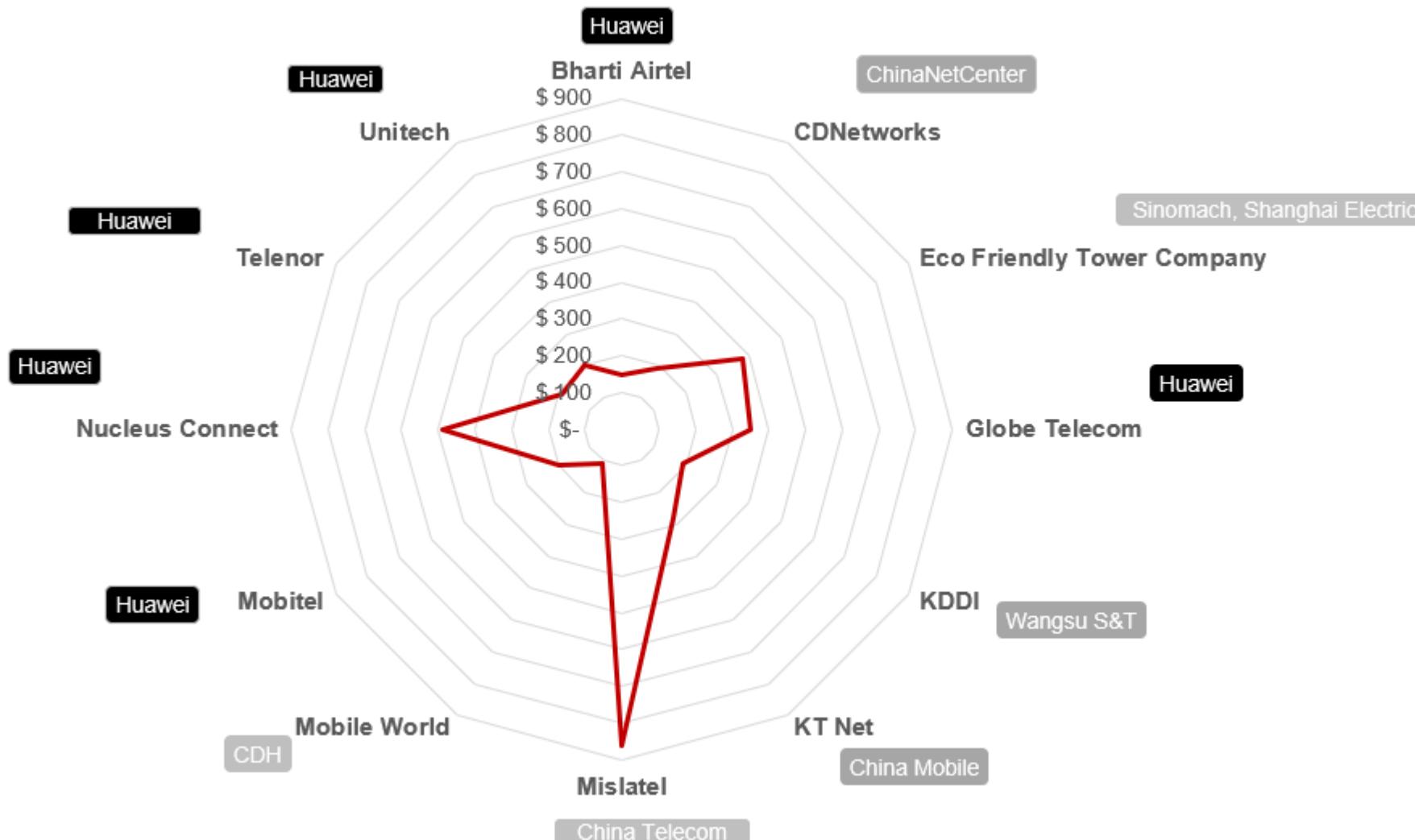
All investments from **LENOVO** are made in **JAPAN** and are **not Telecom**

!\\ legend :

framed texts are **investors**, color help seeing the same ones.

Non framed texts are **Transaction parties**.

Investments per Transaction party, per investor, in TELECOM



Huawei investments are spread between 5 different countries :

- Sri Lanka
- Philippines
- Singapore
- Cambodia
- India

Huawei is probably developing China in almost all the SEA. That's why he is so dominant Telecom investments.

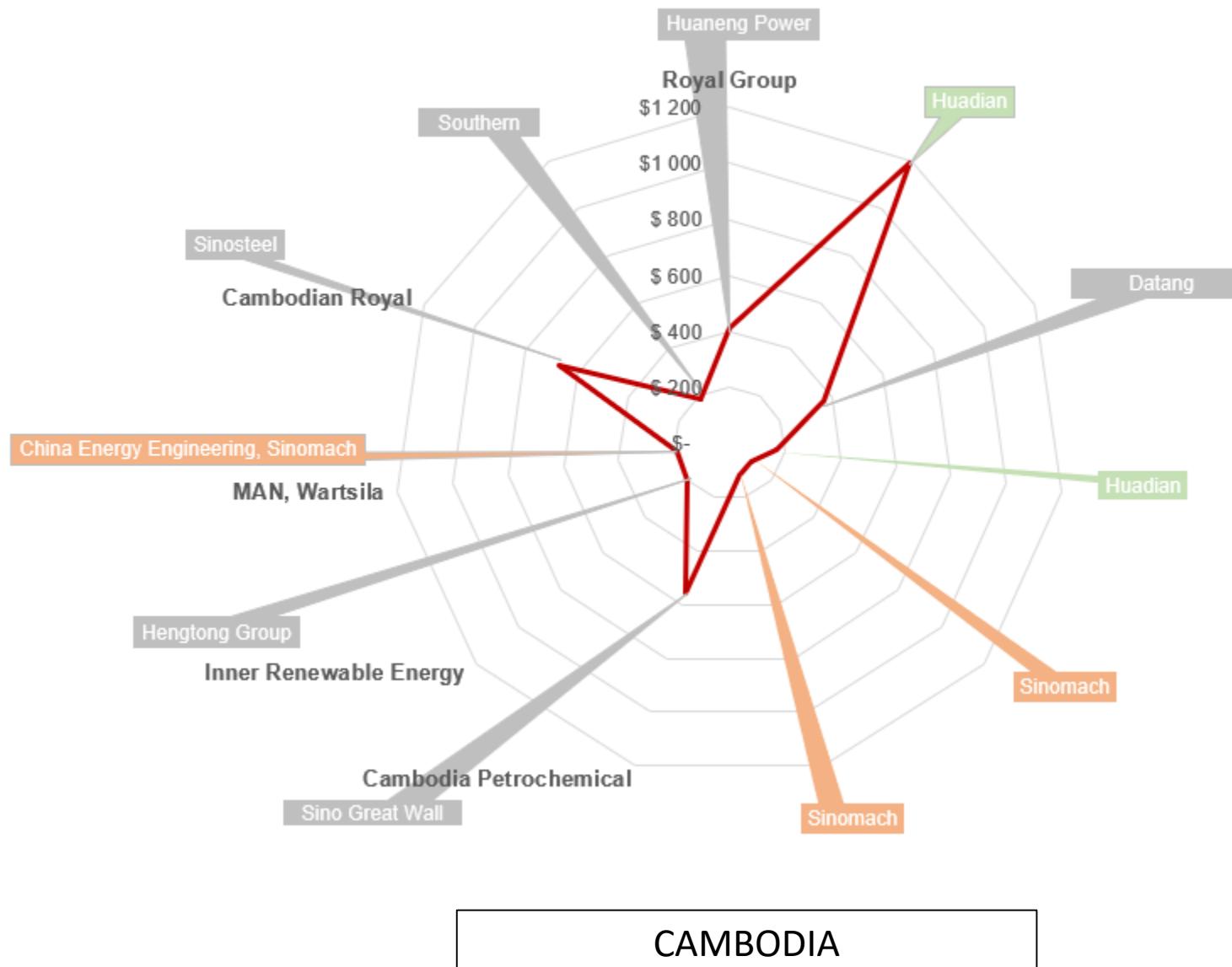
/!\ We ONLY see investments with transaction party here!

Transaction party

range : **Energy_** 2005 and 2020 (Investments and Construction)

48% of the investments involved have transaction party

Investments per Transaction party, per investor, in Energy in CAMBODIA

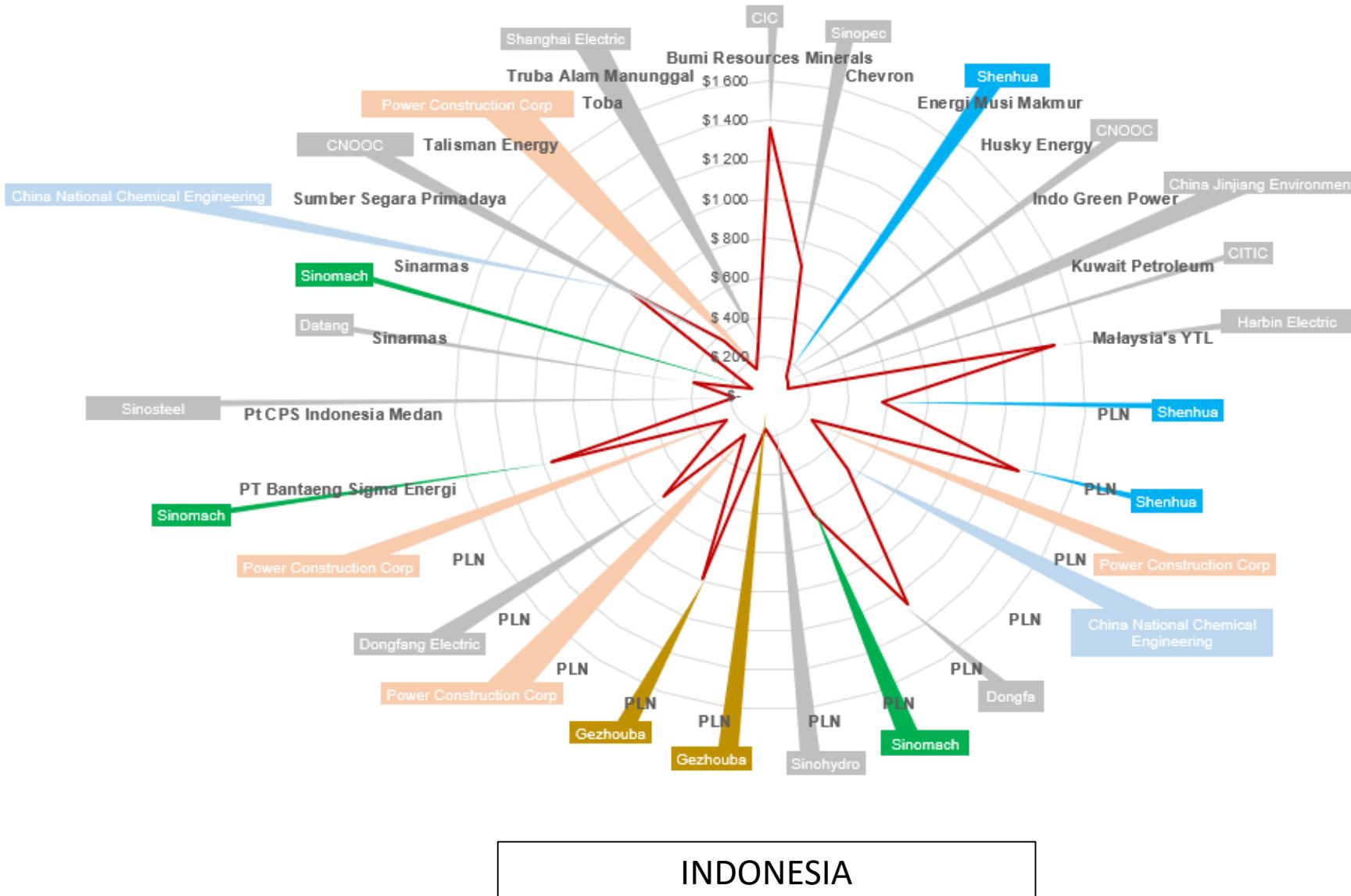


Cross with investments per subsector to see what kind of energy it is.

SINOMACH and **HUADIAN** on multiple investmentsd with **no transction party**

/!\ I displayed investments with no transaction party because there is enough space

Investments per Transaction party, per investor, in Energy in INDONESIA

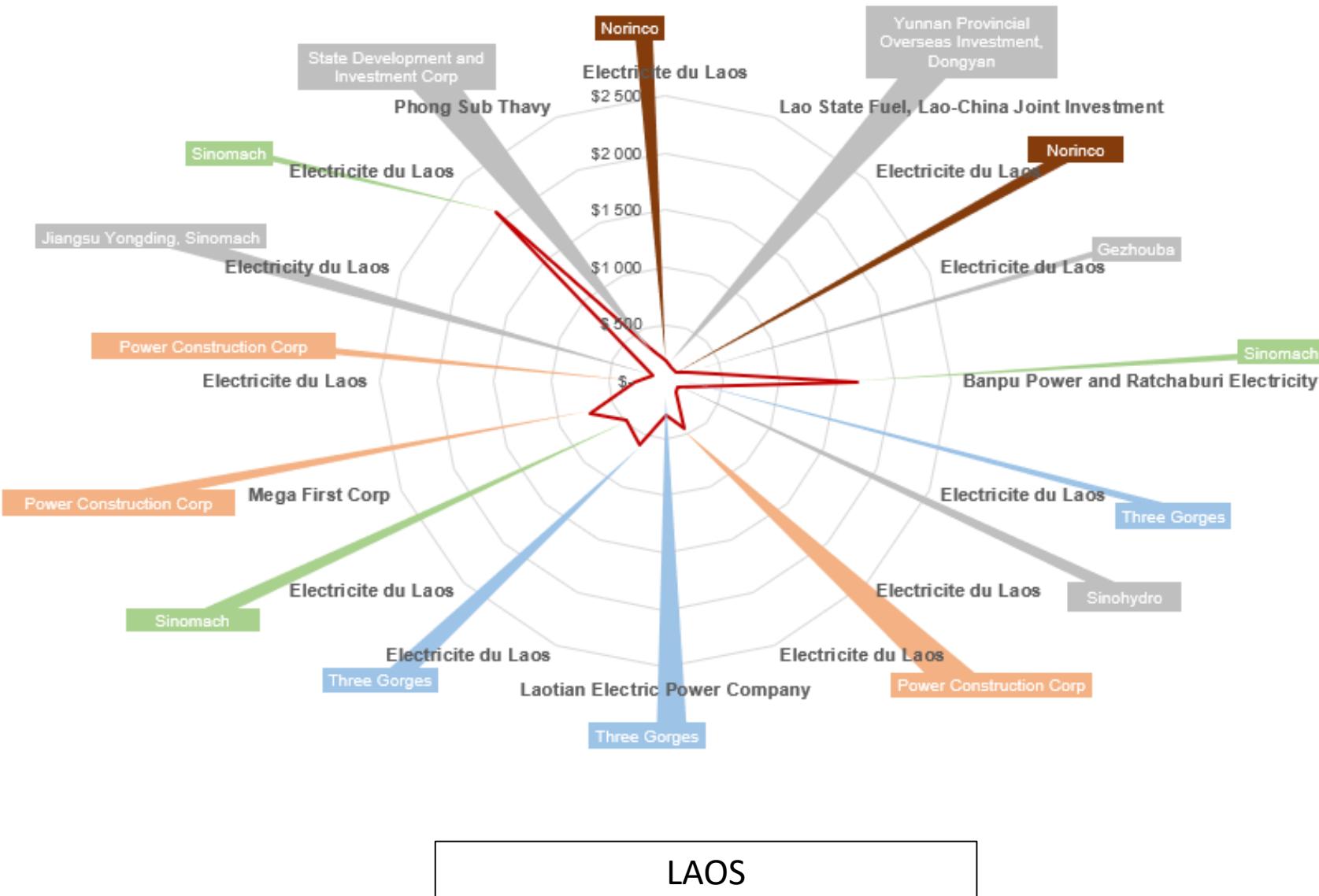


Much more variety of investors

PLN is a really important transaction party that works with several investors.

We haven't seen such an important transaction party in other sectors

Investments per Transaction party, per investor, in Energy in LAOS

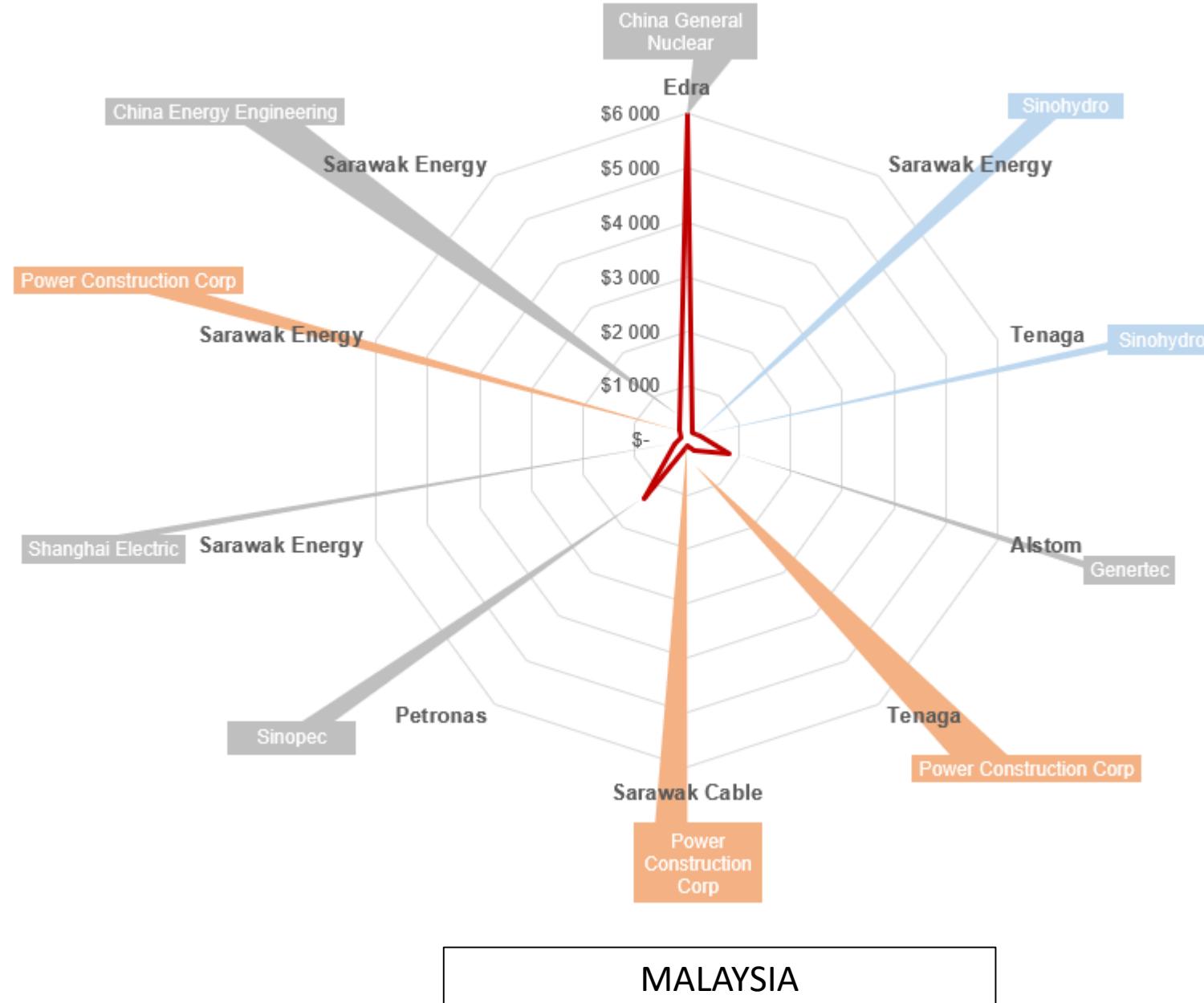


Variety of investor

Most important investments led by **Sinomach** (present in a lot of countries in SEA).

Electricite du Laos is a really dominant transaction party (2nd time we see that and its once again for energy)

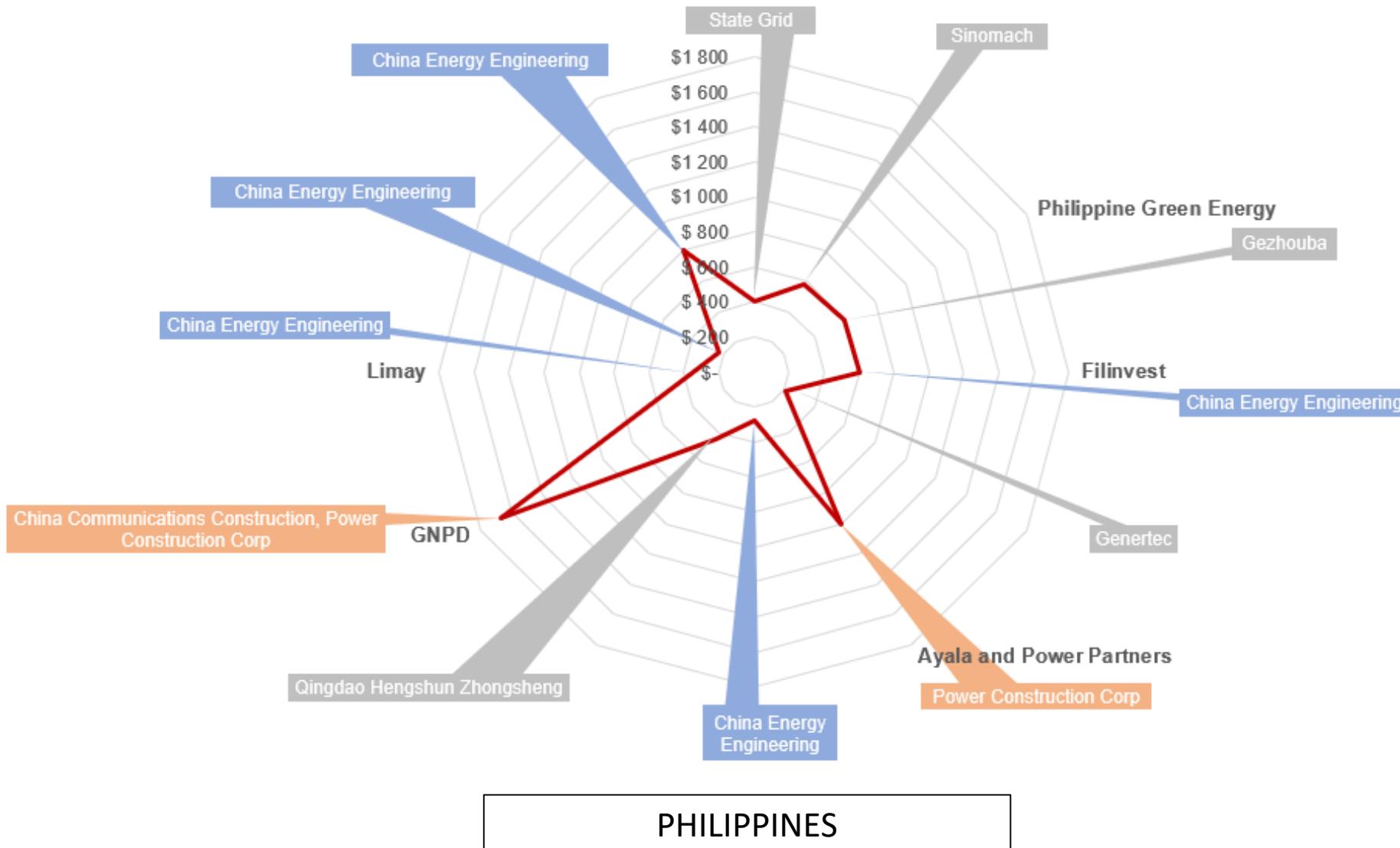
Investments per Transaction party, per investor, in Energy in MALAYSIA



Most investments with transaction parties are made with **state-owned** investors.

Sarawak Energy / Cable is a dominant transaction party.

Investments per Transaction party, per investor, in Energy in PHILIPPINES

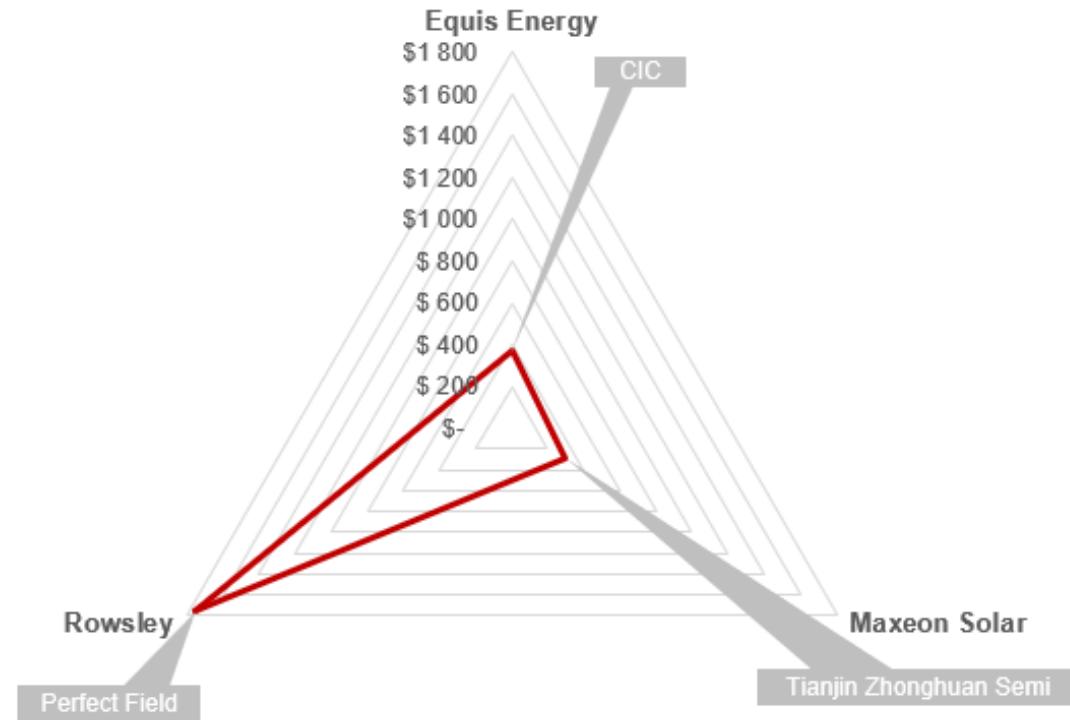


China Energy Engineering is the most important investors but we don't see any transaction party on multiple investments (few investments overall)

! I displayed investments with no transaction party because there is enough space

Investments per Transaction party, per investor, in Energy in SINGAPORE

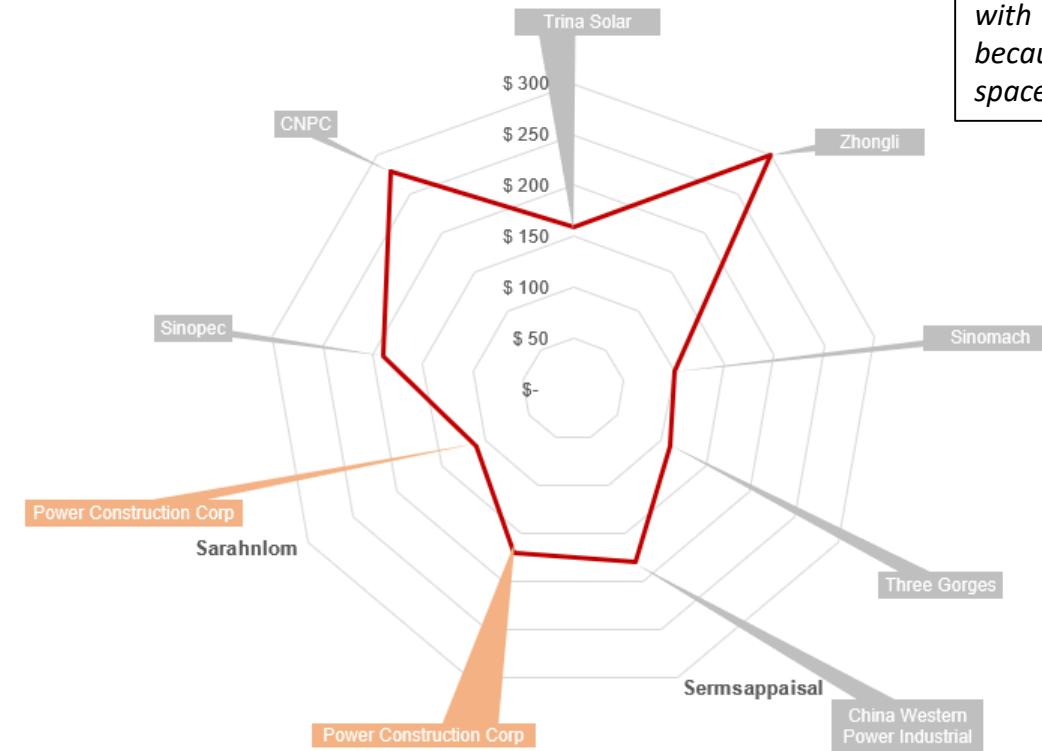
/!\ I displayed investments with no transaction party because there is enough space



looks like alternative energy.

Energy is not the focus for chinese investors in **SINGAPORE**.

SINGAPORE

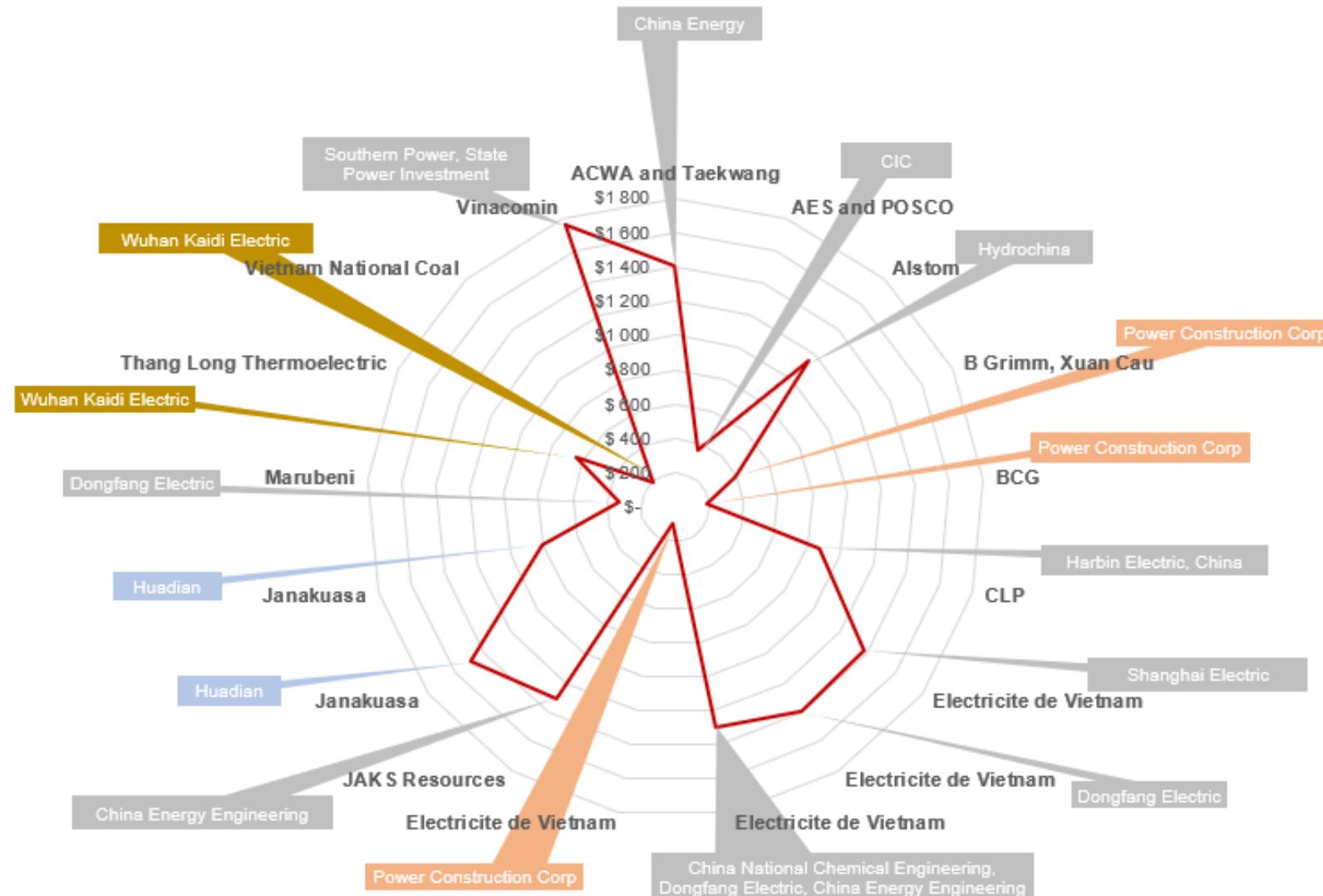


A few investments with what looks like alternative energy.

Most investors have invested in some other countries

THAILAND

Investments per Transaction party, per investor, in Energy in VIETNAM



Electricite de Vietnam is an important transaction party.
Anything in common with **Electricite du Laos**

! I displayed investments with no transaction party because there is enough space

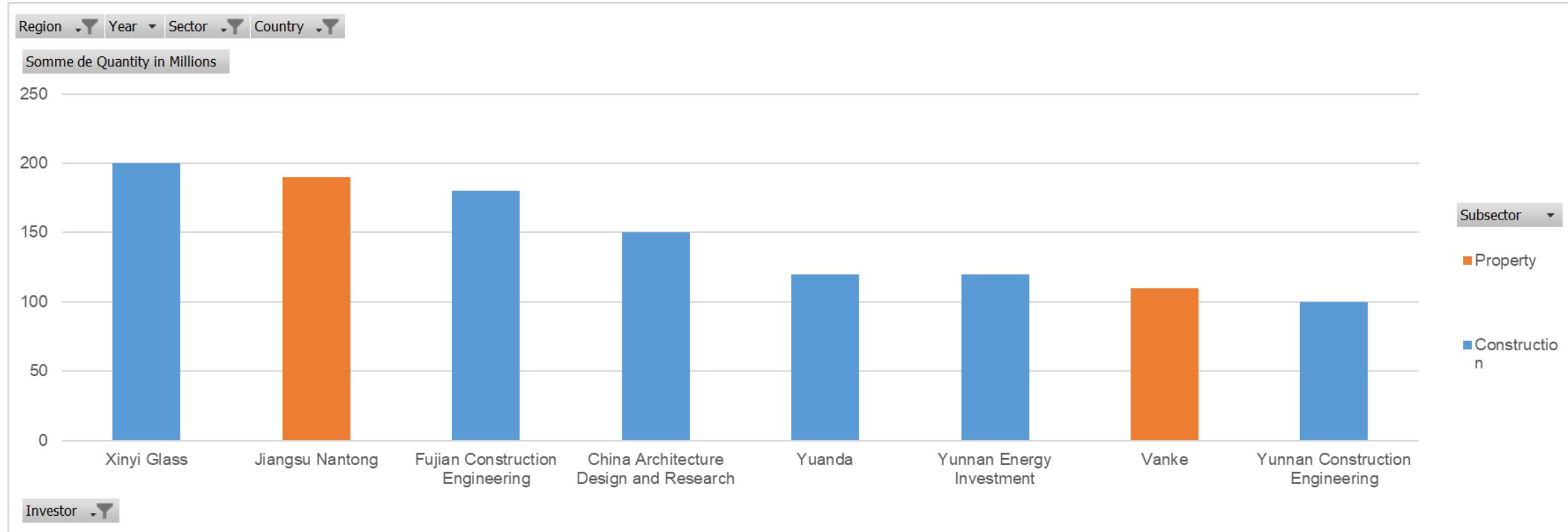
Part 6: Limits of data

range : **Real Estate** 2005 and 2020, in SEA (Investments and Construction)

- **Are we seeing all investment, especially lower ones?**

=> If not it would explain why some country have so few investments

8 lowest investments in the Database in real estate, in SEA

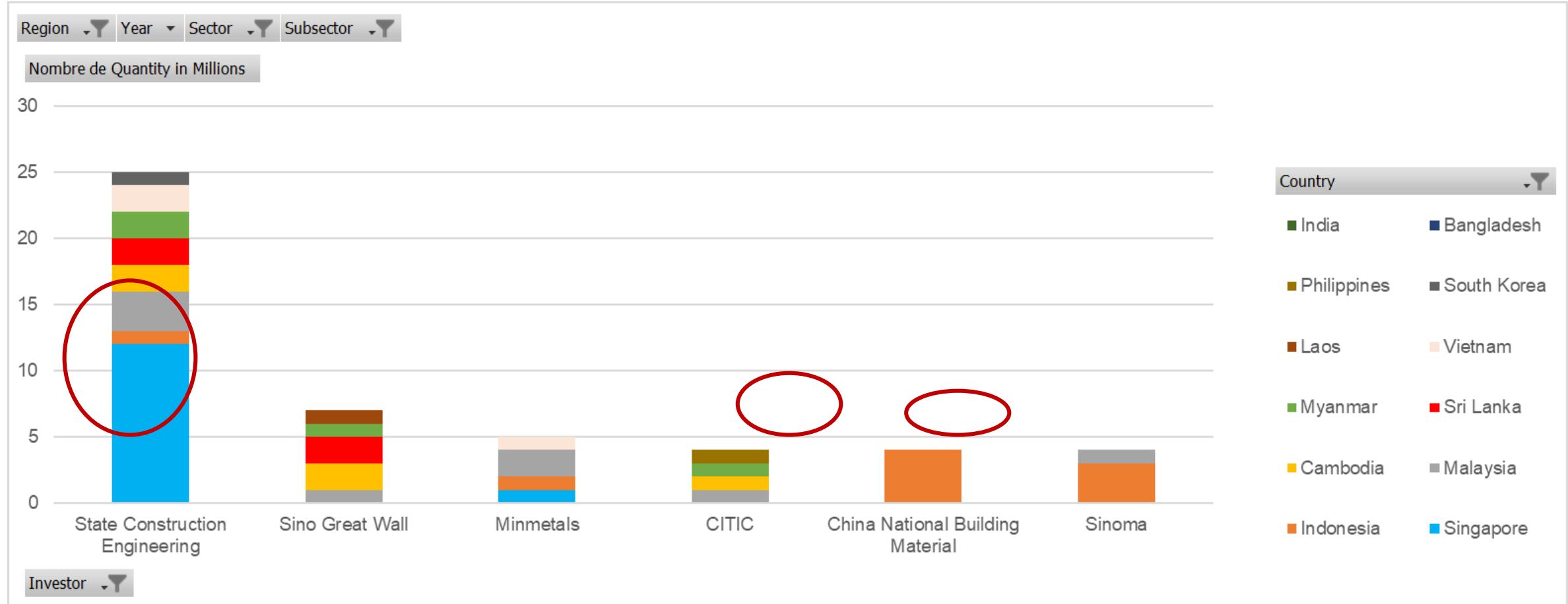


No investment under 100 M of \$

=> impossible to see investments in some countries like THAILAND and where China want to be more discreet on its influence

- Are investments made in different steps in the data?

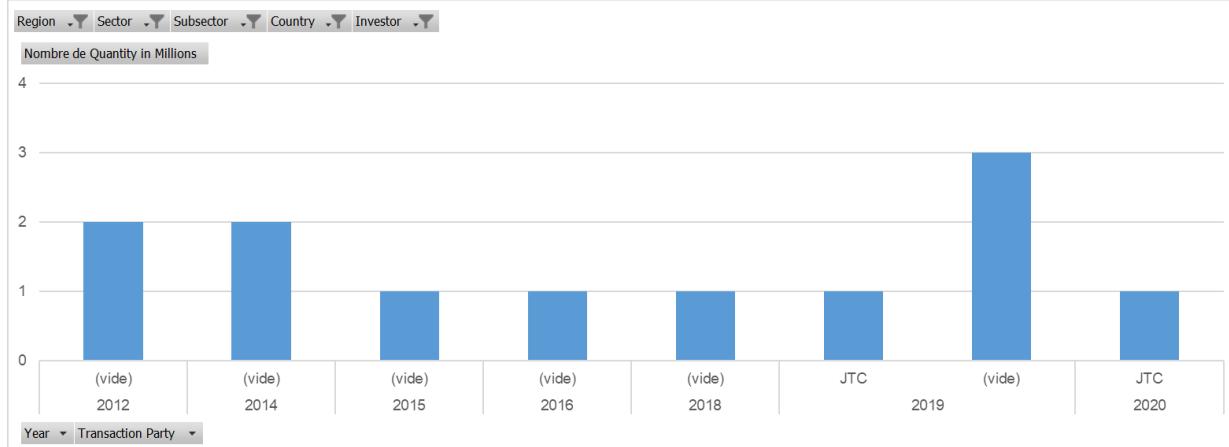
6 companies with the most important number of investments in construction, in SEA



Objective : find the best investors to see big projects are splitted or gathered in terms of money.

=> Best are : State Construction engineering in SINGAPORE and sinoma and China National Building Material in INDONESIA

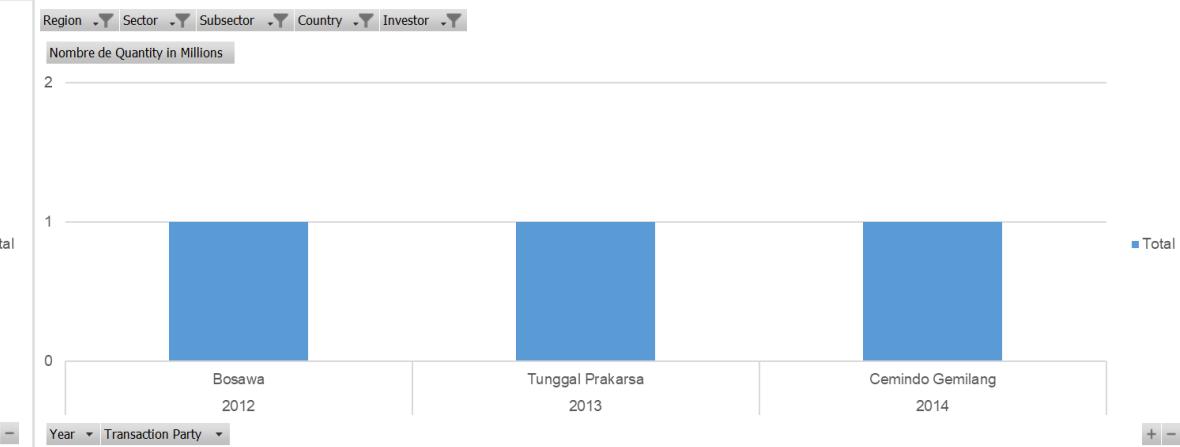
Number of investments per year and per transaction party, in construction



State Construction engineering ; SINGAPORE

SINGAPORE :

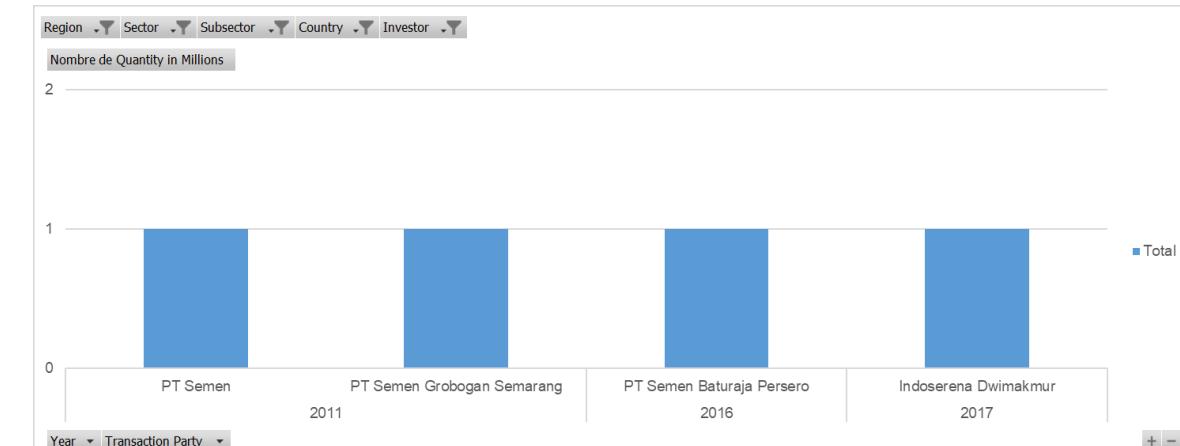
Looks like there are following investments, and in 2019 and 2020 we find the same transaction party, => it could be a same projetc splitted in investment.



Sinoma ; INDONESIA

SINAMO AND INDONESIA :

We have investments in following years but the transaction party change

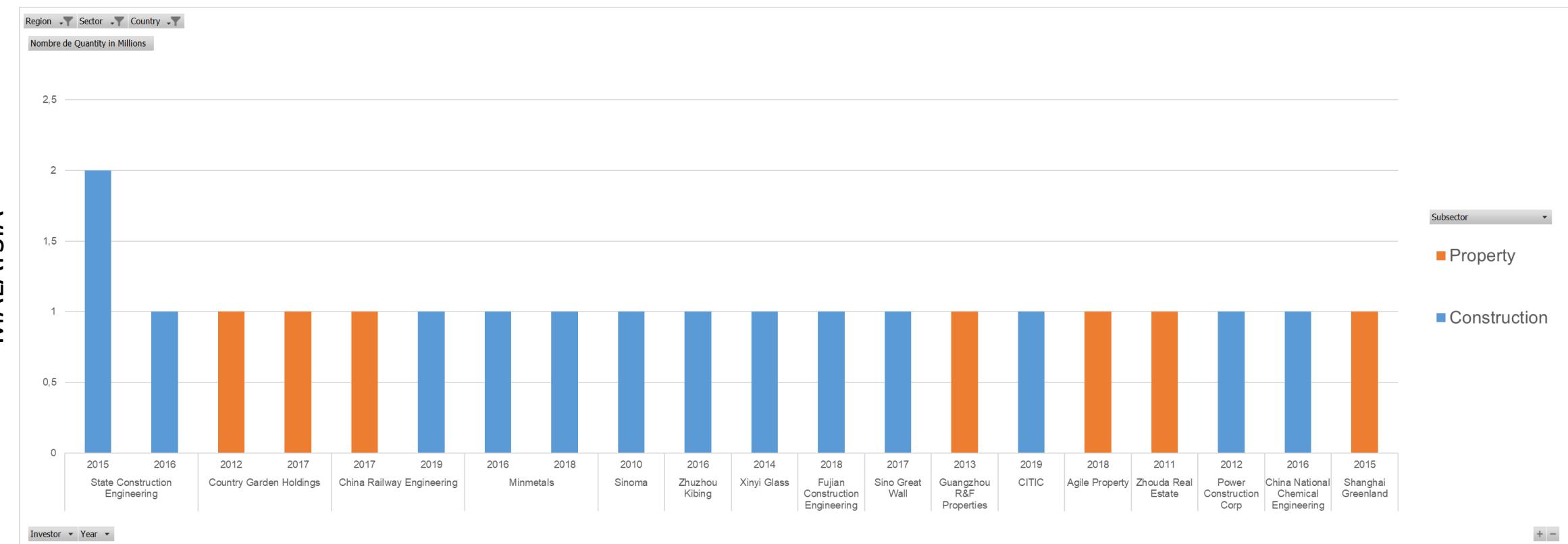


China national Building Material ; INDONESIA

- **Is land part of property ?**

=> If yes it should appear for THAILAND, philippines where we see only construction and it would mean there is a big lack of data.

Number of investments per year and per investors, in real estate in MALAYSIA



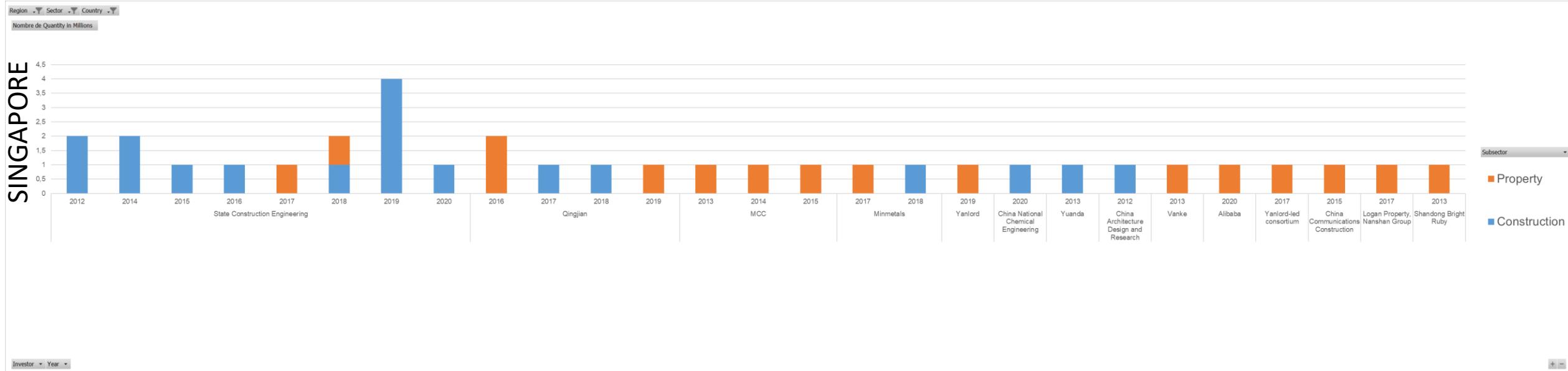
We see that (except one time) a company doesn't invest in property before investing in construction.

We could also imagine an investment in land follow by an investment in construction (by another company) but all those companies in property (with holding and preoperty in their name) actually invest in real estate (buy buying existing building and make them gain value).

Property probably doesn't concern land but rather buildings. (with property and building investments been completely separated).

The case of China railway Engineering could be a counter-exemple which could means the nature of « property » could be inconsistant in the data or if its just 2 different investments in differents places within the country.

Number of investments per year and per investors, in real estate in SINGAPORE



For SINGAPORE which have more investments, it's even harder to see « logic » that would explain land is included in property. Indeed, even if sometimes, for the same company, we see some investments being made before investments in construction, it is really not consistent, which would be expected if land was included in property.

Conclusion:

- We only see really **big investments** (and then the more « official » ones).
- It looks like most **investments** in the database are represent the total amount of a project.
 - Different transaction parties for the same investor makes us think they rather totally different project than one project splitted in time
- In the end we think that most **investments in construction are not splitted** over years.
- **Property** probably concern buildings and not land here (closer to a “real estate” definition)

Other limits :

- The difference between how country publish data and chinese strategy may distort the ranking between countries