China's Impact on the World Economy

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Master in Management

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I would like to dedicate this dissertation to my family.

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Resumo

A investigação desenvolvida nesta dissertação analisa historicamente o grau de interdependência entre os principais mercados financeiros mundiais e a forma como os mesmos foram afetados pelas diversas crises mundiais desde 1990 até 2019. Apresenta ainda a análise histórica de alguns dos principais indicadores financeiros e macroeconómicos, contribuindo a mesma desta forma para que se possam tirar conclusões relativamente à performance dos mercados e às tendências que se têm verificado mais recentemente.

Para o efeito, são desenvolvidas análises gráficas que permitem a visualização da evolução dos principais indicadores, bem como análises de regressões lineares múltiplas em SPSS de forma a permitir verificar a relevância e impacto quantitativo das variáveis independentes nas variáveis dependentes. A China assume um papel distintivo nesta tese, uma vez ser o principal país sobre o qual recai a análise.

Conclui-se que existe uma correlação elevada entre todos os mercados financeiros em análise. O mercado Chinês é um mercado que apresenta um crescimento exponencial, nomeadamente no que toca ao mercado consumista.

Com excelentes indicadores de performance que apontam para que seja um país rico em oportunidades para todas as empresas que se pretendam assumir como suas exportadoras e ou investidoras no mercado interno, é um mercado que se destaca dos restantes em análise pelas oportunidades de negócio que representa.

Classificações JEL: D12; F41

Palavras-chave: Interdependência dos mercados financeiros; Indicadores macroeconómicos; Impacto das Crises Mundiais; Evolução do mercado consumista.

Abstract

The research developed in this dissertation historically analyses the degree of interdependence between the main global financial markets and the way in which they were affected by the various global crises from 1990 to 2019. It also presents the historical analysis of some of the main financial and macroeconomic indicators, contributing to in this way so that conclusions can be drawn regarding the performance of the markets and the trends that have occurred more recently.

For this purpose, graphical analyses are developed that allow the visualization of the evolution of the main indicators, as well as analyses of multiple linear regressions in SPSS in order to verify the relevance and quantitative impact of the independent variables in the dependent variables. China assumes a distinctive role in this thesis, since it is the main country on which the analysis falls.

It is concluded that there is a high correlation between all the financial markets under analysis. The Chinese market is a market that exhibits exponential growth, particularly with regard to the consumer market.

With excellent performance indicators that point out that it is a country rich in opportunities for all companies that intend to be their exporters and/or investors in the domestic market, it is a market that stands out from the rest in analysis due to the business opportunities it represents.

JEL Classification: D12; F41

Keywords: Financial markets interdependency; Macroeconomic indicators; World Crises Impact; Consumerist market evolution

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Acronyms

IMF – International Monetary Fund

GDP – Gross Domestic Product

FDI – Foreign Direct Investment

OECD - Organisation for Economic Co-operation and Development

SSEC – Shanghai Stock Exchange Composite

HSI – Hang Seng Index

S&P500 – Standard & Poor's 500 Index

DAX – Deutscher Aktienindex (German stock index)

NI225 – Nikkei 225

SENSEX – Stock Exchange Sensitive Index

FTSE100 – Financial Times Stock Exchange Group 100

USA – United States of America

NPISH – Non-profit institutions serving households

SPSS – Statistical Package for the Social Sciences

VIF – Variance Inflation Factor

USD – United States Dollars

RMB - Renminbi

1. Introduction

"China is a sleeping giant. Let her sleep, for when she wakes, she will move the world."

Napoleon Bonaparte.

One year after the 70th anniversary of the People Republic of China, it is important to analyse the way China has grown and influenced the world. With Deng Xiaoping, paramount leader of the People Republic of China from 1978 until 1989, China has engaged in an economic reform that has opened its economy to the world, leading to the expansion of China's economy in a fast pace until the current days.

To analyse the influence China has in the world, we do a comparative analysis of major financial and macroeconomic indicators since 1990, the year China constituted his stock exchange market, firstly in Shanghai, in 1990, and secondly in Shenzhen, in 1991, (Stanley, Leonardo, 2018). For the purpose of this analysis, we choose the top 6 economies where, according to the IMF's World Economic Outlook Database of October 2019, the nominal Gross Domestic Product (GDP) was higher. In descending order of the respective GDP, these economies are: United States, China, Japan, Germany, India and United Kingdom.

The financial and macroeconomic indicators used for the comparison of each country are the stock indices, the GDP, the exports and imports (Trade), the Foreign Direct Investment (FDI) outflows and inflows. The stock indices are an important financial indicator, as all the major stocks of the world are interconnected (Atkinson, 2015). In this way, it is vital to understand their interdependence and whether there are stocks that have more influence than others in the rest of the world stocks. The GDP is a major economic indicator that gives us information about the size of an economy and how the economy is performing (IMF, 2020). Along with the GDP, it is important to evaluate the effect generated by trade. The correlation between trade and GDP shows us that countries with higher rates of trade tend to have higher rates of growth (e.g. Frankel and Romer, 1999, Irwin and Tervio, 2002). The usage of FDI in the model is explained by the positive association between FDI and the creation of more competitive business environment, enterprise development and country development (OECD, 2019). The FDI supports productivity and innovation gains in the host country, contributing to the development of local companies (OECD, 2019).

Regarding the stock indices, the selection criteria used for each country is the volume of the index, in order to gather the most possible data in terms of number and dimension of the companies included. There was used SSEC and HSI for China, S&P500 for USA, DAX for Germany, Nikkei 225 for Japan, SENSEX for India and FTSE100 for United Kingdom.

A special attention is given to the periods of the global financial crises. The more globalized an economy is, the more impact it will suffer from foreign crises (Accominotti, Briere, Burietz, Oosterlinck, Szafarz 2020). In this thesis, the effect of the crises since 1990 is analysed and the countries more affected are identified. The crises identified for this purpose, according to the International Financing Review, since 1990 are: The Asian Financial Crisis (1997-1999); The Russian Financial Crisis (1998); Dotcom Bubble (2000-2002); Global Financial Crisis (2008-2009)

For China, the stock indices used are the SSEC for mainland China and the HSI for Hong Kong based companies. Hong Kong, though belonging to mainland China, is a special administrative region operating as a gateway between China and the West, attracting global capital for China more efficiently than its other cities (Sin, Noah, 2020). According to Morgan Stanley, by 2018 more than 60% of foreign direct investment (FDI) into and out of China continued to be channelled through Hong Kong.

Through the reading of the findings presented in this thesis, we conclude that China has been growing as a developed country, most of the times overtaking the situations of crises and turning them to its own benefit. Nowadays, unlike in the past, China needs to be seen not as the "cheap factory of the world", but as a growing consumer market which can bring lots of opportunities for worldwide firms. The Chinese consumer market along with the stock market are everyday more interconnected with the world major economies, being of enormous relevance their careful analysis once that, every oscillation will have great repercussions in the other world economies.

The thesis is structured in two main sections: the literature review where the main principles already published about the subject are presented; and the empirical findings where statistical analysis is made and analysed in order to present the main conclusions about the way the 6 biggest world economies by GDP are growing since 1990, taking always a more particular view to China, the main country here analysed.

In the literature review, firstly is made a general overview of the influence China has in the world, and the way it has been growing. Secondly, it provides a general view of how the increase living standards of Chinese households have been contributing to the growth of the consumerist market. The last point in the literature review gives a brief explanation of how China integration with the world has evolved.

In the empirical findings, graphical analysis are made with historical data from the various macroeconomic indicators, providing a visualisation tool of easy interpretation to the reader. Also, a multilinear regression is done in SPSS to analyse the world markets interdependency, identify the ones where the global crises had more impact and whether this interdependency has been historically homogeneous or is sharper nowadays.

The main findings bring us to the conclusion that China GDP is the one with the highest historical growth, being also the economy which has the highest historical value of exports. As an increasingly more consumerist economy, China has been exponentially increasing its imports since 2010, being since then

the second country, among the ones studied, with the highest value of imports, right behind the United States. Also, the FDI inflows is a good indicator to verify the level of opportunities being offered by the Chinese economy. Representing since 2015 the second highest value among the countries studied, the FDI inflows show us that other countries are becoming aware of the opportunities the Chinese market represents, not only as producers of goods and services but has a consumerist market ready to absorb foreign products.

With SPSS statistical analysis, was concluded that there exists a great interdependency among the world financial markets in study. Furthermore, when analysing the effect of the financial crises since 1990 in the respective countries GDP, it was found that only in Germany and in India's cases, this crises had a significant impact.

A connection between the way China is growing and the increase in the consumerist market is made. The study here developed is of a great contribution to all the investors that want to expand their knowledge about China has a country to invest on, either they want to sell their products to the Chinese consumerist market, either they want to invest in the Chinese stock market. Also, the existing interconnection between the financial stock markets tested in this study, is of great relevance to all the investors worldwide, whether they want to invest in China or not, once that this interdependency of markets takes us to the conclusion that regardless of the market one's investor intend to invest on, it is vital to take in consideration other countries' economies.

2. Literature Review

2.1. China's influence in the world

The world is getting progressively more exposed to China, not only because of the role China plays as a supplier, but because of the increasing role it is assuming as a market for other economies as also as an investment destination, capital provider, technology importer and exporter (McKinsey, 2018).

According to the IMF, China accounted for 28% of all growth worldwide from 2013 until 2018, more than twice the share of United States. (Figure 1). The IMF also forecasts that the Chinese economy will grow 42 percent between 2017 and 2023 (a compound rate of 6,1 percent), compared to a growth of only 13 percent for the USA (a compound rate of 2 percent).

Figure 1 - Contribution to global output growth, 2013-2018
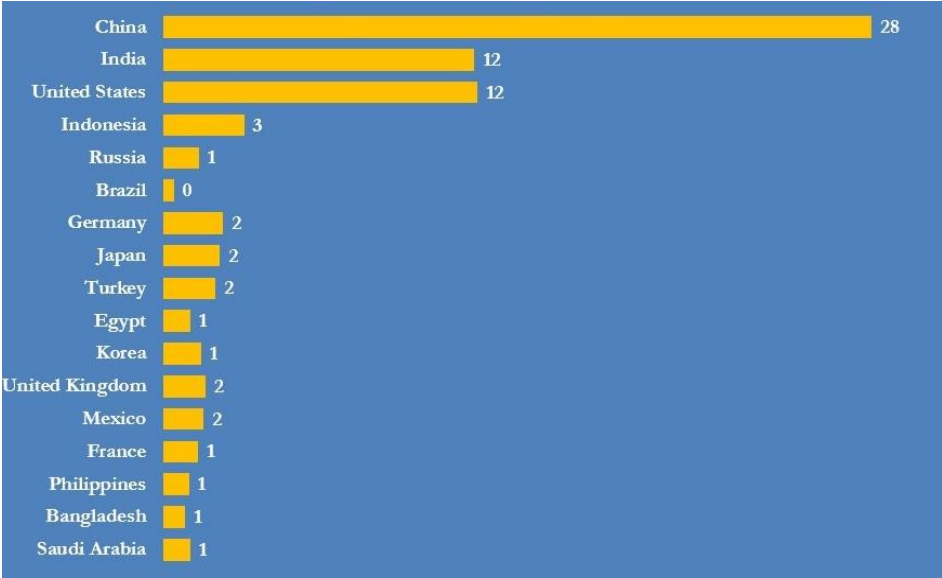
Source: IMF, World Economic Outlook, Oct 2019
Percent of world total growth during the period. GDP at purchasing power parity

Regarding science and technology, and according to an article published by the National Academy of Sciences Journal (2014), China has been rising as a major contributor in the past three decades. Employing an increasingly large labour force of scientists and engineers at relatively high earnings, China is a country that puts to the job market annually more science and engineering degrees than the United States at all levels. In terms of scientific papers produced, right behind the United States, China is the country with the highest number.

The large scale of the Chinese domestic market, allows that more of what is made in China is consumed inside the Chinese market (McKinsey, 2018). Between 2017 and 2018, about 76% of China

GDP growth came from domestic consumption while net trade made a negative contribution to GDP growth (Mckinsey, 2018). In 11 of 16 quarters, from 2015 to 2018, consumption contributed more than 60 percent for the Chinese GDP growth (Figure 2).

Figure 2 - Contribution to GDP growth by expenditure component, %
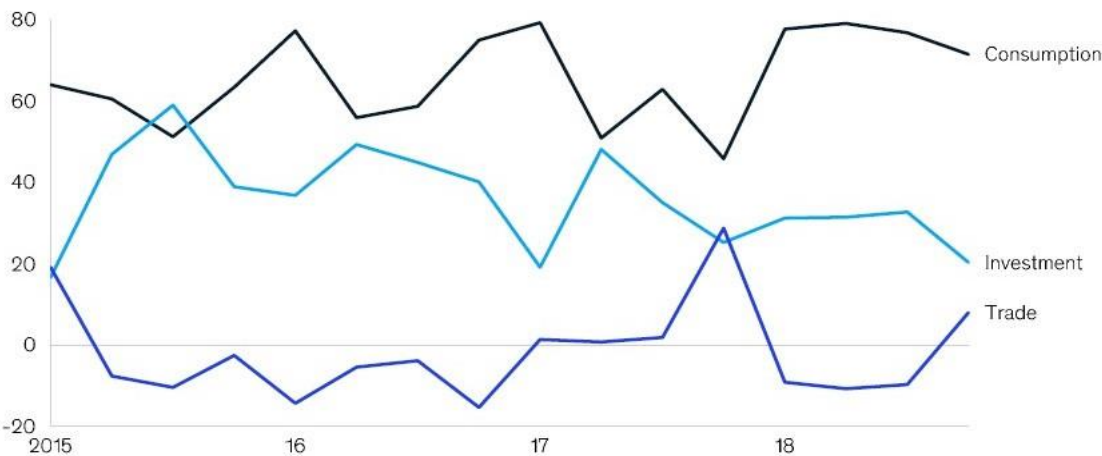
Source: CEIC; McKinsey Global Institute analysis
In 11 of the 16 quarters from 2015 to 2018, consumption contributed more than 60 percent of China's GDP growth

This is being seen, from the surrounding economies point of view, as an opportunity to start exporting their products to the Chinese market. Undoubtedly, this is a way for them to increase their profits and expanding their economies, but on the other hand it is a way to increase their exposure to the Chinese market ups and downs.

China produces 49% of global non-metallic minerals and 53% of global output in textiles and apparel. Along with these, according to McKinsey, the world exposure to Chinese products is declining. This happens due to the fact that, as incomes continue to rise, China's comparative advantage is being lost to other emerging economies where labour costs are significantly lower, like Pakistan, Vietnam, Philippines, among others.

Taking as an example the apparel sector, in 2013 China's exports accounted for 60% of the world production, while as in 2019 this proportion dropped to 51%. According to US Fashion Industry, in 2018, China accounted for between 11% and 30% of world apparel countries, compared with 30% to 50% in 2016 to 2017.

It is important to identify whether this increase in the GDP growth is flowing to other areas where China did not used to be so strong in exports or whether is being absorbed by the internal market.

Also, has mentioned by McKinsey (2018) the world is getting increasingly exposed to China. It is important to verify whether this exposure as more relevance in the case of China or if the exposure is leveraged among the countries here studied. In any of the cases, does this represent a latest trend or historically have always been like that?

2.2 China's increase living standards can benefit the rest of the world

As we live in a globalized world, with growing integration between countries, it is important to underline that a country as China with 1,4 billion inhabitants, compared with the European Union with around 450 million inhabitants or the United States with 330 million, can have a huge impact in the world consumerist economy.

China is increasingly shifting its growth model to one relying more on consumption and less on investment (Wolf, 2018). Chinese consumers over the next decade will be richer, older and more heterogeneous than they are today (World Economic Forum, 2018). As we can see by the analysis of figure 3, China is the country which has been increasing the most its household expenditure since 1996, the earliest value we have on China.

Figure 3 - Households and NPISHs final consumption expenditure (annual % growth)
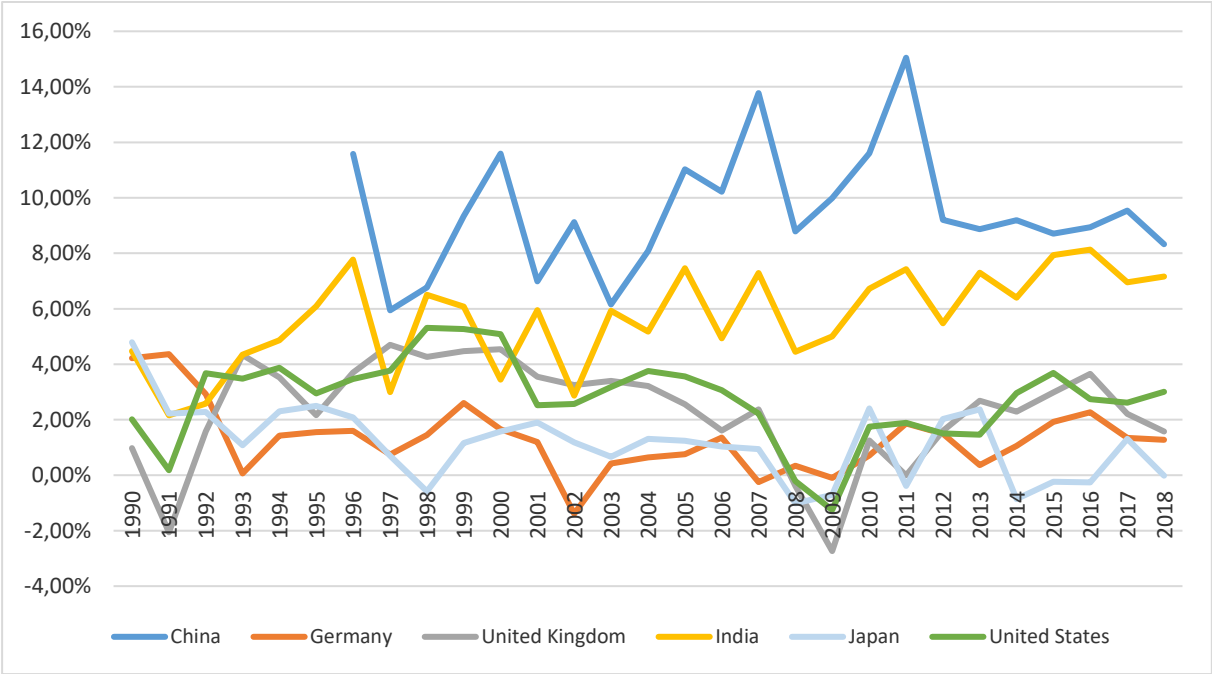
Source: Own Analysis (Data from The World Bank)

Despite accounting for only 10% of global household consumption, China was the source of 31% of global household consumption growth from 2010 to 2017, according to the World Bank.

To support this, the rapid urbanization can and should be taken into consideration, once that it is in the urban areas where the consumption increases the most. As stated by the Economic Systems Journal, the urbanization rate has rapidly increased from 26% in 1990 to 58,52% in 2017.

According to McKinsey (2018), two trends are rising in China that will contribute to business opportunities for both domestic and foreign players: 1) Chinese consumers, as income rises, are demanding more and better choices in goods and services, once they are not satisfied with domestic brands partly because of perceived quality issues and lack of choice; 2) A rising number of Chinese people is going abroad and spending more, particularly as students and tourists.

In the next decade, a mass consumer society will emerge in China, with consumers that will not only be more demanding, but will seek goods and services that enrich their lives (Wolf, 2018). Also, as they move beyond the basics, China's consumers will be looking to their futures: health and wellness and their families' education. (Goldman Sachs, 2015).

According to forecasts from the World Bank, the growth in Chinese consumption is likely to be about 6 trillion dollars from 2018 until 2030. Currently, China has the largest growing middle-class for consumer products, and the greatest potential to challenge the economic, political and technological dominance of the West (Long Range Planning Journal, 2016). This situation, allied with the fact that China is moving into higher value-added industries, can contribute to the exponential increase in the imports from other countries. Not only will it increase the imports of higher-quality goods from advanced economies, but also will increase the imports of more labour-intensive goods from emerging economies, and in this way helping to create more employment in the other economies.

According to the Human Ecology Review Journal (2009) the future growing market in China will no longer be for the basic household products like washing machines and refrigerators, since everyday consumer durables such as these have been commonly owned items.

The one-child policy undertaken by the government between 1979 and 2015, supported the creation of an youth-centred consumption atmosphere, with parents investing more on the education and non-basic needs of their only children (Human Ecology Review Journal, 2009).

According to a survey made by the World Economic Forum in 2018, on 2,300 Chinese consumers of the same age group (1980s generation) and income (lower-middle income), those who identify themselves as preferring a more Western lifestyle spent 4% more than those who prefer a Chinese lifestyle.

The future tendency to follow more westernised lifestyles will have the consumption increased the most on food and beverage, health and wellness activities and recreation, and less impact on categories such as apparel (World Economic Forum, 2018).

According to Euromonitor and McKinsey Global Institute Analysis, as we can see in Appendix 1, China's share of global consumption has grown considerably from 2007 until 2017. Data from 2017 tell

us that the Chinese market accounted, in global terms, for the sale of more than 45% of fish and seafood, almost 45% of electric vehicles and 40% of mobile phones for instance. Furthermore, it is important to underline the growth of areas such like the Luxury Goods and Tourism with an increase of more than 15%, and Box Office with an increase of more than 20% between 2007 and 2017. This can lead us to conclude that the Chinese are expending more in areas of non-basic necessities and, in this way, enriching their lifestyle.

Being the Chinese consumerist market growing a lot, the question that arises is whether this is bringing an opportunity for foreign companies to export more to China or this increase in demand is being in majority fulfilled by in-house production?

2.3 China's exposure to the World

In 1978, Deng Xiaoping launched China in a strategy of "reform and opening up". The country has shifted from a primary economy to an industrialized economy, based on its exports to the developed economies, fuelled by the low labour costs (Garnaut, 2011). By 2009, it has turned into the world larger exporter of goods, and by 2013 turned into the largest trading nation in goods.

China has always taken the role of an exporting country, and in this way, was very dependent on the exports to the developed economies. Because of this, China was highly affected by the 2008 World Financial Crises, with lots of factories being closed off, some of them who were working solely to the international market, leading to an exponential increase of the unemployment (Qin, 2012). However, has China been more or less affected than the rest of the economies by the historical Global Crisis?

Today, China still occupies a very important role in supplying the developed economies, but since the 2008 crises this dependence has been decreasing, once the Chinese government has responded to this crises by launching a stimulus program to secure the economic growth by turning the economy to the domestic consumer market. As also, and according to China Economic Review Journal (2018), China has become less competitive in low-skilled exports, due to the rising labour costs (especially in the coastal area), tightening regulations and currency appreciation.

We may say that China's economy is entering in a new era. Today, domestic consumption is the main driving force of growth, being the country less exposed in economic terms to the rest of the world (McKinsey, 2019). On the contrary, according to McKinsey, the rest of the world is becoming more and more exposed to China, reflecting China's rise to being the world second largest economy.

According to McKinsey, despite in 2019 China having 111 companies on the Global Fortune 500 companies, only 18% of their revenue was earned overseas, while for example in the case of the S&P 500 companies, 44% of the revenue was earned overseas (Figure 4 and 5).

Figure 4 - Number of companies in Global Fortune 500
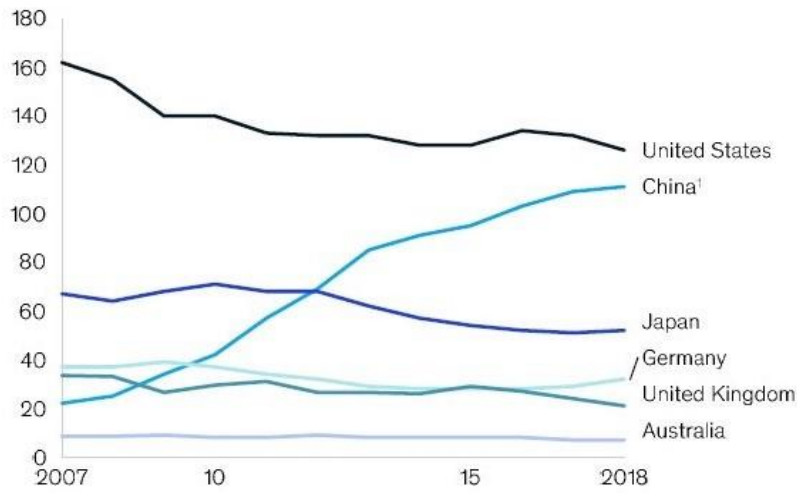
Figure 5 - Share of revenue earned outside home country[1], %
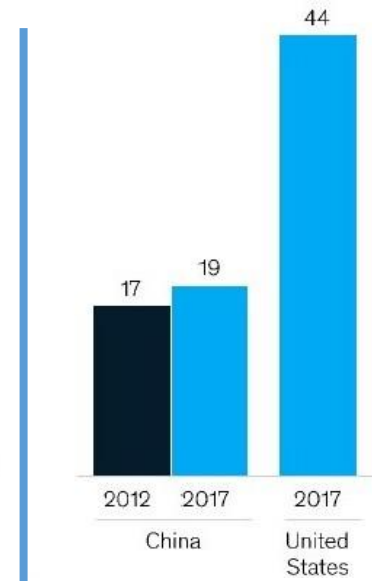
The multinational companies who invested in China, have seen their revenues increased 12 times between 2001 and 2018, according to China's National Statistics Bureau. In 2018, about 80% of non-Chinese fortune 500 companies had an established presence in China.

3. Methodology

The thesis is divided in two types of analysis. One consists of a Microsoft Excel analysis where the historical evolution of the main financial macroeconomics indicators are graphically represented, being of easy interpretation to the reader by the visualization of the graphics. Along with this analysis and using also Excel, a correlogram is made to study the correlation among the stock indices of the countries here studied. The other type of analysis consists of multilinear regression models on SPSS, in order to verify the relevance of the effect of the different independent variables on the several dependent variables used.

Regarding the financial macroeconomic indicators presented in the graphical analysis, these are the GDP growth, the GDP value and the GDP value per capita, as also as the Imports, Exports, FDI Inflows and FDI Outflows, being this last four represented both in value and as a percentage of the GDP.

The quantitative influence of the independent variables is analysed in order to identify whether the independent variables are good to explain the dependent variables or not, and if yes, how much can be explained by them individually. This interdependency represents the second type of analysis made in this thesis and is made with a multilinear regression model in SPSS.

The financial stock market indices are used as the dependent variable, depending on the percentage variation of all the macroeconomic indicators of the respective country as also as depending on the percentage variation of the other world financial stock market indices, in order to identify whether the world indices are interconnected or not and how much do they influence each other's.

The financial macroeconomic indicators used as independent variables in the SPSS analysis are the percentage variation of all the stock indices apart from the index in the dependent variable, as also as the GDP percentage growth, Exports percentage growth, Imports percentage growth, FDI Outflows percentage growth and FDI Inflows percentage growth of the respective country in analysis. Furthermore, the last independent variable is the Dummies. The Dummies are used to represent the occurrence of the crises identified. When the independent variable "Dummies" is equal to one, it represents a period of crises and when is equal to zero represents a period of non-crises.

SPSS analysis was also used to measure the impact of the respective crises in the dependent variable GDP percentage growth. For that, the same multilinear regression model as the one used with the dependent variable "indices" was used, with the same independent variables, but now the dependent variable stock indices was substituted for the dependent variable GDP percentage growth of the respective year of the crises and of the following year of the crises. The usage of the dependent variable GDP percentage growth of the following year is made namely to verify whether the crises have more impact in the GDP of the year of the crises or if it is only reflected in the year after.

A multiplicative dummy variable is also used to analyse whether there is a stronger correlation of the independent variables with the dependent variable "index" in the most recent years or in the earliest years of the study. The independent variable was named "Dummies 2012-2019". A Dummy equal to zero refers to the period between 1990-2011 and a Dummy equal to one refers to the period between 2012-2019.

For the purpose of the SPSS analysis, only the independent variables with values of the Variance Inflation Factor (VIF) below or equal to five were used, once that, above these value, the dependent variables may be highly correlated and therefore exists a problem of multicollinearity, which may inhibit the accurate interpretation of results (Dodge, 2008).

Among the independent variables studied with VIF < 5, there was used a significance of 10% to justify whether the variable has significance or not for the purpose of this analysis. In Fisher (1950), is referred that with a confidence level between 10% and 90%, there is no reason to suspect of the hypothesis tested. So, a conservative approach was used in this study and values with less than 10% were used to statistically admit that the explanatory variable has a significant effect on the dependent variable, being those above this value assumed statistically not relevant.

The last subtitle of the empirical findings provide us a general view over the evolution of household consumption in the countries studied. Graphical analysis are used to explain the evolution of the household consumption, namely a graphic representing the Households and NPISH's Final Consumption Expenditure annual percentage growth and a graphic representing the Household Savings as a percentage of Household Income.

4. Empirical Findings

4.1. Chinese overview over the main macroeconomic indicators

According to Appendix II, with data from The World Bank, we can take some considerations regarding the historical evolution of the main macroeconomic indicators.

China has been always a country with a high GDP growth. Despite having already gone through is maximum peak of growth, and the growth is being continuously slowing down, it continues to be the country with the highest annual GDP growth of the countries studied. During the 2008 crises, it is very noticeable that all the countries have suffered a negative impact in the GDP growth. Even though China has suffered a decline in his growth, it was not as relevant as in the other countries.

The 2008 crisis brought up to light China´s capacity to rescue an economy emerged in a world in crisis. Taking into consideration the GDP evolution in USD, we can clearly see a turnaround in the value of the GDP when compared to the other economies studied. From 2008 on, the value of China GDP has grown in a fast pace.

China has been increasing its role as an exporter gradually since 1990. After the Dotcom crises (2000-2002) until the Global Financial Crisis (2008-2009), China exports as a percentage of GDP grew exponentially, letting China a lot dependent on its exports. China products were cheaper, and lots of foreign companies have started to import these products and started to implement their manufacturing production in China where labour costs were significantly lower, there were not so demanding laws regarding working conditions and the environmental regulations where smoother.

After the Global Financial Crisis, China's government has implemented politics that helped turning the production of the companies to the domestic market. China exports as a percentage of GDP started to decline gradually, turning China less dependent on foreign countries imports.

Regardless of having decreased its exports as a percentage of GDP, the value of China's exports in USD has continued to increase after the 2008 crisis. This increase in the value of GDP and at the same time decrease in the value of exports as a percentage of GDP is justified by the fact that the domestic market consumption has been increasing. In USD, since 2017, China has been the country with highest exports value.

The imports value presented by China have been the second highest among the countries studied since 2009. This is another indicator that tells us that Chinese consumers are increasingly expending more, and this exponential increase matches with the decrease of the exports as a percentage of GDP. We can not only conclude that China is producing more to the domestic market but also that it is importing more, and all of this has been happening since the Global Financial Crises.

Although the imports are being increasing exponentially, the GDP is increasing even more, once that the imports as a percentage of GDP have been decreasing gradually over time.

The Global Financial Crises has changed the way China interacts with the world. Despite the imports and exports having continued to grow after the crises, when we put it in perspective with the GDP, the increase is a lot smoother than the GDP increase.

In terms of the FDI Inflows, since 2017 China is the second country with higher value, right behind the United States, meaning that foreign companies are investing in the Chinese market. This is contributing to the development of the country at all levels. Not only companies bring with them technology and new work procedures, but also bring the development of new infra-structures, more employment, new ideas and consumption habits that will slowly become part of the Chinese culture. This new habits create new needs, increasing in this way the consumption of the population and the opportunity for more foreign companies to export their products.

On the other hand, in FDI Outflows, there is not great relevance of China when compared to the other countries of this study.

All in all, China has been paving his way as an increasing consumerist country, once that his GDP has been increasing by putting more production in the domestic market and his imports and FDI inflows have also been increasing. In this way, we can conclude that this gigantic market is getting increasingly more interesting for the firms all over the world, not so much because of the cheap labour country which once was but as the big consumerist market it represents.

4.2. Interdependence of the Markets

According to Kyle Atkinson (2015), all the major stocks in the world are interconnected. By the analysis of the correlation among the stocks studied (table 1), we can see that, in general terms, all stocks have a strong correlation among themselves, apart from the Japanese Stock Index.

Table 1 - Correlation among stock indices

	S&P500	SSEC_adj_USD	HSI_adj_USD	NI225_adj_USD	Dax_adj_USD	SENSEX_adj_USD	FTSE100_adj_USD
S&P500	1,00						
SSEC_adj_USD	0,71	1,00					
HSI_adj_USD	0,87	0,88	1,00				
NI225_adj_USD	0,18	0,00	0,07	1,00			
Dax_adj_USD	0,91	0,82	0,93	0,16	1,00		
SENSEX_adj_USD	0,77	0,83	0,95	0,66	0,88	1,00	
FTSE100_adj_USD	0,94	0,70	0,86	0,13	0,89	0,67	1,00

Source: Own Analysis (Data from Yahoo Finance)

This outlier led us to the conclusion that the Japanese Stock Market cannot be considered as an example for the world stock market evolution. So that, it is not advisable to invest in it having as an example the other world stocks evolution, as it does not follow the same patterns.

However, it is important to refer that the correlation between the Chinese and the Japanese stock market is 0,66, suggesting that a strong correlation exists between these two markets. Taking a closer look at the other correlations, we can see that the weakest one is 0,67, between the United Kingdom and the Indian stock market, and even this one can be considered by definition as being a strong correlation.

Which is the most explanatory stock market?

After considering the correlation among the major stock markets, it is important to conclude which is the stock market that in general terms is more correlated with the others. Analysing the average of the correlation values, those that have a higher correlation between the stock indices of reference and the others are, in downward order: SENSEX, DAX, HSI, S&P500, FTSE100, SSEC and NI225 (Table 2).

Table 2 - Stock Indices average correlation (Japan Included)

S&P500	0,73
SSEC_adj_USD	0,66
HSI_adj_USD	0,76
NI225_adj_USD	0,20
Dax_adj_USD	0,77
SENSEX_adj_USD	0,80
FTSE100_adj_USD	0,70

Source: Own Analysis (Data from Yahoo Finance)

SENSEX, being the index with the higher correlation value (0,80), denotes a value which is very dependent on the value of the outlier NI225, where on the contrary of the others has an unusual high value of 0,66. Being an outlier that does not reflect the reality of the patterned stock markets, we should take it from the model in order to explain it better. When taking this value from the model, the results given (Table 3) show us that HSI Index is the one more correlated with the world stock markets, followed by DAX, S&P500, SENSEX, FTSE100 and last SSEC.

Table 3 - Stock Indices average correlation (Japan Excluded)

S&P500	0,84
SSEC_adj_USD	0,79
HSI_adj_USD	0,90
Dax_adj_USD	0,89
SENSEX_adj_USD	0,82
FTSE100_adj_USD	0,81

Source: Own Analysis (Data from Yahoo Finance)

Summing up, it might be said that the Chinese stock market, more precisely the one located in the Chinese special administrative region of Hong Kong, is the one more correlated with the other stock markets and should be taken as a role model when looking at the market as a whole.

How much can be explained by the independent variables?

Basing our analysis on the SPSS multilinear regression output (Appendix III), it is important to identify how much a stock market is influenced by the macroeconomic indicators of his country and the other countries stock indexes. For a significance level of 10%, we can see that little variables have significance to explain the dependent variables, being the great majority of them indexes.

So that, among all the macroeconomic indicators used to explain the dependent variable, we can see that the indexes are influenced only by the other countries indexes, with little exceptions. Not being influenced by the respective country macroeconomic indicators, it lead us to conclude that more important than the GDP or the Trade balance or any other macroeconomic indicator analysed, before investing in any country index, it is important to see the evolution of the surrounding economies main stock indexes. It is curious to notice that, being the financial stock index composed by the main listed companies of the country, it is not influenced by the performance of the companies which we are indirectly analysing with these macroeconomic indicators.

In terms of percentage variation of the indices, for a significance level of 10%, the independent variables which are statistically relevant to explain the model are the ones represented in the following table.

Table 4 – Influence of the Independent Variables on the Dependent one (%)

VARIABLES		Independent									
D		**S&P500**	**SSEC**	**HSI**	**NI225**	**DAX**	**SENSEX**	**FTSE100**	**China Imports**	**Japan FDI Inflows**	**India GDP**	**Dummies**
e	**S&P500**				0,372%	0,308%						
p	**SSEC**			0,814%	-1,771%		0,845%					
e	**HSI**						0,464%	0,942%	0,584%			
n	**NI225**	0,438%	-0,216%				0,363%			0,006%		
d	**DAX**	0,975%		0,372%								
e	**SENSEX**		0,354%		0,842%						8,621%	0,022%
n	**FTSE100**	0,458%										
t												

Source: Own Analysis (Data from Yahoo Finance)

For S&P500, each time the NI225 increases one percentage point, the S&P500 increases 0,372% while each time the DAX increases one percentage point, it increases 0,308%.

For SSEC, each time HSI increases one percentage point, it increases 0,814%, while each time NI225 increases one percentage point it decreases 1,771% and in the case of an increase of SENSEX, it increases 0,845%. We can see that the main stock index in Mainland China is hugely impacted by the Hong Kong and the Indian main stock index.

For HSI, each time the SENSEX increases one percentage point, it increases 0,464%, while if FTSE100 increases one percentage point it increases 0,942%. The HSI is also sensible to China Imports, increasing 0,584% each time China Imports increase one percentage point. This can be justified by the great importance Hong Kong has as the main door to mainland china imports and exports. It is also important to refer that, according to the value of the Adjusted R Square, 90 per cent of the HSI can be explained by the independent variables, namely the SENSEX, FTSE100 and China Imports.

For NI225, it is impacted the most by S&P500, increasing 0,438% each time the S&P500 increases one percentage point, while when SENSEX increases one percentage point the NI225 increases 0,363%. The NI225 decreases 0,216% when there is an increase in the SSEC. The Mainland China index is the only one having a negative impact in the Japanese index, mirroring the negative effect that the Japanese Index also and exclusively has in the Mainland China index.

For the DAX, each time the S&P500 increases one percentage point, it increases 0,975%, meaning that S&P500 has a huge impact in the evolution of this index. As also, 0,372% of the increase of DAX can be explained by the increase of one percentage point of HSI.

For SENSEX, the increase of one percentage point of India GDP leads to an increase of 8,621% in SENSEX. Analysing this increase, we shall admit that the Indian stock index is hugely impacted by the GDP so, before investing in it, the GDP and its predicted evolution is a vital point to take into consideration.

The SENSEX is also impacted by NI225, once when the NI225 increases one percent, the SENSEX increases 0,842%. With one percentage point increase in the SSEC the SENSEX increases 0,354%.

The FTSE100 index is the only index with just one relevant explanatory independent variable. This explanatory variable is the S&P500 where each time it increases one percentage point, the FTSE100 increases 0,458%.

The crises effect, represented in the model by the Dummies, has little or no effect in the indexes. For a significance level of 10%, only SENSEX is impacted by the crises and the impact is small, with a decrease of 0,022% in a period of crises.

Having per base that each stock index is significantly more influenced by the rest of the world economies stock indexes than by his own macroeconomic indicators, we can clearly admit that the globalization has changed the way we analyse the economic performance and evolution of a country. More and more, closer attention has to be payed to the market as a whole. The existence of a market economy takes us to the conclusion that every time there is an oscillation of an economy in one corner of the world, it is very likely that this oscillation is going to be felt in the opposite corner.

Accordingly, it is primordial not only to look at the respective macroeconomic indicators when analysing a specific economy, but also to take special attention to the major events that are shaping the world economy, once that sooner or later they will bring repercussions in the economy that one's investor is pretending to invest on.

4.3. Today's correlation between the Chinese Market and the World

After analysing the historical data of the last 29 years, it is important to analyse what is the latest trend of correlation between the Chinese Market and the World. To analyse this latest trend, the period between 2012 and 2019 was taken in consideration.

The year 2012 was chosen once it is a reference for China's government. In 1990 a two-term limit on the presidency was imposed, albeit in 2018 this imposition has been scrapped, paving the way for the actual president Mr Xi Jinping, to remain president for life if he wishes. So that, since 2012 China has a president that represents a new era in China's governance, having the possibility to stay in the governance of the country for the time he wants.

To analyse the correlation in a most recent period of time between one stock index and the others, the analysis of the "Dummies 2012-2019" is done, with a dummy equal to zero for the period between 1990-2011 and a dummy equal to one for the period between 2012-2019. By the analysis of the independent variable "Dummy 2012-2019" we can conclude whether the difference between the two periods is relevant or not.

Following this analysis, we reach the conclusion that, for a significance level of 10%, the independent variable "Dummies 2012-2019" is not relevant to explain none of the dependent variables analysed, once all the sig.>0,1 (Table 5). For this reason, we can conclude that there is not great difference between the historical period and the more recent period of analysis.

Table 5 - Significance level of the independent variable "Dummies 2012-2019"

Dependent Variable	Sig.
S&P 500 (% Growth)	0,639
SSEC (% Growth)	0,402
HSI (% Growth)	0,450
NI225 (% Growth)	0,886
DAX (% Growth)	0,507
SENSEX (% Growth)	0,372
FTSE100 (% Growth)	0,875

Source: Own Analysis (Data from Yahoo Finance)

Once two of the independent variables of the models analysed are the SSEC and the HSI, and there is no significance of the "Dummies 2012-2019" in the model, we can assume that, the correlation between the Chinese market and the rest of the markets in the study, does not assume a significant difference when we compare the period of 1990-2011 and the period of 2012-2019.

4.4. The economies who have suffered more with the crises

Having per base the SPSS multilinear regression output, the countries were the financial crisis had more impact, are identified.

In SPSS, this crises are represented by the "Dummies". Being the GDP an important macroeconomic indicator, providing information about the size and the way an economy is performing (IMF, 2019), it is used in this study as a dependent variable to measure the impact of the independent variable "Dummies".

Taking the percentage growth of the GDP as the dependent variable, and for a significance level of 10%, we can see that, among the 6 economies studied, in 2 of them, the financial crisis identified had a relevant impact, once that the sig. < 0,10 (Table 6).

Table 6 - Significance level of the independent variable "Dummies", GDP Year X

Dependent Variable	Beta	Sig.
China GDP (% Growth)		0,810
Germany GDP (% Growth)	-1,458	0,041
United Kingdom (% Growth)		0,609
India GDP (% Growth)	-1,166	0,057
Japan GDP (% Growth)		0,435
United States GDP (% Growth)		0,435

Source: Own Analysis (Data from Yahoo Finance)

The countries which had a more relevant impact from the financial crises during the analysed period are, in descending order Germany and India. It is important to underline that in both countries the impact of the crises is negative. For Germany, on average, the existence of a financial crises, leads to a decrease of 1,458% in the GDP, while for India this decrease is of 1,166%.

Germany is a country a lot dependent on the exterior. Both its exports and imports as a percentage of GDP over more than 20 years represent the highest value among the countries studied. So, we can conclude that, their dependency on external economies, can lead to a higher oscillation when there is a global financial crises, placing Germany in a more vulnerable place.

In India's case, the exports of goods and services as a percentage of the GDP, as well as the imports of goods and services as a percentage of the GDP, have the third highest value.

By the analysis of this two situations, we can see that, having per base this 6 countries, when the imports and exports as a percentage of GDP increase, the country gets more exposed to the impact of the global crises.

Taking a closer look at China, we can see that it is a country less exposed to the oscillations of the external market and in this way less exposed to those crises which are global. This can be observed not only by the fact that the dummies do not have a relevant impact in the GDP, but also with other macroeconomic indicators. By the observation of the graphics in the Appendix II, we can see that China exports and imports of goods and services as a percentage of the GDP are not as relevant as in the majority of the countries in the study. For China, neither the FDI inflows as a percentage of GDP, nor the FDI outflows as a percentage of GDP, assume a relevant value, being this another signal that the external transactions of capital, also do not assume great relevance when compared with China GDP.

This analysis is done having per base the GDP of the respective year of the crises. Although, it is relevant to verify if the crises have any impact in the GDP of the following year (GDP Year X+1). Placing the GDP of the following year as the dependent variable, the multiple linear regression analysis is done.

After this analysis, we can conclude that none of the independent variable "Dummies" has significance to explain the model, once all the sig. > 0,1 (Table 7).

Table 7 - Significance level of the independent variable "Dummies", GDP Year X+1

Dependent Variable	Sig.
China GDP Year X+1 (% Growth)	0,467
Germany GDP Year X+1 (% Growth)	0,361
United Kingdom GDP Year X+1 (% Growth)	0,886
India Year GDP X+1 (% Growth)	0,830
Japan Year GDP X+1 (% Growth)	0,960
United States Year GDP X+1 (% Growth)	0,137

Source: Own Analysis (Data from Yahoo Finance)

To conclude, there are only two countries where the Dummies had an impact, and this impact was only felt in the GDP of the year of the crises. By this, we can conclude that, the Global Crises felt since 1990 until now, did not have a significant impact in the GDP of countries like China, Japan, United Kingdom and United States.

4.5 China's evolution of household consumption

Another important thing to conclude is the behaviour the domestic market is having. As mentioned above, the consumer market is increasingly absorbing more products, whether in-house manufactured, justified by the disproportionate increase in the GDP when compared with the exports, whether imported products, justified by the exponential increase in the imports (Appendix II).

The increase in the household consumption expenditure can be seen in figure 6. China percentage of consumption household expenditure annual growth was more than 8% in 2018. This value represents more than the double of the value for the same year of the rest of the economies in the study, apart from India.

Figure 6 - Households and NPISHs Final Consumption Expenditure (annual % growth)
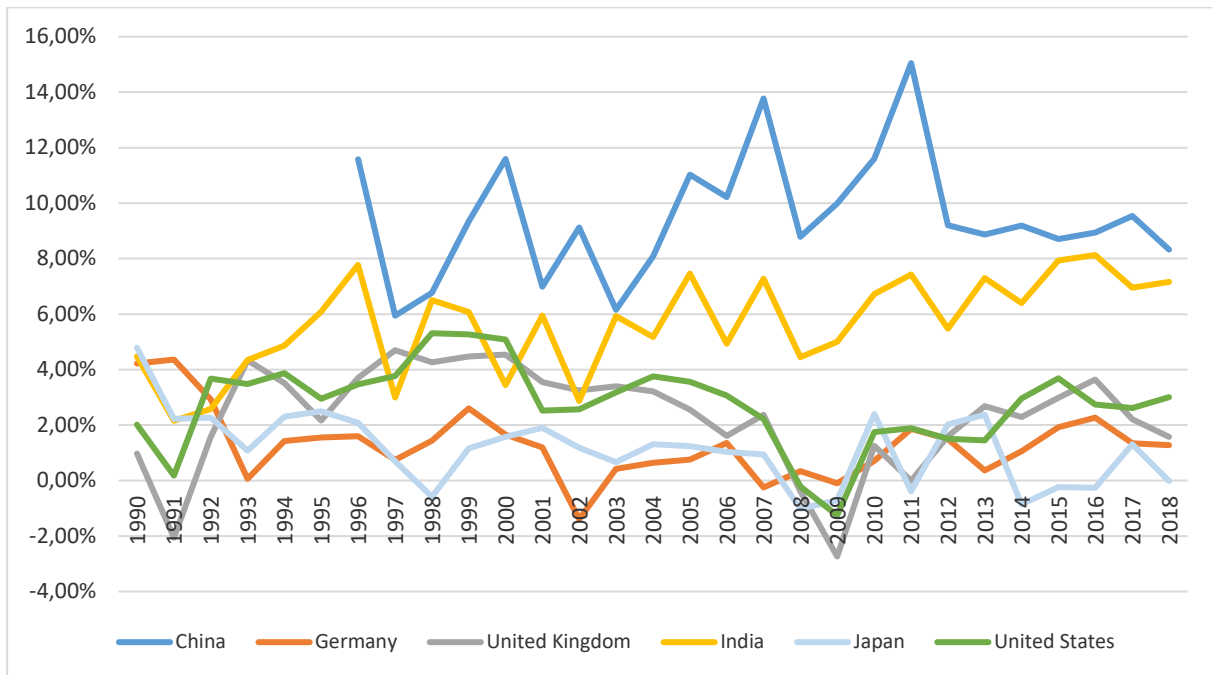
Source: Own Analysis (Data from The World Bank)

As developing countries they are, China and India will always be more prone to increase their household consumption. As they make their steps to development, wages are going to increase, rising in this way the number of upper-middle-class and affluent households. The education is going to get better and the need to increase their quality of life likewise the developed countries is going to emerge, creating a new generation of freer-spending sophisticated consumers. In this way, it is natural to see China and India, among the countries here studied, as the one's growing more in terms of household consumption expenditure.

The rise of consumption in China can have its major justification in the rise of household income. The number of households in the mass affluent category and above is increasing (households with monthly disposable incomes of 18.000 RMB (2600 dollars) or more). Taking in consideration the year of 2010, 3% of the population was in the mass affluent category while in 2018 this number was 12% and is expecting to grow up to 58% by 2030, according to McKinsey (2018).

The amount of money that is being saved by the households can also be a valuable indicator in order to verify whether the households still have any gap of money to expand their consume or whether they are already spending a great majority of their incomes. According to the analysis of the figure 7, "household savings as a percentage of household income", we can clearly verify that China has the highest historical value in savings as a percentage of the total household income, by a great difference.

Figure 7 - Household Savings as a percentage of Household Income
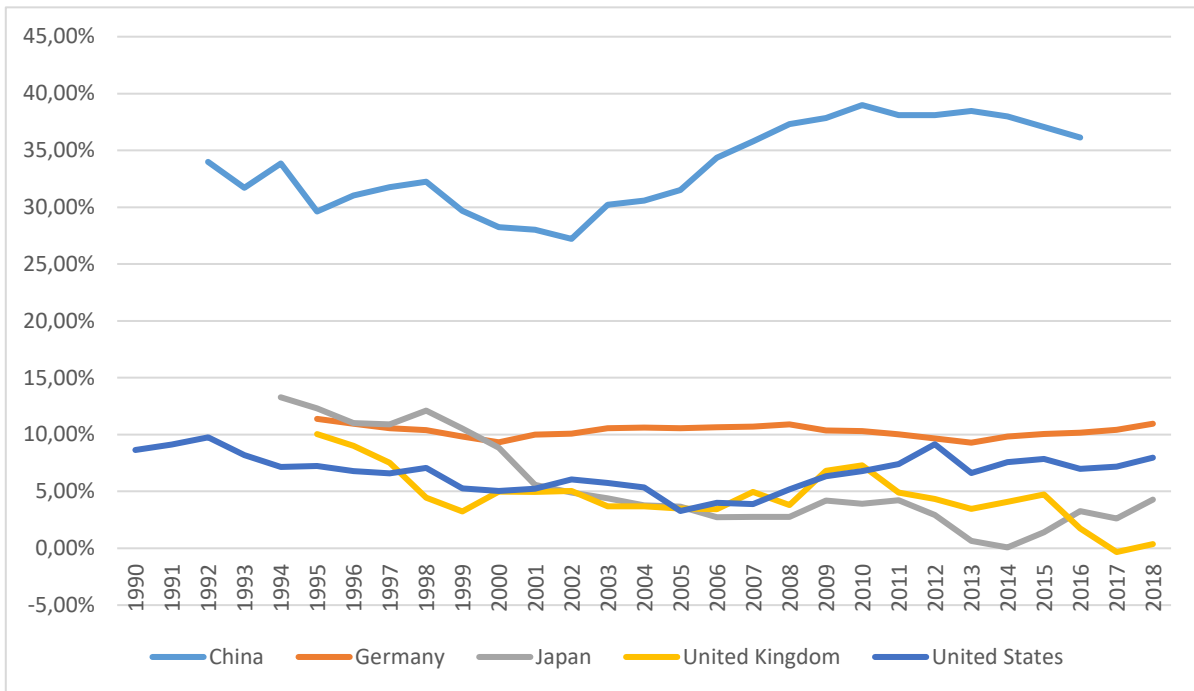
The value of these savings have never been less than 25% of the disposable income, being more than 35% if we analyse the latest data we have on China, in the year 2016. This exponential increase is not justified only because consumers are saving more, but also because they are earning more money now as a consequence of the development of the economy.

This trend of high amount of savings is not verified in the rest of the countries analysed. On the contrary of China, and except for India where there is no existing data regarding this topic and so we cannot reach any conclusion, the rest of the countries have way lower values. Historically, these countries have never had values above 15%, being the most recent values all under 10%, except from Germany with a value slightly above 10%. By this, we can conclude that China is the country where households have more capacity and probability to increase their spending, once that are also the ones with higher savings as a percentage of the disposable household income. With the increase in the development of the country, with more educated citizens and following the trend of globalization, it is very likely that the Chinese consumers are going to decrease their savings in order to prioritize a more consumerist lifestyle. In this way, we can conclude that, this is another indicator that lead us to conclude that China is a great market to where foreign companies can expand their products.

Regarding the luxury market, Chinese consumers are becoming major costumers of worldwide brands too. According to China Luxury Report by McKinsey, in 2018 the Chinese population was responsible for 32% of the world purchase of luxury goods, and is expected to be responsible for 35% in

2020 and 40% by 2025. The compound annual percentage growth of China's increase in the consumption of luxury goods between 2012 and 2040 is of 6% when compared with 2% in the other worldwide economies. This can also give us a clear view that not only the Chinese consumers are increasing a lot their household incomes but they are more and more spending it in goods and services that are far from the basic needs (Figure 8).

Figure 8 - Global personal luxury goods[1] market evolution, RMB[2] billion
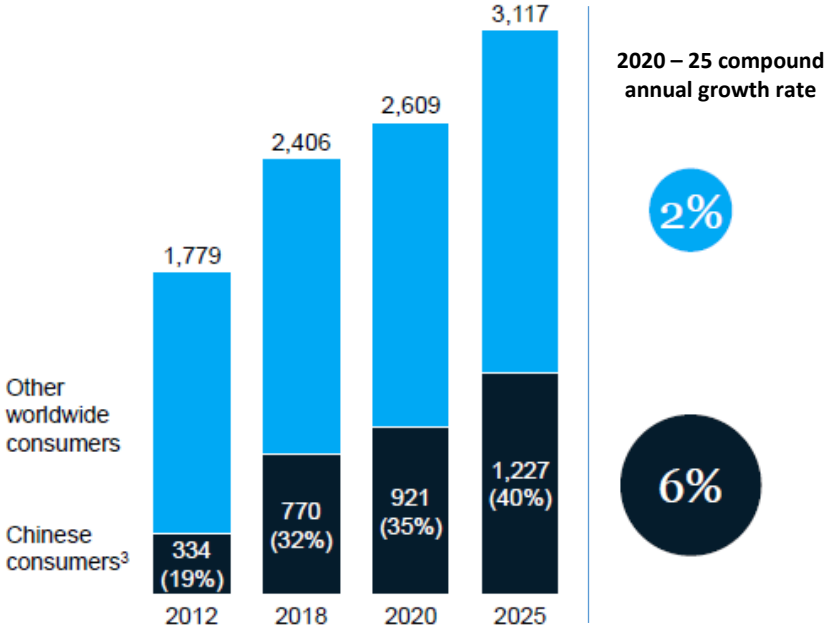
[1] Ready to wear, accessories, watches and jewelry, and beauty.
[2] Fixed exchange rate of 1€ = 7.3 RMB.
[3] Both domestic and overseas spending.
Source: China Luxury Report 2019; China Luxury Report 2017

All in all, there are several indicators that lead us to characterise the Chinese consumerist market as one of the most desirable markets to be in as a seller, being increasingly important for worldwide firms to take it in consideration in order to have the opportunity to increase their sales exponentially, mostly in areas of needs that go beyond the basic.

5. Conclusion

"If China and the world were to diminish their engagement with each other, both could lose significant value. Conversely, further deepening of their integration could produce large benefits." (McKinsey, 2018)

The main motivation behind the development of the theme of this thesis was having lived in China in the second half of 2019. Having been an observant consumer in a market absolutely different from the rest of the world major developed markets, made me wonder about the exponential way China is developing itself, whether the global crises have made in China a significant impact and whether this impact was positive or negative. As also, from an investor point of view, the consumer market in China has caught my attention for being evolving so rapidly.

This thesis analyse the historical performance of a variety of macroeconomic indicators in the six countries where the GDP was higher in 2019, namely the United States, China, Japan, Germany, India and United Kingdom. Graphical analysis are made in order to take the major conclusions about the evolution of GDP, Exports, Imports, FDI inflows and outflows. The evolution of household consumption is also studied, with graphical analysis on the household consumption expenditure annual percentage growth and on the household savings as a percentage of household income.

Using multilinear regression models, conclusions about the interdependency of stock indices are taken. Also, with SPSS multilinear regression model, the relevance of the crises impact in the respective countries GDP is measured whether this impact is felt in the year of the crises whether it is felt in the year after. The different types of analysis are always made taking a special look at China's case.

Summing up the main conclusions of these analysis, China's GDP has been growing a lot in the latest years, reinforcing in this way the historical role of China as the country with the higher percentage growth of GDP. Regarding trade, China exports represent an historical high value, being the country that has exported more value in 2018. In imports, although the historical value has never been among the highest, from 2010 on, China has placed itself right behind the United States as the second most importing country. In terms of China FDI, we should highlight the performance of the FDI inflows once that, despite not assuming a great relevance when we put it in perspective with the GDP, the value in USD represent the second highest right behind the United States, meaning that international firms are everyday betting more on China has the destiny of their invested money.

For a future investigation on this subject, it is advised to include other countries from Southeast Asia which are having also exponential increases regarding growth and development. These countries can also

be an excellent opportunity to investors. As also, adding more financial and macroeconomic indicators to the study could be a plus, once that these could help to explain better the model.

To conclude, the conciliation of this financial and macroeconomic indicators, constitutes an opportunity to worldwide firms that want to expand their products to a consumerist market as China. China is getting everyday more developed, integrated with the world economies and with a more sophisticated consumerist market, whose needs most of the times cannot be fulfilled by the existing products.

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Annexes

Annex A – China's share of global consumption
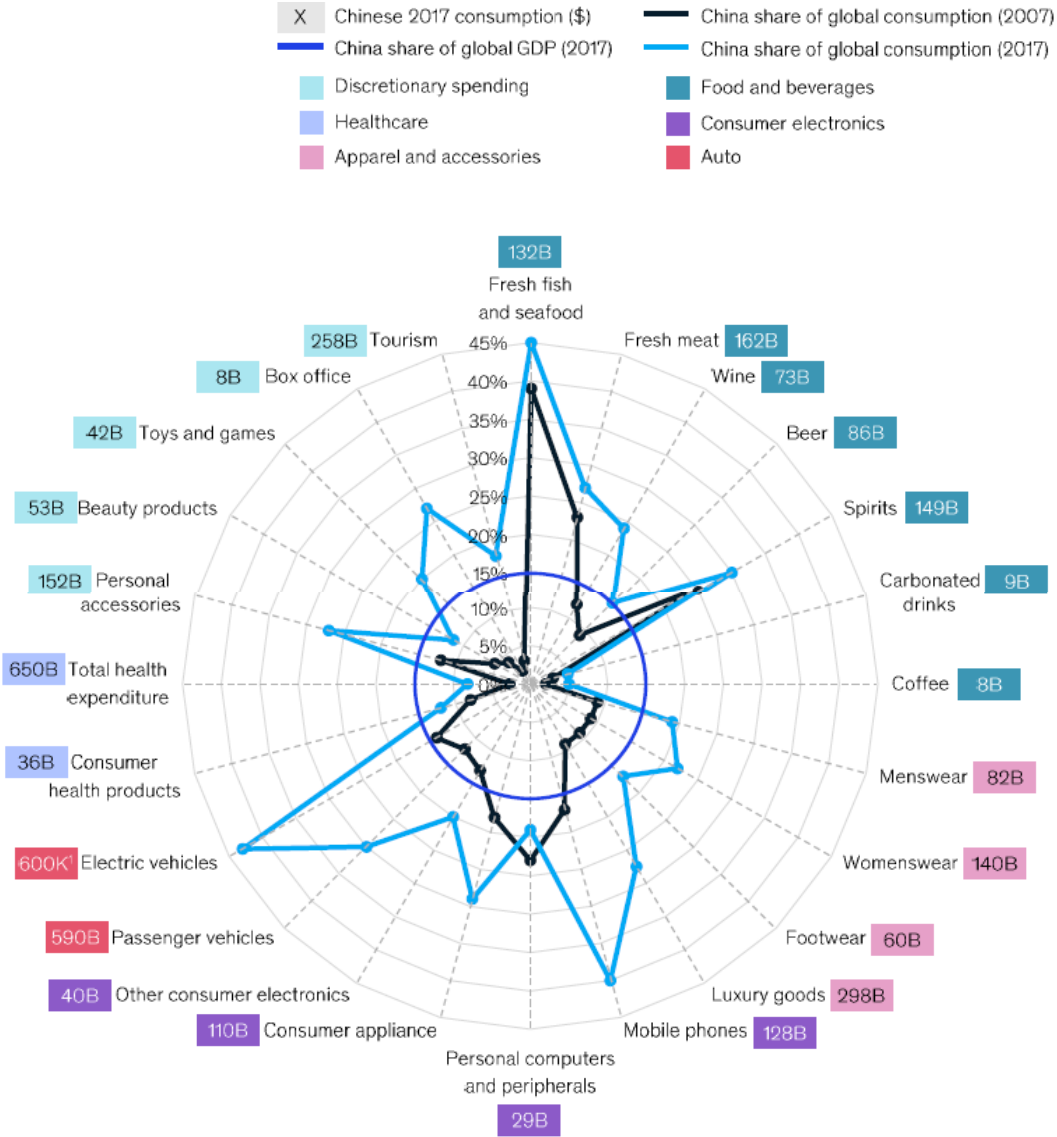
¹ Units, not dollars.
Source: Euromonitor; McKinsey Global Institute analysis

Annex B – Macroeconomic Indicators
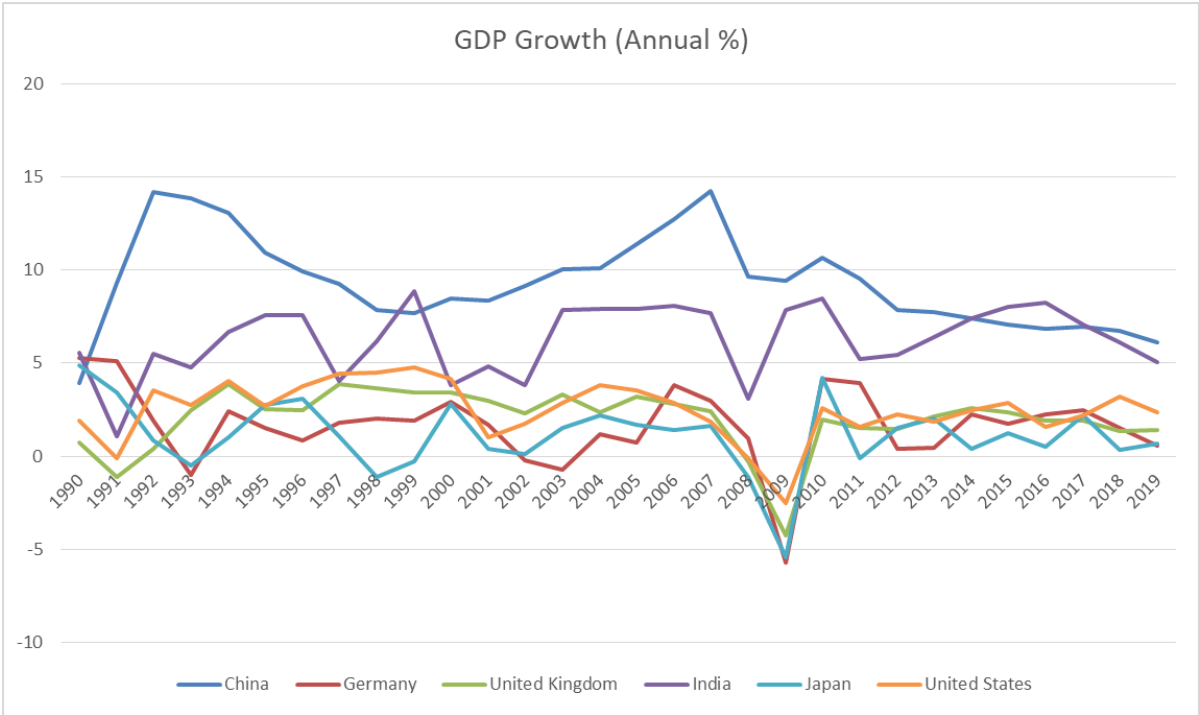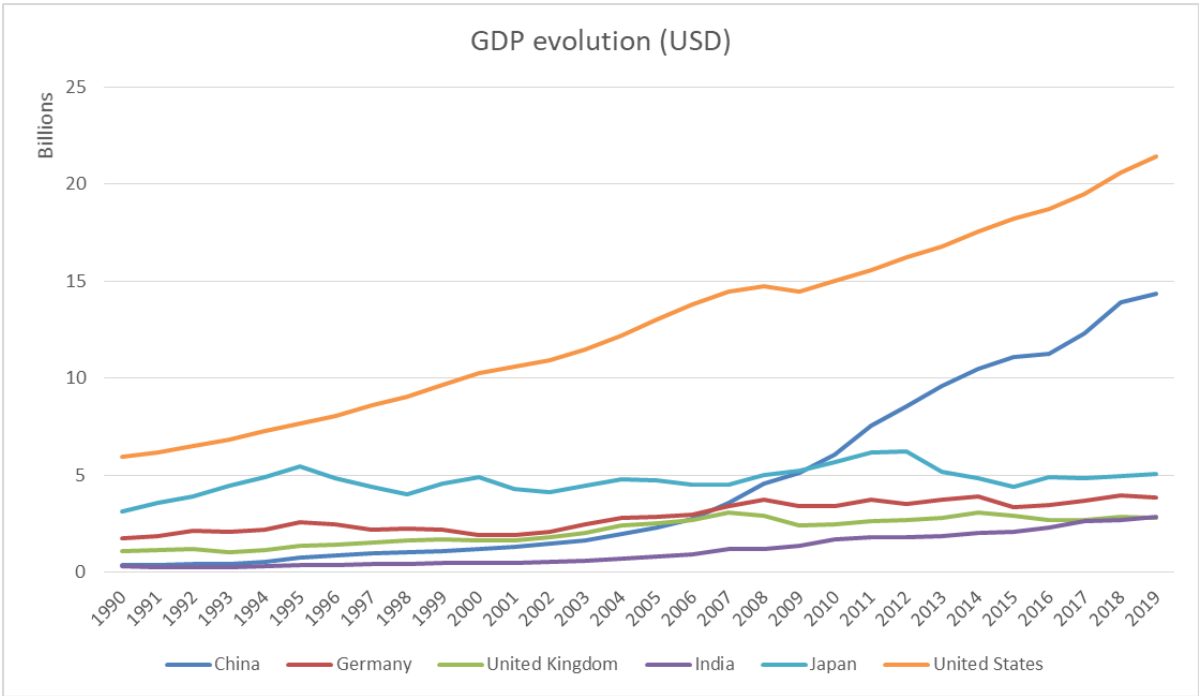
GDP Growth (Annual %)

China   Germany   United Kingdom   India   Japan   United States

Source: Own Analysis (Data from The World Bank)

GDP evolution (USD)

China   Germany   United Kingdom   India   Japan   United States

Source: Own Analysis (Data from The World Bank)

GDP per capita (current USD)

Source: Own Analysis (Data from The World Bank)

Exports of goods and services (% of GDP)

Source: Own Analysis (Data from The World Bank)

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Source: Own Analysis (Data from The World Bank)

Source: Own Analysis (Data from The World Bank)

Source: Own Analysis (Data from The World Bank)

Source: Own Analysis (Data from The World Bank)

Foreign direct investment, net inflows (% of GDP)

Source: Own Analysis (Data from The World Bank)

Foreign direct investment, net outflows (BoP, current US$)

Source: Own Analysis (Data from The World Bank)

Foreign direct investment, net outflows (% of GDP)
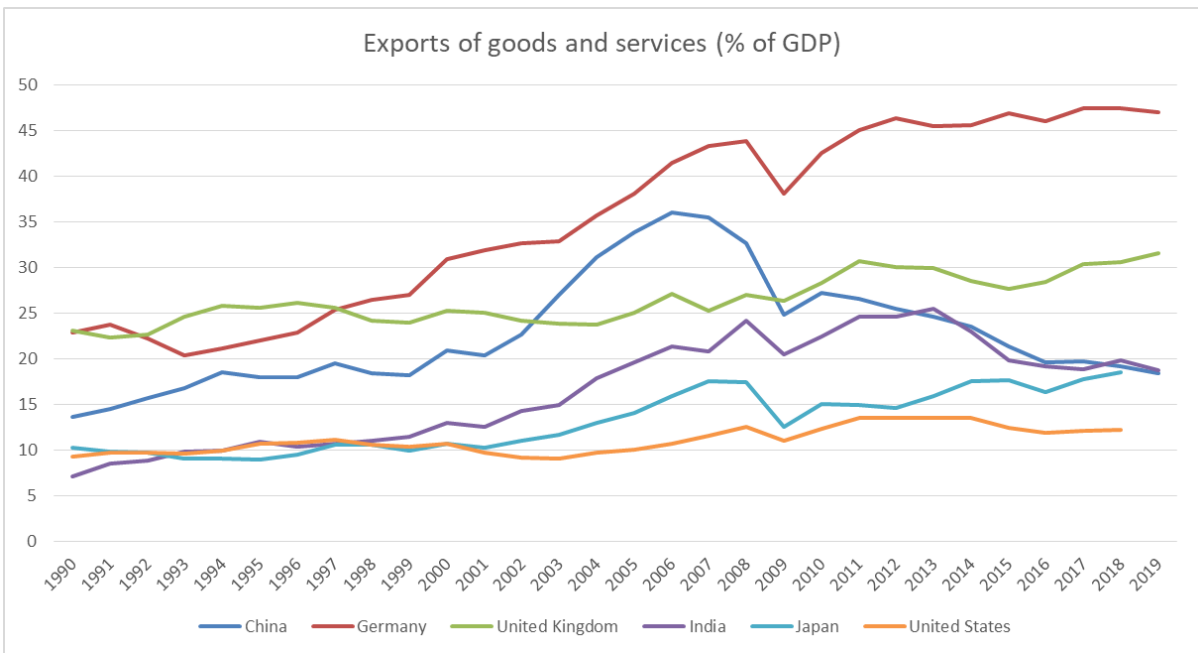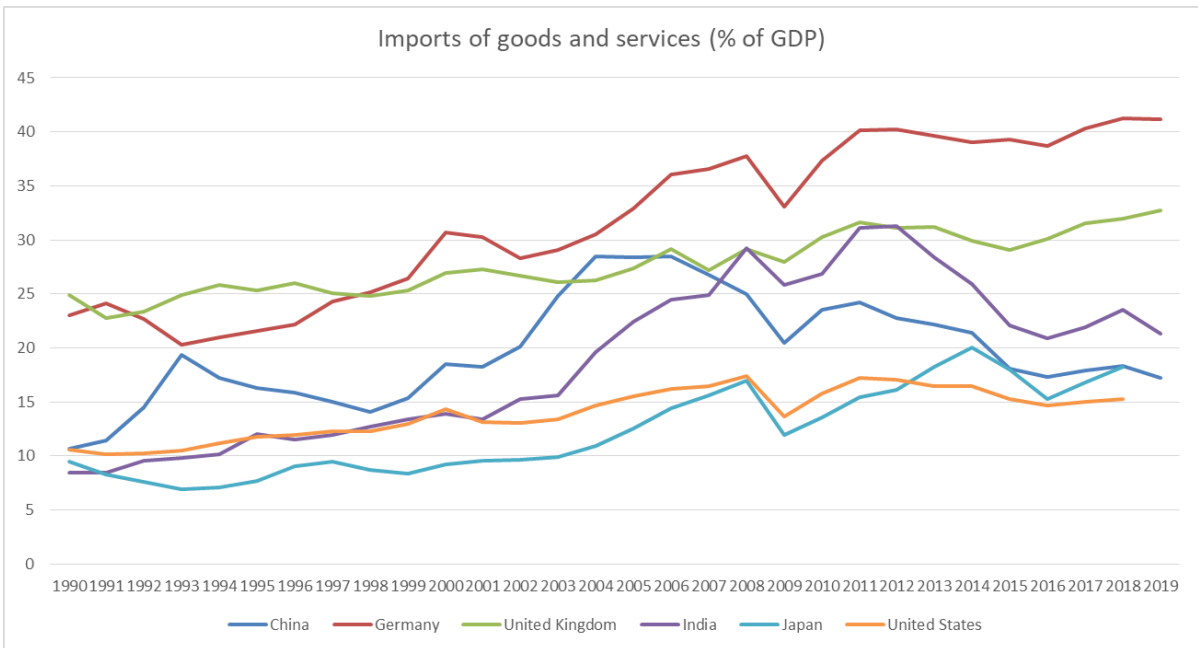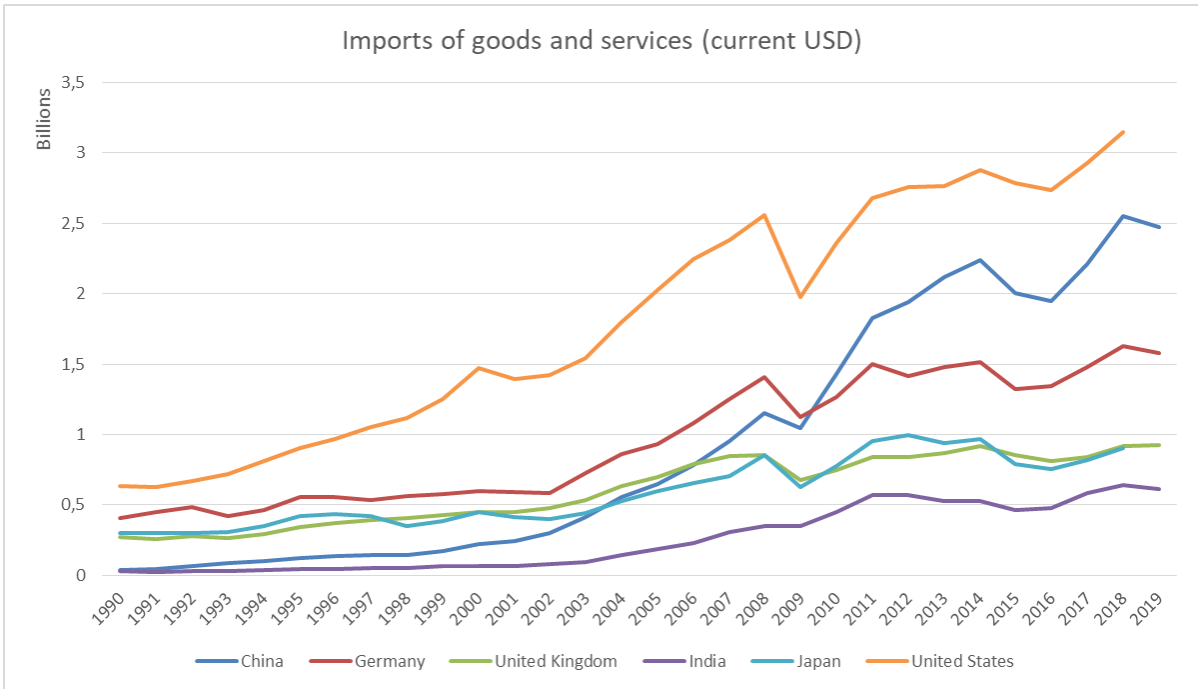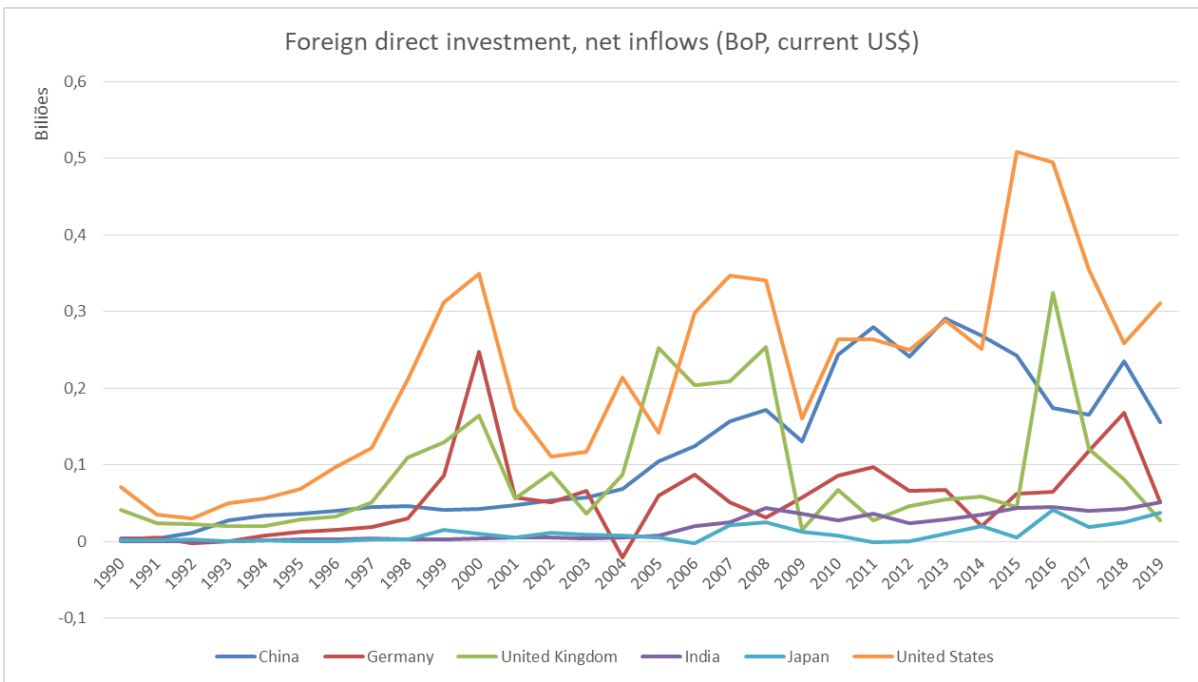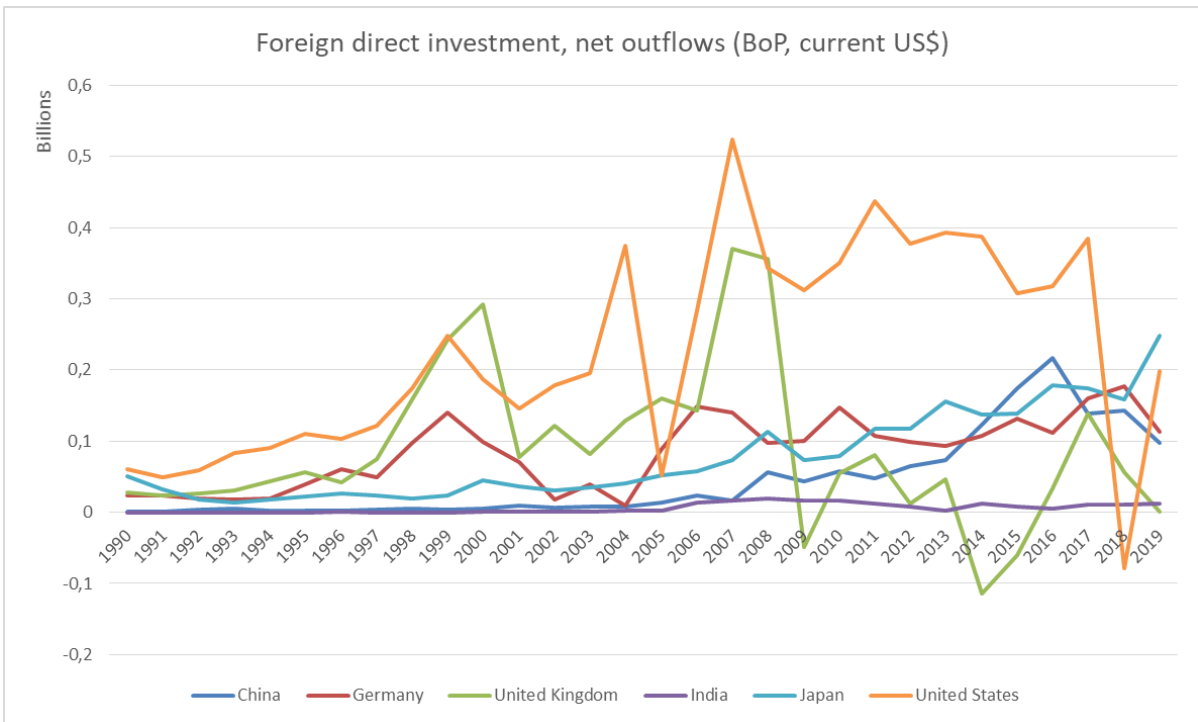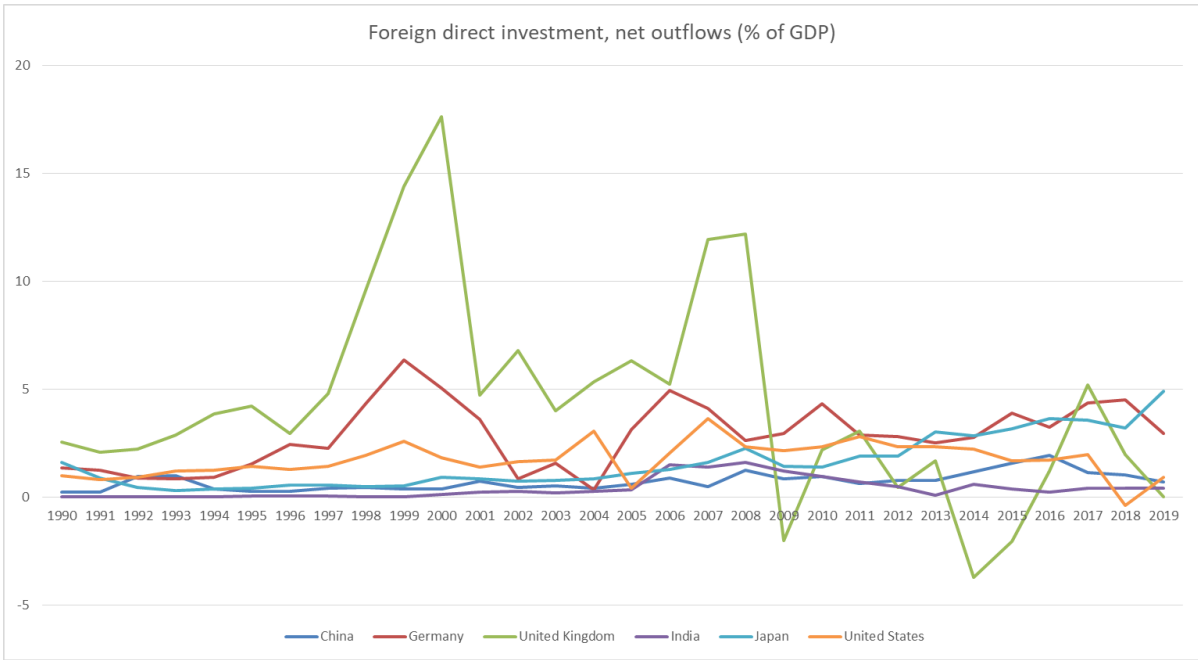
Source: Own Analysis (Data from The World Bank)

Annex C - Multiple Linear Regression

Dependent Variable: S&P500

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,807a	0,651	0,426	12,98332%

a. Predictors: (Constant), Dummies, United States FDI OUTFLOWS (% Growth), United States GDP (% Growth), FTSE100_adj_USD (% Growth), NI225_adj_USD (% Growth), Dax_adj_USD (% Growth), United States FDI INFLOWS (% Growth), United States EXPORTS (% Growth), SSEC_adj_USD (% Growth), HSI_adj_USD (% Growth), SENSEX_adj_USD (% Growth)

Coefficients^a

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	4,078	5,853		0,697	0,495		
	SSEC_adj_USD (% Growth)	0,058	0,076	0,184	0,762	0,457	0,352	2,845
	HSI_adj_USD (% Growth)	-0,133	0,120	-0,265	-1,105	0,285	0,357	2,799
	NI225_adj_USD (% Growth)	0,372	0,210	0,482	1,775	0,094	0,279	3,587
	Dax_adj_USD (% Growth)	0,308	0,123	0,519	2,500	0,023	0,476	2,102
	SENSEX_adj_USD (% Growth)	-0,083	0,148	-0,159	-0,560	0,583	0,254	3,937
	FTSE100_adj_USD (% Growth)	0,376	0,217	0,368	1,733	0,101	0,455	2,196
	United States GDP (% Growth)	-0,201	2,203	-0,018	-0,091	0,928	0,504	1,983
	United States EXPORTS (% Growth)	0,112	0,742	0,032	0,151	0,882	0,456	2,193
	United States FDI OUTFLOWS (% Growth)	-0,008	0,031	-0,055	-0,263	0,795	0,474	2,108
	United States FDI INFLOWS (% Growth)	-0,004	0,080	-0,009	-0,044	0,965	0,469	2,132
	Dummies	0,383	6,477	0,010	0,059	0,954	0,694	1,442

a. Dependent Variable: S&P500 (% Growth)

Dependent Variable: SSEC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,827[a]	0,683	0,478	39,26251%

a. Predictors: (Constant), Dummies, China FDI OUTFLOWS (% Growth), FTSE100_adj_USD (% Growth), China IMPORTS (% Growth), SENSEX_adj_USD (% Growth), Dax_adj_USD (% Growth), China GDP (% Growth), NI225_adj_USD (% Growth), HSI_adj_USD (% Growth), S&P500 (% Growth), China FDI INFLOWS (% Growth)

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	-43,092	45,993		-0,937	0,362		
	S&P500 (% Growth)	1,045	0,860	0,329	1,215	0,241	0,254	3,940
	HSI_adj_USD (% Growth)	0,814	0,395	0,511	2,060	0,055	0,303	3,296
	NI225_adj_USD (% Growth)	-1,771	0,533	-0,722	-3,320	0,004	0,394	2,541
	Dax_adj_USD (% Growth)	-0,396	0,424	-0,210	-0,933	0,364	0,368	2,714
	SENSEX_adj_USD (% Growth)	0,845	0,377	0,512	2,241	0,039	0,357	2,804
	FTSE100_adj_USD (% Growth)	-0,028	0,864	-0,009	-0,033	0,974	0,263	3,804
	China GDP (% Growth)	6,000	5,045	0,257	1,189	0,251	0,399	2,508
	China IMPORTS (% Growth)	-0,607	0,800	-0,161	-0,758	0,459	0,412	2,428
	China FDI OUTFLOWS (% Growth)	0,172	0,138	0,255	1,240	0,232	0,439	2,278
	China FDI INFLOWS (% Growth)	-0,198	0,346	-0,159	-0,574	0,574	0,242	4,130
	Dummies	-19,414	19,076	-0,162	-1,018	0,323	0,731	1,368

a. Dependent Variable: SSEC_adj_USD (% Growth)

Dependent Variable: HSI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,971ᵃ	0,943	0,900	8,91813%

a. Predictors: (Constant), Dummies, China IMPORTS (% Growth), SSEC_adj_USD (% Growth), China FDI OUTFLOWS (% Growth), S&P500 (% Growth), China FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), China GDP (% Growth), FTSE100_adj_USD (% Growth)

Coefficientsᵃ

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	7,557	15,181		0,498	0,628		
S&P500 (% Growth)	-0,180	0,232	-0,112	-0,774	0,454	0,227	4,399
SSEC_adj_USD (% Growth)	0,069	0,070	0,116	0,993	0,340	0,350	2,855
SENSEX_adj_USD (% Growth)	0,464	0,083	0,614	5,606	0,000	0,399	2,509
FTSE100_adj_USD (% Growth)	0,942	0,260	0,512	3,617	0,004	0,239	4,191
China GDP (% Growth)	-1,965	1,924	-0,143	-1,021	0,327	0,244	4,091
China IMPORTS (% Growth)	0,584	0,219	0,303	2,668	0,020	0,370	2,700
China FDI OUTFLOWS (% Growth)	-0,020	0,040	-0,042	-0,491	0,632	0,643	1,556
China FDI INFLOWS (% Growth)	-0,136	0,110	-0,132	-1,241	0,238	0,421	2,374
Dummies	1,849	4,714	0,031	0,392	0,702	0,750	1,334

a. Dependent Variable: HSI_adj_USD (% Growth)

Dependent Variable: NI225

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,909[a]	0,826	0,730	11,52084%

a. Predictors: (Constant), Dummies, Japan FDI OUTFLOWS (% Growth), SENSEX_adj_USD (% Growth), Japan FDI INFLOWS (% Growth), FTSE100_adj_USD (% Growth), Japan EXPORTS (% Growth), SSEC_adj_USD (% Growth), S&P500 (% Growth), HSI_adj_USD (% Growth), Japan IMPORTS (% Growth)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-0,108	4,192		-0,026	0,980		
	S&P500 (% Growth)	0,438	0,183	0,338	2,396	0,028	0,484	2,065
	SSEC_adj_USD (% Growth)	-0,216	0,051	-0,530	-4,217	0,001	0,612	1,635
	HSI_adj_USD (% Growth)	0,126	0,096	0,193	1,312	0,206	0,444	2,251
	SENSEX_adj_USD (% Growth)	0,363	0,087	0,539	4,177	0,001	0,579	1,727
	FTSE100_adj_USD (% Growth)	0,018	0,199	0,013	0,088	0,931	0,427	2,344
	Japan EXPORTS (% Growth)	0,533	0,427	0,194	1,248	0,228	0,401	2,496
	Japan IMPORTS (% Growth)	-1,081	0,665	-0,280	-1,625	0,122	0,324	3,089
	Japan FDI OUTFLOWS (% Growth)	0,094	0,089	0,129	1,057	0,304	0,649	1,540
	Japan FDI INFLOWS (% Growth)	0,006	0,002	0,356	2,902	0,010	0,641	1,561
	Dummies	-5,087	6,350	-0,104	-0,801	0,433	0,568	1,760

a. Dependent Variable: NI225_adj_USD (% Growth)

Dependent Variable: DAX

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,795ª	0,633	0,428	21,80004%

a. Predictors: (Constant), Dummies, Germany FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), Germany FDI OUTFLOWS (% Growth), FTSE100_adj_USD (% Growth), Germany GDP (% Growth), S&P500 (% Growth), SSEC_adj_USD (% Growth), HSI_adj_USD (% Growth), NI225_adj_USD (% Growth)

Coefficientsª

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1,415	8,339		0,170	0,867		
	S&P500 (% Growth)	0,975	0,350	0,579	2,783	0,012	0,471	2,123
	SSEC_adj_USD (% Growth)	-0,059	0,142	-0,112	-0,416	0,682	0,284	3,524
	HSI_adj_USD (% Growth)	0,372	0,209	0,440	1,784	0,091	0,335	2,981
	NI225_adj_USD (% Growth)	-0,610	0,408	-0,469	-1,496	0,152	0,208	4,813
	SENSEX_adj_USD (% Growth)	0,282	0,242	0,323	1,166	0,259	0,267	3,747
	FTSE100_adj_USD (% Growth)	-0,196	0,389	-0,114	-0,504	0,620	0,399	2,506
	Germany GDP (% Growth)	-1,177	2,756	-0,081	-0,427	0,674	0,571	1,751
	Germany FDI OUTFLOWS (% Growth)	0,010	0,029	0,056	0,326	0,748	0,690	1,450
	Germany FDI INFLOWS (% Growth)	0,003	0,018	0,033	0,185	0,855	0,628	1,592
	Dummies	-8,671	10,584	-0,137	-0,819	0,423	0,732	1,366

a. Dependent Variable: Dax_adj_USD (% Growth)

Dependent Variable: SENSEX

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,925[a]	0,856	0,749	16,52271%

a. Predictors: (Constant), Dummies, India EXPORTS (% Growth), India FDI OUTFLOWS (% Growth), India FDI INFLOWS (% Growth), India GDP (% Growth), HSI_adj_USD (% Growth), S&P500 (% Growth), SSEC_adj_USD (% Growth), Dax_adj_USD (% Growth), India IMPORTS (% Growth), NI225_adj_USD (% Growth), FTSE100_adj_USD (% Growth)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	-57,450	14,935		-3,847	0,001		
	S&P500 (% Growth)	-0,088	0,350	-0,046	-0,252	0,805	0,272	3,681
	SSEC_adj_USD (% Growth)	0,354	0,085	0,584	4,171	0,001	0,458	2,182
	HSI_adj_USD (% Growth)	0,028	0,175	0,029	0,158	0,876	0,273	3,670
	NI225_adj_USD (% Growth)	0,842	0,273	0,567	3,088	0,007	0,266	3,754
	Dax_adj_USD (% Growth)	0,311	0,186	0,272	1,669	0,115	0,337	2,966
	FTSE100_adj_USD (% Growth)	-0,678	0,396	-0,344	-1,713	0,106	0,222	4,503
	India GDP (% Growth)	8,621	2,158	0,500	3,994	0,001	0,574	1,743
	India EXPORTS (% Growth)	-0,385	0,598	-0,111	-0,644	0,529	0,303	3,304
	India IMPORTS (% Growth)	0,556	0,496	0,185	1,122	0,278	0,329	3,037
	India FDI OUTFLOWS (% Growth)	-0,001	0,001	-0,084	-0,668	0,514	0,566	1,767
	India FDI INFLOWS (% Growth)	-0,017	0,077	-0,035	-0,219	0,830	0,346	2,892
	Dummies	20,154	7,935	0,278	2,540	0,022	0,748	1,336

a. Dependent Variable: SENSEX_adj_USD (% Growth)

Dependent Variable: FTSE100

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,776ᵃ	0,602	0,344	13,56279%

a. Predictors: (Constant), Dummies, United Kingdom GDP (% Growth), SENSEX_adj_USD (% Growth), United Kingdom FDI INFLOWS (% Growth), United Kingdom FDI OUTFLOWS (% Growth), SSEC_adj_USD (% Growth), S&P500 (% Growth), HSI_adj_USD (% Growth), United Kingdom EXPORTS (% Growth), Dax_adj_USD (% Growth), NI225_adj_USD (% Growth)

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1,361	5,497		-0,248	0,807		
	S&P500 (% Growth)	0,458	0,230	0,469	1,988	0,063	0,422	2,372
	SSEC_adj_USD (% Growth)	0,093	0,080	0,301	1,157	0,263	0,345	2,896
	HSI_adj_USD (% Growth)	0,178	0,122	0,362	1,456	0,164	0,378	2,643
	NI225_adj_USD (% Growth)	-0,035	0,246	-0,047	-0,143	0,888	0,221	4,527
	Dax_adj_USD (% Growth)	-0,067	0,153	-0,115	-0,436	0,668	0,336	2,979
	SENSEX_adj_USD (% Growth)	-0,017	0,152	-0,034	-0,113	0,911	0,261	3,826
	United Kingdom GDP (% Growth)	-0,440	2,154	-0,044	-0,204	0,841	0,510	1,960
	United Kingdom EXPORTS (% Growth)	-0,075	0,885	-0,018	-0,085	0,934	0,506	1,976
	United Kingdom FDI OUTFLOWS (% Growth)	0,014	0,023	0,112	0,625	0,541	0,731	1,367
	United Kingdom FDI INFLOWS (% Growth)	0,029	0,020	0,248	1,461	0,162	0,812	1,231
	Dummies	1,421	6,847	0,039	0,208	0,838	0,677	1,477

a. Dependent Variable: FTSE100_adj_USD (% Growth)

Annex D - Multiple Linear Regression with "Dummies 2012-2019" as Independent Variable

Dependent Variable: S&P 500

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,882[a]	0,778	0,611	10,95197%

a. Predictors: (Constant), Dummies 2012-2019, United States GDP (% Growth), SENSEX_adj_USD (% Growth), United States FDI OUTFLOWS (% Growth), United States EXPORTS (% Growth), FTSE100_adj_USD (% Growth), SSEC_adj_USD (% Growth), United States FDI INFLOWS (% Growth), Dax_adj_USD (% Growth)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-0,207	5,231		-0,040	0,969		
	SSEC_adj_USD (% Growth)	-0,028	0,075	-0,076	-0,382	0,709	0,465	2,151
	Dax_adj_USD (% Growth)	0,336	0,169	0,496	1,990	0,070	0,299	3,349
	SENSEX_adj_USD (% Growth)	-0,016	0,135	-0,033	-0,115	0,910	0,226	4,429
	FTSE100_adj_USD (% Growth)	0,559	0,244	0,486	2,290	0,041	0,410	2,439
	United States GDP (% Growth)	2,161	2,071	0,194	1,043	0,317	0,533	1,877
	United States EXPORTS (% Growth)	-0,735	0,688	-0,209	-1,069	0,306	0,485	2,063
	United States FDI OUTFLOWS (% Growth)	0,002	0,028	0,015	0,070	0,945	0,435	2,299
	United States FDI INFLOWS (% Growth)	0,021	0,079	0,056	0,266	0,795	0,409	2,443
	Dummies 2012-2019	2,822	5,862	0,079	0,481	0,639	0,686	1,459

a. Dependent Variable: S&P500 (% Growth)

Dependent Variable: SSEC

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,890ª	0,792	0,665	27,23791%

a. Predictors: (Constant), Dummies 2012-2019, SENSEX_adj_USD (% Growth), China FDI INFLOWS (% Growth), China FDI OUTFLOWS (% Growth), China IMPORTS (% Growth), S&P500 (% Growth), China GDP (% Growth), NI225_adj_USD (% Growth)

Coefficientsª

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	-116,646	48,973		-2,382	0,033		
S&P500 (% Growth)	1,246	0,604	0,465	2,063	0,060	0,314	3,188
NI225_adj_USD (% Growth)	-1,499	0,526	-0,702	-2,852	0,014	0,263	3,799
SENSEX_adj_USD (% Growth)	0,808	0,293	0,641	2,758	0,016	0,296	3,379
China GDP (% Growth)	13,494	5,336	0,587	2,529	0,025	0,297	3,372
China IMPORTS (% Growth)	-0,263	0,591	-0,082	-0,445	0,664	0,474	2,108
China FDI OUTFLOWS (% Growth)	-0,041	0,120	-0,052	-0,338	0,741	0,665	1,503
China FDI INFLOWS (% Growth)	-0,475	0,313	-0,275	-1,516	0,153	0,484	2,068
Dummies 2012-2019	15,710	18,141	0,164	0,866	0,402	0,443	2,258

a. Dependent Variable: SSEC_adj_USD (% Growth)

Dependent Variable: HSI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,969ª	0,940	0,902	8,80286%

a. Predictors: (Constant), Dummies 2012-2019, SENSEX_adj_USD (% Growth), China FDI INFLOWS (% Growth), China FDI OUTFLOWS (% Growth), SSEC_adj_USD (% Growth), FTSE100_adj_USD (% Growth), China IMPORTS (% Growth), S&P500 (% Growth)

Coefficientsª

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1 (Constant)	-9,291	5,154		-1,803	0,095		
S&P500 (% Growth)	-0,170	0,208	-0,106	-0,816	0,429	0,277	3,609
SSEC_adj_USD (% Growth)	0,029	0,054	0,048	0,533	0,603	0,575	1,738
SENSEX_adj_USD (% Growth)	0,462	0,081	0,611	5,693	0,000	0,404	2,475
FTSE100_adj_USD (% Growth)	0,913	0,250	0,496	3,659	0,003	0,253	3,950
China IMPORTS (% Growth)	0,570	0,220	0,296	2,588	0,023	0,357	2,804
China FDI OUTFLOWS (% Growth)	-0,026	0,038	-0,057	-0,693	0,500	0,689	1,452
China FDI INFLOWS (% Growth)	-0,200	0,093	-0,193	-2,144	0,051	0,572	1,749
Dummies 2012-2019	4,139	5,317	0,072	0,778	0,450	0,538	1,857

a. Dependent Variable: HSI_adj_USD (% Growth)

Dependent Variable: NI225

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,823ª	0,678	0,499	15,69485%

a. Predictors: (Constant), Dummies 2012-2019, FTSE100_adj_USD (% Growth), Japan GDP (% Growth), Japan FDI INFLOWS (% Growth), Japan FDI OUTFLOWS (% Growth), SSEC_adj_USD (% Growth), S&P500 (% Growth), HSI_adj_USD (% Growth), Japan EXPORTS (% Growth), Japan IMPORTS (% Growth)

Coefficientsª

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	-2,617	4,637		-0,564	0,579		
	S&P500 (% Growth)	0,788	0,261	0,609	3,016	0,007	0,439	2,279
	SSEC_adj_USD (% Growth)	-0,158	0,073	-0,387	-2,164	0,044	0,559	1,789
	HSI_adj_USD (% Growth)	0,260	0,125	0,400	2,072	0,053	0,481	2,078
	FTSE100_adj_USD (% Growth)	-0,104	0,275	-0,078	-0,377	0,710	0,416	2,404
	Japan GDP (% Growth)	-4,065	3,686	-0,328	-1,103	0,285	0,202	4,944
	Japan EXPORTS (% Growth)	1,210	0,702	0,440	1,725	0,102	0,275	3,632
	Japan IMPORTS (% Growth)	-0,733	0,999	-0,190	-0,734	0,473	0,266	3,753
	Japan FDI OUTFLOWS (% Growth)	0,074	0,121	0,101	0,611	0,549	0,659	1,517
	Japan FDI INFLOWS (% Growth)	0,008	0,003	0,463	2,839	0,011	0,671	1,489
	Dummies 2012-2019	1,061	7,264	0,022	0,146	0,886	0,806	1,241

a. Dependent Variable: NI225_adj_USD (% Growth)

Dependent Variable: DAX

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,856ª	0,733	0,568	17,00551%

a. Predictors: (Constant), Dummies 2012-2019, Germany GDP (% Growth), Germany FDI INFLOWS (% Growth), SSEC_adj_USD (% Growth), S&P500 (% Growth), Germany FDI OUTFLOWS (% Growth), SENSEX_adj_USD (% Growth), FTSE100_adj_USD (% Growth)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-6,951	6,275		-1,108	0,288		
	S&P500 (% Growth)	0,653	0,391	0,443	1,673	0,118	0,293	3,419
	SSEC_adj_USD (% Growth)	0,086	0,114	0,157	0,754	0,464	0,476	2,099
	SENSEX_adj_USD (% Growth)	0,336	0,180	0,483	1,860	0,086	0,304	3,286
	FTSE100_adj_USD (% Growth)	-0,128	0,463	-0,075	-0,275	0,787	0,274	3,645
	Germany GDP (% Growth)	0,679	2,144	0,054	0,317	0,757	0,709	1,410
	Germany FDI OUTFLOWS (% Growth)	-0,005	0,029	-0,040	-0,188	0,853	0,450	2,223
	Germany FDI INFLOWS (% Growth)	-0,028	0,041	-0,137	-0,690	0,503	0,519	1,927
	Dummies 2012-2019	5,801	8,502	0,110	0,682	0,507	0,786	1,272

a. Dependent Variable: Dax_adj_USD (% Growth)

Dependent Variable: SENSEX

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,934ᵃ	0,872	0,755	18,43878%

a. Predictors: (Constant), Dummies 2012-2019, India GDP (% Growth), India FDI OUTFLOWS (% Growth), India IMPORTS (% Growth), Dax_adj_USD (% Growth), India FDI INFLOWS (% Growth), India EXPORTS (% Growth), S&P500 (% Growth), SSEC_adj_USD (% Growth), NI225_adj_USD (% Growth)

Coefficientsᵃ

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	-7,839	23,506		-0,333	0,745		
	S&P500 (% Growth)	-0,795	0,452	-0,375	-1,757	0,107	0,257	3,899
	SSEC_adj_USD (% Growth)	0,364	0,179	0,459	2,033	0,067	0,229	4,371
	NI225_adj_USD (% Growth)	0,988	0,386	0,584	2,559	0,027	0,224	4,474
	Dax_adj_USD (% Growth)	0,416	0,294	0,289	1,418	0,184	0,280	3,567
	India GDP (% Growth)	3,539	3,552	0,162	0,996	0,340	0,441	2,269
	India EXPORTS (% Growth)	-0,136	0,793	-0,034	-0,171	0,867	0,292	3,429
	India IMPORTS (% Growth)	0,012	0,613	0,003	0,019	0,985	0,370	2,702
	India FDI OUTFLOWS (% Growth)	0,029	0,033	0,144	0,882	0,397	0,437	2,286
	India FDI INFLOWS (% Growth)	-0,201	0,129	-0,249	-1,560	0,147	0,456	2,193
	Dummies 2012-2019	-11,565	12,430	-0,153	-0,930	0,372	0,432	2,313

a. Dependent Variable: SENSEX_adj_USD (% Growth)

Dependent Variable: FTSE100

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,795ᵃ	0,632	0,394	13,03507%

a. Predictors: (Constant), Dummies 2012-2019, Dax_adj_USD (% Growth), United Kingdom GDP (% Growth), United Kingdom FDI INFLOWS (% Growth), NI225_adj_USD (% Growth), United Kingdom FDI OUTFLOWS (% Growth), SSEC_adj_USD (% Growth), United Kingdom EXPORTS (% Growth), S&P500 (% Growth), HSI_adj_USD (% Growth), United Kingdom IMPORTS (% Growth)

Coefficientsᵃ

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	-0,025	5,184		-0,005	0,996		
	S&P500 (% Growth)	0,418	0,221	0,428	1,896	0,075	0,425	2,355
	SSEC_adj_USD (% Growth)	0,073	0,065	0,238	1,119	0,279	0,479	2,086
	HSI_adj_USD (% Growth)	0,166	0,121	0,338	1,376	0,187	0,359	2,787
	NI225_adj_USD (% Growth)	-0,047	0,162	-0,062	-0,288	0,777	0,467	2,139
	Dax_adj_USD (% Growth)	-0,028	0,141	-0,048	-0,200	0,844	0,367	2,723
	United Kingdom GDP (% Growth)	-2,388	2,654	-0,237	-0,900	0,381	0,311	3,220
	United Kingdom EXPORTS (% Growth)	-0,817	1,031	-0,199	-0,792	0,439	0,344	2,908
	United Kingdom IMPORTS (% Growth)	1,521	1,294	0,379	1,175	0,256	0,208	4,800
	United Kingdom FDI OUTFLOWS (% Growth)	0,020	0,021	0,157	0,958	0,352	0,805	1,242
	United Kingdom FDI INFLOWS (% Growth)	0,022	0,020	0,187	1,103	0,285	0,752	1,329
	Dummies 2012-2019	0,962	5,998	0,026	0,160	0,875	0,815	1,227

a. Dependent Variable: FTSE100_adj_USD (% Growth)

Annex E - Multiple Linear Regression with "GDP Year X" as Dependent Variable

Dependent Variable: China GDP (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,869[a]	0,756	0,605	1,28538%

a. Predictors: (Constant), Dummies, China IMPORTS (% Growth), SSEC_adj_USD (% Growth), China FDI OUTFLOWS (% Growth), S&P500 (% Growth), China FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), FTSE100_adj_USD (% Growth)

Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	7,586	0,601		12,627	0,000		
S&P500 (% Growth)	-0,053	0,030	-0,453	-1,750	0,104	0,281	3,560
SSEC_adj_USD (% Growth)	0,023	0,008	0,529	2,951	0,011	0,585	1,710
SENSEX_adj_USD (% Growth)	0,006	0,012	0,114	0,532	0,604	0,407	2,455
FTSE100_adj_USD (% Growth)	0,048	0,035	0,360	1,372	0,193	0,273	3,661
China IMPORTS (% Growth)	0,052	0,028	0,372	1,859	0,086	0,469	2,133
China FDI OUTFLOWS (% Growth)	0,006	0,006	0,181	1,108	0,288	0,703	1,421
China FDI INFLOWS (% Growth)	0,025	0,014	0,338	1,783	0,098	0,524	1,908
Dummies	-0,166	0,678	-0,039	-0,245	0,810	0,753	1,327

a. Dependent Variable: China GDP (% Growth)

Dependent Variable: Germany GDP (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,930ᵃ	0,865	0,765	0,99731%

a. Predictors: (Constant), Dummies, SSEC_adj_USD (% Growth), Germany FDI OUTFLOWS (% Growth), Germany EXPORTS (% Growth), S&P500 (% Growth), Germany FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), FTSE100_adj_USD (% Growth), Dax_adj_USD (% Growth)

Coefficientsᵃ

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0,677	0,439		1,544	0,149		
	S&P500 (% Growth)	0,006	0,025	0,049	0,232	0,820	0,248	4,037
	SSEC_adj_USD (% Growth)	0,005	0,007	0,120	0,771	0,456	0,465	2,150
	Dax_adj_USD (% Growth)	-0,023	0,018	-0,295	-1,267	0,229	0,207	4,826
	SENSEX_adj_USD (% Growth)	-0,008	0,011	-0,151	-0,736	0,476	0,266	3,762
	FTSE100_adj_USD (% Growth)	0,009	0,028	0,067	0,326	0,750	0,267	3,751
	Germany EXPORTS (% Growth)	0,258	0,044	0,746	5,892	0,000	0,699	1,432
	Germany FDI OUTFLOWS (% Growth)	0,000	0,002	-0,019	-0,121	0,906	0,442	2,263
	Germany FDI INFLOWS (% Growth)	0,002	0,003	0,135	0,878	0,397	0,472	2,121
	Dummies	-1,458	0,638	-0,338	-2,288	0,041	0,513	1,951

a. Dependent Variable: Germany GDP (% Growth)

Dependent Variable: United Kingdom (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,841ᵃ	0,708	0,519	1,15551%

a. Predictors: (Constant), Dummies, United Kingdom IMPORTS (% Growth), United Kingdom FDI OUTFLOWS (% Growth), SSEC_adj_USD (% Growth), NI225_adj_USD (% Growth), United Kingdom FDI INFLOWS (% Growth), Dax_adj_USD (% Growth), FTSE100_adj_USD (% Growth), S&P500 (% Growth), HSI_adj_USD (% Growth), United Kingdom EXPORTS (% Growth)

Coefficientsᵃ

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	1,040	0,435		2,393	0,029		
S&P500 (% Growth)	-0,003	0,021	-0,032	-0,147	0,885	0,354	2,825
SSEC_adj_USD (% Growth)	-0,006	0,006	-0,184	-0,957	0,352	0,467	2,140
HSI_adj_USD (% Growth)	-0,003	0,011	-0,056	-0,249	0,806	0,341	2,932
NI225_adj_USD (% Growth)	0,005	0,015	0,060	0,308	0,762	0,455	2,198
Dax_adj_USD (% Growth)	0,014	0,012	0,250	1,209	0,243	0,401	2,494
FTSE100_adj_USD (% Growth)	-0,020	0,021	-0,196	-0,931	0,365	0,386	2,592
United Kingdom EXPORTS (% Growth)	-0,048	0,102	-0,117	-0,466	0,647	0,275	3,634
United Kingdom IMPORTS (% Growth)	0,342	0,096	0,856	3,559	0,002	0,297	3,368
United Kingdom FDI OUTFLOWS (% Growth)	0,002	0,002	0,162	1,102	0,286	0,791	1,264
United Kingdom FDI INFLOWS (% Growth)	-0,001	0,002	-0,047	-0,295	0,771	0,684	1,462
Dummies	-0,306	0,588	-0,084	-0,521	0,609	0,666	1,502

a. Dependent Variable: United Kingdom GDP (% Growth)

Dependent Variable: India GDP (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,885ᵃ	0,784	0,621	1,05008%

a. Predictors: (Constant), Dummies, India IMPORTS (% Growth), India FDI OUTFLOWS (% Growth), SENSEX_adj_USD (% Growth), India FDI INFLOWS (% Growth), FTSE100_adj_USD (% Growth), India EXPORTS (% Growth), S&P500 (% Growth), SSEC_adj_USD (% Growth)

Coefficientsᵃ

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1 (Constant)	6,290	0,464		13,562	0,000		
S&P500 (% Growth)	-0,023	0,025	-0,236	-0,937	0,367	0,283	3,530
SSEC_adj_USD (% Growth)	-0,013	0,010	-0,361	-1,250	0,235	0,216	4,633
SENSEX_adj_USD (% Growth)	0,026	0,010	0,557	2,447	0,031	0,348	2,874
FTSE100_adj_USD (% Growth)	0,084	0,028	0,755	2,957	0,012	0,276	3,619
India EXPORTS (% Growth)	0,004	0,041	0,023	0,103	0,919	0,353	2,831
India IMPORTS (% Growth)	0,005	0,034	0,031	0,146	0,887	0,390	2,564
India FDI OUTFLOWS (% Growth)	0,001	0,002	0,158	0,810	0,434	0,474	2,109
India FDI INFLOWS (% Growth)	0,004	0,008	0,119	0,541	0,598	0,373	2,679
Dummies	-1,166	0,553	-0,326	-2,107	0,057	0,754	1,326

a. Dependent Variable: India GDP (% Growth)

Dependent Variable: Japan GDP (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,923ᵃ	0,852	0,741	0,94800%

a. Predictors: (Constant), Dummies, Japan FDI INFLOWS (% Growth), Japan FDI OUTFLOWS (% Growth), FTSE100_adj_USD (% Growth), SSEC_adj_USD (% Growth), Japan EXPORTS (% Growth), SENSEX_adj_USD (% Growth), S&P500 (% Growth), Japan IMPORTS (% Growth)

Coefficientsᵃ

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	0,137	0,399		0,343	0,738		
S&P500 (% Growth)	0,019	0,023	0,182	0,820	0,428	0,252	3,975
SSEC_adj_USD (% Growth)	0,002	0,006	0,045	0,277	0,786	0,471	2,122
SENSEX_adj_USD (% Growth)	-0,010	0,009	-0,194	-1,035	0,321	0,351	2,850
FTSE100_adj_USD (% Growth)	0,000	0,025	-0,003	-0,013	0,990	0,291	3,436
Japan EXPORTS (% Growth)	0,108	0,044	0,532	2,477	0,029	0,268	3,737
Japan IMPORTS (% Growth)	0,116	0,078	0,354	1,487	0,163	0,218	4,578
Japan FDI OUTFLOWS (% Growth)	0,000	0,009	-0,004	-0,027	0,979	0,599	1,670
Japan FDI INFLOWS (% Growth)	0,000	0,001	0,044	0,318	0,756	0,630	1,588
Dummies	-0,463	0,573	-0,119	-0,808	0,435	0,574	1,742

a. Dependent Variable: Japan GDP (% Growth)

Dependent Variable: United States GDP (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,936[a]	0,877	0,784	0,73408%

a. Predictors: (Constant), Dummies, United States FDI OUTFLOWS (% Growth), FTSE100_adj_USD (% Growth), United States IMPORTS (% Growth), SSEC_adj_USD (% Growth), United States FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), United States EXPORTS (% Growth), S&P500 (% Growth)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1,388	0,334		4,161	0,001		
	S&P500 (% Growth)	-0,005	0,018	-0,050	-0,254	0,804	0,261	3,824
	SSEC_adj_USD (% Growth)	0,005	0,005	0,134	0,874	0,399	0,435	2,300
	SENSEX_adj_USD (% Growth)	0,001	0,007	0,032	0,187	0,855	0,343	2,913
	FTSE100_adj_USD (% Growth)	0,003	0,020	0,029	0,149	0,884	0,279	3,587
	United States EXPORTS (% Growth)	-0,102	0,063	-0,321	-1,626	0,130	0,263	3,800
	United States IMPORTS (% Growth)	0,306	0,050	1,159	6,163	0,000	0,290	3,446
	United States FDI OUTFLOWS (% Growth)	-0,002	0,002	-0,162	-1,084	0,300	0,460	2,172
	United States FDI INFLOWS (% Growth)	0,001	0,005	0,028	0,174	0,865	0,401	2,495
	Dummies	-0,366	0,453	-0,110	-0,807	0,435	0,549	1,821

a. Dependent Variable: United States GDP (% Growth)

Annex F - Multiple Linear Regression with "GDP Year X+1" as Dependent Variable

Dependent Variable: China GDP Year X+1 (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,790[a]	0,624	0,373	1,64825%

a. Predictors: (Constant), Dummies, SSEC_adj_USD (% Growth), China IMPORTS (% Growth), China FDI OUTFLOWS (% Growth), S&P500 (% Growth), China FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), FTSE100_adj_USD (% Growth)

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	7,152	0,803		8,908	0,000		
	S&P500 (% Growth)	-0,029	0,040	-0,237	-0,717	0,487	0,287	3,480
	SSEC_adj_USD (% Growth)	0,011	0,010	0,257	1,111	0,288	0,585	1,709
	SENSEX_adj_USD (% Growth)	0,032	0,015	0,590	2,107	0,057	0,400	2,502
	FTSE100_adj_USD (% Growth)	0,007	0,046	0,055	0,161	0,874	0,270	3,707
	China IMPORTS (% Growth)	0,033	0,036	0,232	0,925	0,373	0,500	1,998
	China FDI OUTFLOWS (% Growth)	0,012	0,007	0,346	1,667	0,121	0,728	1,374
	China FDI INFLOWS (% Growth)	0,021	0,019	0,265	1,129	0,281	0,567	1,763
	Dummies	0,659	0,877	0,153	0,751	0,467	0,756	1,322

a. Dependent Variable: China GDP Year X+1 (% Growth)

Dependent Variable: Germany GDP Year X+1 (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,879ª	0,772	0,586	1,35170%

a. Predictors: (Constant), Dummies, SSEC_adj_USD (% Growth), Germany FDI OUTFLOWS (% Growth), Germany EXPORTS (% Growth), S&P500 (% Growth), Germany FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), FTSE100_adj_USD (% Growth), Dax_adj_USD (% Growth)

Coefficientsª

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0,537	0,607		0,885	0,395		
	S&P500 (% Growth)	0,066	0,035	0,547	1,901	0,084	0,250	4,006
	SSEC_adj_USD (% Growth)	0,008	0,009	0,194	0,912	0,381	0,455	2,196
	Dax_adj_USD (% Growth)	-0,039	0,025	-0,488	-1,565	0,146	0,212	4,710
	SENSEX_adj_USD (% Growth)	0,019	0,016	0,347	1,203	0,254	0,249	4,021
	FTSE100_adj_USD (% Growth)	0,021	0,037	0,154	0,559	0,587	0,271	3,691
	Germany EXPORTS (% Growth)	0,040	0,060	0,113	0,656	0,525	0,694	1,441
	Germany FDI OUTFLOWS (% Growth)	0,004	0,002	0,366	1,670	0,123	0,431	2,320
	Germany FDI INFLOWS (% Growth)	0,004	0,004	0,240	1,111	0,290	0,442	2,260
	Dummies	-0,823	0,864	-0,189	-0,952	0,361	0,524	1,908

a. Dependent Variable: Germany GDP Year X+1 (% Growth)

Dependent Variable: United Kingdom GDP Year X+1 (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,825ª	0,680	0,460	1,16239%

a. Predictors: (Constant), Dummies, United Kingdom IMPORTS (% Growth), United Kingdom FDI OUTFLOWS (% Growth), SSEC_adj_USD (% Growth), NI225_adj_USD (% Growth), United Kingdom FDI INFLOWS (% Growth), Dax_adj_USD (% Growth), FTSE100_adj_USD (% Growth), S&P500 (% Growth), HSI_adj_USD (% Growth), United Kingdom EXPORTS (% Growth)

Coefficientsª

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0,920	0,440		2,091	0,053		
	S&P500 (% Growth)	0,037	0,022	0,401	1,717	0,105	0,367	2,727
	SSEC_adj_USD (% Growth)	-0,005	0,006	-0,165	-0,794	0,439	0,465	2,149
	HSI_adj_USD (% Growth)	0,012	0,011	0,257	1,043	0,313	0,329	3,042
	NI225_adj_USD (% Growth)	-0,005	0,015	-0,065	-0,310	0,761	0,457	2,188
	Dax_adj_USD (% Growth)	0,004	0,012	0,076	0,342	0,737	0,402	2,485
	FTSE100_adj_USD (% Growth)	-0,004	0,021	-0,039	-0,170	0,867	0,385	2,599
	United Kingdom EXPORTS (% Growth)	-0,153	0,103	-0,402	-1,492	0,155	0,276	3,628
	United Kingdom IMPORTS (% Growth)	0,362	0,097	0,970	3,740	0,002	0,297	3,369
	United Kingdom FDI OUTFLOWS (% Growth)	-0,001	0,002	-0,069	-0,422	0,678	0,754	1,327
	United Kingdom FDI INFLOWS (% Growth)	-0,002	0,002	-0,195	-1,110	0,283	0,645	1,549
	Dummies	0,086	0,593	0,025	0,145	0,886	0,673	1,487

a. Dependent Variable: United Kingdom GDP Year X+1 (% Growth)

Dependent Variable: India GDP Year X+1 (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,510ª	0,260	-0,480	2,12401%

a. Predictors: (Constant), Dummies, India FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), India IMPORTS (% Growth), India FDI OUTFLOWS (% Growth), FTSE100_adj_USD (% Growth), India EXPORTS (% Growth), S&P500 (% Growth), SSEC_adj_USD (% Growth), Dax_adj_USD (% Growth)

Coefficientsª

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1 (Constant)	6,308	0,977		6,455	0,000		
S&P500 (% Growth)	0,058	0,057	0,574	1,015	0,334	0,231	4,322
SSEC_adj_USD (% Growth)	-0,024	0,022	-0,665	-1,093	0,300	0,200	5,001
Dax_adj_USD (% Growth)	-0,020	0,042	-0,296	-0,475	0,645	0,191	5,246
SENSEX_adj_USD (% Growth)	0,021	0,025	0,461	0,856	0,412	0,255	3,926
FTSE100_adj_USD (% Growth)	-0,005	0,059	-0,046	-0,087	0,933	0,268	3,736
India EXPORTS (% Growth)	-0,089	0,084	-0,469	-1,069	0,310	0,385	2,600
India IMPORTS (% Growth)	0,054	0,069	0,327	0,784	0,451	0,425	2,350
India FDI OUTFLOWS (% Growth)	6,562E-05	0,004	0,007	0,017	0,987	0,422	2,367
India FDI INFLOWS (% Growth)	0,021	0,017	0,570	1,241	0,243	0,351	2,850
Dummies	0,286	1,299	0,079	0,220	0,830	0,573	1,747

a. Dependent Variable: India GDP Year X+1 (% Growth)

Dependent Variable: Japan GDP Year X+1 (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,761ª	0,580	0,236	1,62374%

a. Predictors: (Constant), Dummies, Japan FDI INFLOWS (% Growth), Japan FDI OUTFLOWS (% Growth), FTSE100_adj_USD (% Growth), SSEC_adj_USD (% Growth), Japan EXPORTS (% Growth), SENSEX_adj_USD (% Growth), S&P500 (% Growth), Japan IMPORTS (% Growth)

Coefficientsª

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	0,398	0,684		0,581	0,573		
	S&P500 (% Growth)	0,026	0,045	0,243	0,575	0,577	0,214	4,679
	SSEC_adj_USD (% Growth)	-0,002	0,011	-0,063	-0,217	0,832	0,460	2,176
	SENSEX_adj_USD (% Growth)	0,029	0,016	0,594	1,800	0,099	0,350	2,853
	FTSE100_adj_USD (% Growth)	-0,005	0,046	-0,042	-0,109	0,915	0,262	3,821
	Japan EXPORTS (% Growth)	-0,100	0,075	-0,503	-1,334	0,209	0,269	3,716
	Japan IMPORTS (% Growth)	0,140	0,137	0,434	1,017	0,331	0,209	4,778
	Japan FDI OUTFLOWS (% Growth)	-0,007	0,019	-0,101	-0,356	0,729	0,475	2,106
	Japan FDI INFLOWS (% Growth)	0,000	0,001	0,071	0,272	0,790	0,564	1,772
	Dummies	0,050	0,989	0,013	0,051	0,960	0,578	1,732

a. Dependent Variable: Japan GDP Year X+1 (% Growth)

Dependent Variable: United States GDP Year X+1 (% Growth)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,923ᵃ	0,852	0,731	0,80080%

a. Predictors: (Constant), Dummies, SSEC_adj_USD (% Growth), United States IMPORTS (% Growth), FTSE100_adj_USD (% Growth), United States FDI INFLOWS (% Growth), SENSEX_adj_USD (% Growth), United States EXPORTS (% Growth), Dax_adj_USD (% Growth), United States FDI OUTFLOWS (% Growth)

Coefficientsᵃ

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1 (Constant)	2,094	0,346		6,058	0,000		
SSEC_adj_USD (% Growth)	-0,012	0,006	-0,377	-1,868	0,089	0,331	3,025
Dax_adj_USD (% Growth)	-0,008	0,014	-0,135	-0,568	0,582	0,237	4,220
SENSEX_adj_USD (% Growth)	0,014	0,010	0,349	1,482	0,166	0,242	4,126
FTSE100_adj_USD (% Growth)	0,044	0,020	0,447	2,228	0,048	0,335	2,984
United States EXPORTS (% Growth)	-0,299	0,063	-0,979	-4,733	0,001	0,315	3,178
United States IMPORTS (% Growth)	0,303	0,053	1,186	5,686	0,000	0,309	3,233
United States FDI OUTFLOWS (% Growth)	0,008	0,003	0,529	2,194	0,051	0,232	4,309
United States FDI INFLOWS (% Growth)	-0,016	0,007	-0,506	-2,168	0,053	0,247	4,045
Dummies	-0,830	0,517	-0,260	-1,605	0,137	0,514	1,946

a. Dependent Variable: United States GDP Year X+1 (% Growth)