

## Week of 12<sup>th</sup> July 2021

What's on our mind this week?

### **China and the global corporate tax rate agreement: Should we be concerned?**

A global minimum corporate tax rate of 15% was recently agreed by 130 countries, among which China. Discussions had been going on for more than ten years under the helm of OECD, but they had been put on ice following a deadlock among participants. They were recently re-launched by Joe Biden who re-opened negotiations with other G7 members. The agreement, officially named the "OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting" is expected to be ratified at the next G20 summit following the approval of all G20 finance ministers during a meeting that took place last week in Venice, Italy. The new regime will be effective in 2023.

This agreement raised eyebrows given the hostile stance the United States, and to some extent the European Union have taken over the past four years towards China for numerous reasons including China's technology push, the origin of Covid-19 or human rights in Xinjiang just to name a few. We were not expecting China to be prepared to join any multilateral agreement sponsored by the United States in the current toxic environment, but it did. Why did China oblige? And what are going to be the consequences for our Chinese investments?

The standard corporate tax rate of China is 25%. However most Chinese listed companies pay lower taxes, and a vast number of them pay less than 15%. This is in most cases the result of tax advantages offered by local governments to the sectors they operate in, or the result of tax holidays linked to recent investments made. Cities and provinces compete with each other to attract new investments by offering large tax benefits that in most cases last for several years. Looking at the headline, one could be concerned that such tax advantages be ruled illegal going forward, resulting in the average tax rates of those companies to rise above 15%.

That won't happen.

The agreement reached recently provides for a tax authority in country A to tax any company incorporated in country A for any shortfall in profit tax paid by that company in country B each time such profit tax rate in country B is lower than 15%. In other words, it impacts multinational corporations that operate across jurisdictions and take advantage of lower tax rates overseas. It is quite clear that this agreement targets more specifically the internet giants that have taken advantage for years of favourable tax regimes in certain jurisdictions (British Virgin Islands, Cayman Islands, Ireland, Luxemburg to name a few). Countries that rejected the agreement include Estonia, Hungary and Ireland, three members of the European Union, as well as Barbados, Saint Vincent and the Grenadines, Sri Lanka, Nigeria and Kenya. Peru abstained.

Looking specifically at the situation of China, this law will impact Chinese corporations that have subsidiaries set up in low-taxation countries and that take advantage of it. From our experience, this is not a situation we have encountered often, and certainly not in the past few years. Indeed China has started cracking down on corporate tax evasion approximately ten years ago. One of the typical abuse that had been prevalent prior to the crackdown was for companies registered in Mainland China to use Hong Kong or Macau subsidiaries to issue invoices to their clients and get paid offshore. By doing so and by not sending physically the goods to any of these two cities, these companies were evading both mainland taxes and Hong Kong (or Macanese) taxes. Some companies ended up paying large fines to the point that this tax scheme is now considered as extremely risky and is rarely seen these days. When it comes to our own investment process, this due diligence ranks high on our check list.

As far as the internet giants having overseas businesses are concerned, the average corporate tax rate of Alibaba stood at 17.7% in 2020 whereas Tencent's was 11.7% only. Tencent is therefore more vulnerable than Alibaba. Other giants such as Meituan, Baidu or Pinduoduo don't have much international business, if any at all.

Most importantly for us, this new regulation will not impact local companies having local subsidiaries benefiting from local preferential tax treatments, which is a feature of almost all Chinese companies, listed or unlisted. It will not impact either the level of cash subsidies that are frequently paid by local governments for R&D expenses in many high-tech sectors.

Despite this regulation being aimed at the internet giants, companies that could potentially be impacted are multinational corporations headquartered in Europe or the United States with large operations in China that benefit from tax incentives obtained in China. That would be typical of large industrial concerns having set up many factories in China, such as General Motors, General Electric, Siemens, Schneider or Michelin just to name a few.

Given the limited consequences for China's fiscal revenues and for Chinese corporations, there was no harm in deciding to ratify this global tax agreement. There is only upside to be seen as being a willing participant to an international coalition at a time when China does not have many friends around the G20 table.

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### **Semiconductor foundries: a brief history and outlook**

A lot was written in the past few months about the semiconductor industry in light of the global chip shortage the world has been experiencing. We decided to share our views on the sector.

When discussing about **foundries**, analysts typically only talk about semiconductor **outsourcing** companies whose clients are **design houses** (also called fabless companies). Foundries produce computers' Central Processing Units (or CPU) chips for these clients (such as Qualcomm or NVIDIA). This is where capacity is lacking these days. Simply speaking semiconductor foundries are third-party manufacturers of chips.

Foundries are to be differentiated from *integrated* producers of CPU chips that **both design and manufacture** CPU chips (Intel is one of them). Foundries also need to be distinguished from the **memory** producers (DRAM and NAND) that are all integrated, doing both design and manufacturing (SK Hynix, Micron and Samsung Electronics are the largest). We may cover integrated CPU chip including memory producers in another article.

The global chip shortage has led to a large rally of foundry names attracting more of them to the capital markets, as well as takeovers. Globalfoundries, based in the United States, is the third largest semiconductor foundry after TSMC and Samsung. It is preparing for its IPO with an expected USD 30bn market cap. In China, NexChip, a foundry subsidiary of

the Taiwanese group Powerchip, has also filed for an IPO on China's mainland stock market. Wingtech Group, the Chinese handset contract manufacturer that is a competitor of Foxconn, recently acquired Newport Wafer Fab, a British foundry based in South Wales for GBP 63m to enhance its manufacturing capability.

TSMC (Taiwan), Samsung (Korea), Globalfoundries (USA), UMC (Taiwan), and SMIC (China) are the world's dominating foundries. This is a relatively new business model which TSMC initiated about 30 years ago, when the demand for semiconductor chips started to increase but not as much as the level of investments required to buy the equipment and build clean-room facilities. Companies which did not have enough demand to cover the asset-heavy investments couldn't afford to have manufacturing lines. This was the start of the foundry business where companies in need of production capacity would use the facilities on pay-as-you-go basis, or more specifically based on how many wafers they needed to produce. Nowadays, the minimum investment required to build a factory for ultra-high-tech chips, the 7nm or 5nm ones, is two to three times higher than the investment required for the previous generation. For instance, the cost of building a factory capable of producing 50,000 wafers per month capacity of 7nm chips is estimated to be approximately USD10bn. This makes the entry-barrier of the sector very high. This is why even large integrated chip makers such as Intel are hinting that they will start to use third party foundries to produce their chips.

Are all foundry companies built on the same model?

There are different types of foundries. Although most of them are producing transistor-based integrated circuits (IC) structures, a few others specialise in MEMS (Micro Electromechanical Systems). Looking at the majority of them, the transistor-building foundries, they can be categorised by their output wafer size: 12-inch, 8-inch and 6-inch foundries. Most of the 6-inch manufacturing is not outsourced by the producers as the investment cost is not challenging, and the requirement for miniaturisation of ICs is limited. The amortisation of the equipment can be rolled over a long period of time. TSMC, Samsung, Globalfoundries, and UMC are the 12-inch foundries, but they do have small portions of capacity which can support 8-inch process too.

Other smaller foundries including Vanguard (Taiwan) , Huahong (China), DB Hitek (Korea) or TowerJazz (Israel) are the 8-inch foundries.

All foundries used to all be 8-inch foundries but some made the decision 20 years ago to invest in 12-inch equipment. For them it was a huge investment decision at that time and they are now clearly reaping the rewards as they stand at the forefront of the growth of the semiconductor industry. The same cycle keeps on repeating itself within the tech industry as companies willing to bear the burden of investing in the next generation of technology take the lions' share while the others tend to stagnate. Around 6-7 years ago, some of the 12-inch foundry companies such as Globalfoundries and UMC refused to migrate toward the 14nm FinFET (Fin structured Field-effect Transistor) technology because of the investment burden. Today they lag behind TSMC and Samsung. Recently again, only the companies that committed to invest in ultra-expensive EUV (Extreme Ultra Violet) lithography machines produced by ASML (in The Netherlands) could deliver the cutting-edge 7nm or 5nm chips to the market. That created the technology gap that Intel is suffering from today as it lags far behind TSMC. Hence the market segmentation in the foundry business relates to the technology-offering level which itself depends on the capacity and willingness to accept the investment risk.

What explains the current IC shortage and what are the implications for the foundry industry?

Over the past three years, the uncertainties of the trade war between the US and China led many foundries to delay their investment decisions, especially when it came to where geographically they should be adding capacity. Then, early 2020, the covid-19 pandemic led to a surge of demand for home computers, laptops and tablets to cater for the work-from-home needs, right at the time when demand was also growing for chips catering for the Internet of Things era. This unique set of circumstances led to a strong discrepancy between the supply and demand with strong delays appearing in the supply chain. The foundries became very popular with equity investors. The stocks rallied strongly, and foundries announced hefty capex investment plans for the growing demand. In the short term, the industry outlook remains rosy, and investors are happy, but we would be amiss if we did not look at the medium and long term outlooks.

As capacity is added, the imbalance between supply and demand will reduce and the foundry business, for a large part, may return to what it was 20 years ago, when foundries were a rather redundant business where IC designers, like NVIDIA or AMD, could choose from a few suppliers to manufacture their chips.

However, as we have seen, the investment cost for innovation meant that only two companies worldwide can now produce the most sophisticated semiconductors -7nm and below: TSMC and Samsung. Most of their competitors have already announced they would not pursue this market, most likely because the demand for 7nm and below is still fairly limited. Only high-end CPUs and GPUs (graphic processing units) are using this technology. But this may be very short-sighted. It may well be that 10 years down the line smartphones will start using 3nm AP (Application Processors) and DDIC (Display Driver Integrated Circuits) will adopt 7nm design. Car manufacturers may want the future generations of New Energy Vehicles to use 5nm processes for their MCUs (Microcontroller Units) to support 5G-based low-latency situation. At that point it is possible that only Samsung and TSMC could cater for that demand. The prospect for these companies will be significant while others may have to fight and/or merge to stay relevant in a shrinking market.

In conclusion, thanks to a unique set of circumstances, foundries are showing amazing results and stock market performances and more of them are raising funds through IPOs. However it is important to remember that foundries are just third party manufacturers of largely commoditised products in a highly competitive industry. As such, when choosing which ones to add to ones' portfolio, it is paramount to understand their positioning and to invest in those that have demonstrated their will to remain at the forefront of the industry through continuous investments.

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