Global economic slowdown (2007-2013) is one of the largest and the longest economic crisis the world endured so far. The impact of this crisis across the world was disruptive to many economies and industries, affecting even their existence. For an economy like India, the IT industry is highly sensitive to global turbulences mainly because of its export orientation buoyed by its competitive IT services exports to the world. Different facets of the IT industry is analysed extensively in the previous chapters to understand its trends and patterns during the global economic slowdown. The finding of this research along with suggestions are presented in this chapter.

6.1 IMPACT ON GLOBAL MACRO ECONOMIC VARIABLES

Various relevant macroeconomic variables like the Real GDP growth, service sector share, exports and service exports are analysed to study the performance of the world economy during global economic slowdown. Analysis was done in terms of performance of the developed and developing economies and country wise.

6.1.1 Global Real GDP

Developed economies contributes to the lion share of global GDP and is capable enough to affect the global GDP in positive or negative way. There is a strong positive correlation between the world real GDP and the real GDP of developed economies. This explains the reason why the recession which affected the developed countries like the US & Euro area brought the global GDP to negative levels. Real GDP correlation between developing economies and the world is insignificant.

Country wise analyses on the effect of global economic slowdown on Real GDP shows that almost all countries are affected to some magnitude, but certain
countries, especially the developed economies were massively and seriously affected more than developing economies in terms of GDP apart from currency devaluation, stock market decline, and bankruptcy. Mostly Euro area and US economies were among the most affected. During the peak of recession, Canada, Japan, Hong Kong, Ireland and Russia also registered negative Real GDP growth. By contrast, during the slowdown, China and India had shown high growth rate compared to many developed economies. During the global economic slowdown, the growth rate of real GDP of developing economies stood above in terms of mean average, with comparatively lower standard deviation, maximum and minimum GDP rate without negative trend. While developed economies registered lower growth rate and negative real GDP rate. Hence it can be concluded that most of the developing economies touched slowdown with slower GDP growth rate, while most of developed economies went through recession, leaving a negative GDP growth rate.

6.1.2 Global Service Sector share to Global GDP

The structural transformation of economies tells how faster the economies are adopting services for robust economic development. Analysis of service sector share to real GDP tries to explain the difference of developed and developing economies’ structural transformation growth during global economic slowdown. During the period, average service sector share to real GDP stood at 73.62% for the developing economies with a growth rate of 0.38% and 56.42% for developing economies with a growth rate of 0.93%. Polynomial trend line plotted to even out fluctuation shows that there a declining trend on the developed economies service sector share to real GDP, while the developing economies has an upward trend. The polynomial trend line fitted to the world service sector share to global GDP shows a declining trend for the developed economies and an increasing trend for the developing economy. The simple linear regression equation calculated for these economies on the annual growth of service sector share to real GDP shows 0.301% for developed and .448% for the developing economies. Apart from the troughs and peaks of the developing economies, this is an indication on the increased trend in structural transformation in developing economies, which underlines the fact that service sector is improving its share amidst the global economic slowdown in developing economies.
It is also evident that the service sector stood as the first and foremost contributor to the GDP in developed economies and developing economies, with an average growth rate of 0.38% and 0.93% respectively. It is worth knowing that it is during the peak of global economic slowdown, many developed countries in the Euro zone as well as the United States and also many emerging developing countries like Brazil, Russia, China and India registered a positive growth in services share to GDP. China and India stands top in the average growth of service sector share to GDP in the world during the global economic slowdown at 1.62% and 1.32% respectively.

6.1.3 Global Exports

During the global economic slowdown many advanced countries like the US & EU recovered from its effect, with the growth of international exports. CAGR for EU, Republic of Korea, Ireland, India, Hong Kong SAR, Australia and the US showed a positive CAGR on export of goods & services share to the countries’ GDP. CAGR of Singapore, Philippines, Brazil, China, Canada, Japan and Russia showed a negative rate during period 2007-2013. The strongest export in goods and services growth was observed in developing Asia of which India topped all top exporters, showing that India responded the global economic slowdown positively in terms of international trade. India’s annual growth in exports stood at 22.68% and the average growth in share of exports of goods and services of GDP at 2.80% which is the highest among all developing countries.

6.1.4 Global Services Exports

Service Sector being the top contributor to the world GDP and output has the highest share of contribution from service exports. The annual growth of trade in services calculated for the developed and developing economies shows that developing economies performed well above the developed economies and stood above its performance trend. Except for the year 2009, all the other years from

2007-2013, the growth of the developing economies showed a higher growth trend than the developed economies.

Based on the CAGR calculated on the UNCTAD report on service export performance, developing economies like India, China and Singapore tops the 6 top services exports. China maintain the first rank amongst developing economies on global service exports revenue followed by India in 2007 and 2013. However, Indian service exports shown the highest CAGR among the top exporters followed by Singapore and Hong Kong SAR.

6.2 IMPACT ON GLOBAL IT INDUSTRY

It is important to determine the global IT industry to understand its response to the global economic slowdown.

6.2.1 Global ICT spending

The total global ICT spending is contributed by the IT spending and telecom spending. During the global economic slowdown the global ICT spending increased by USD 636 billion dollars at a CAGR of 3.11%. Improvement in global ICT spending shows that telecom and IT has played a significant role in the economic growth of developed countries during global economic slowdown. However, it is worth noting that the telecom spending CAGR stood at 2.47% declining its share in total ICT spending from 58% to 56% at a negative CAGR of -0.63%. This can attributed to the improved growth of IT spending during the global economic slowdown.

6.2.2 Global IT spending

Global economic slowdown had negative impact on business IT budgets all throughout the world leaving its growth at -7.3% during the 2009 the peak of global economic slowdown, but during 2008 and 2011, CAGR in IT spending stood at 8.8% and 9.8% respectively. It was seen soon after the peak of the global slowdown, that the business started having more of IT spending than
before. This is evident from the negative growth in IT spending of -7.3% to 4.8% in one year (2010) and later to 9.8% (2011), which is more than 1.6 times in growth rate. However, the global IT spending during the period registered a positive CAGR of nearly 4% and 0.85% increase in share of global ICT spending from 41% to 43%. Global IT spending on IT exports shown a significant strong positive correlation and is explained by a regression model. According to the model there is an increase of USD .333 billion every years, based on the trend of IT spending. It is evident from the above analysis that even during the midst of global economic slowdown.

6.2.3 Global IT sourcing through IT exports

Global IT sourcing markets for IT exports was promising during the global economic slowdown. It maintained an average growth of 10.21%, during the period and maintained a steady growth, except for a decline of -3.36% during 2009. This healthy growth of global IT exports when compared to the average growth of global exports is far better, as exports had its own highs and troughs during the period and registered only 0.73% growth during the period. Global IT spending trend line fitted for Global IT exports, the global IT export actuals stood above the predicted IT exports based on IT spending movement. During 2007 and 2008, the actuals were below the predicted value. However, it evident that global exports outperformed the predictions from 2009, the peak of global economic slowdown. As of 2013, Global Information and Communication Technology (ICT) spending stood at USD 3.78 trillion out of which 43.68% i.e. USD 1.65 trillion is Information Technology (IT) spending.

6.3 IMPACT ON INDIAN SERVICE SECTOR

India is among the fast growing economies in the world, the 10th largest in the world in terms of nominal GDP and third largest by Purchasing Power Parity (PPP). According to the International Monetary Fund (IMF), in 2010, India’s gross domestic product (GDP) grew at 10.6% compared to 10.4% in China, against an average growth rate of 9.7% in developing countries within Asia and 7.5% average growth rate in emerging and developing economies.
(IMF, WorldEconOutlook, 2012). Although growth rate slowdown substantially in 2011 to 7.3%, it was still higher than the average growth rate of emerging economies (6.2%). According to IMF report on World Economic Outlook, a sharp decline in the Indian real GDP growth in 2012 and 2013 has of more of wrong government policy effects than of recessionary pressures and India could regain growth in the real GDP. It was analysed that Indian economy was not trenched in recession, except that the economy faced slowdown, with slow growth in macro variables. Indian service being the largest contributor to the Indian economy is the backbone of all development for many years now. It has the most sensitive industries and is very open to the outside world, which makes it vulnerable for any shocks. Apart from vulnerability, as discussed, it is imperative to understand the structural transformation in an economy to understand the growth of an economy.

6.3.1 Service sector contribution to Indian GDP

In alignment to the performance of global service sector, developing countries, India also shown an improved share of service sector which progressed during the global economic slowdown. Service sector share to Indian GDP has improved from 52.71% to 57.03%, with a CAGR of 1.32%. This can be compared to the world service sector share of GDP which is 69.56%. As of 2013, the developing economies service sector share to GDP stood at 56.42%, while Indian figure stood 0.61% higher. Based on the CAGR calculated for the period 2007-2013, the growth of service sector share to the Indian GDP stood at 1.32%, which is higher than the developed and developing economies share to global GDP which is 0.38% and 0.93% respectively. During the period from 2006-2013, service sector has contributed USD 417.42 billion which is 65% of the total GDP growth. The analysis prove that the Indian service sector resounded better during the global economic slowdown and contributed to the Indian economy more positively.
6.3.2 Service Exports

No country can stay away from the economic fluctuations of a global economy as globalisation has made the world a global village and every country is connected through trade. The countries with higher export orientation are expected to get affected by the recession than the countries with a strong domestic market. India, now a much more matured country than in the 1980s, was still predicted to get affected by the slowdown. However, with the healthy service exports position India gained over the years through the IT exports could have kept India in a safer position during the slowdown. The period was encouraging for the Indian IT industry in terms of contracts, projects, revenue, market share and growth. Indian service exports recorded a seven fold increase in 10 years starting with 20.76 US billion in 2001 to 154 USD billion in 2013. Growth of service exports was positive during the global economic slowdown years, with an average growth of 12.82% growth except for 2009, the peak of global economic slowdown. The growth of service exports to total exports was oscillating from a high of 36.71% in 2008 to the lowest of 31.19% in 2010.

6.3.3 Performance of Service industries in balance of payments

Service sector being a heterogeneous sector is contributed by very vibrant and emerging sectors. Analysis based on the net balance of payments shows that except g.n.i.e and others, all the segments shown a positive net balance during 2013-2014. From 2008 to 2014, the net revenue of various services industries like travel, g.n.i.e., business services, financial services and others declined while transportation, communication services and IT services improved. Of all segments, IT services stood highest in share of net balance of payment, which was more than 7 times than other industries. During the period of 2008-2014, as per analysis made on the balance of payments statistics of RBI, the performance of the IT industry surpassed others service sector domains with an average contribution of 46% to the total trade as of 2014. According to the RBI’s Balance of Payment Statistics, IT exports amounted to 45% of services exports, 21.5% of merchandise exports and as much as 3.5% of GDP.
6.4 IMPACT ON INDIAN IT INDUSTRY

The impact on the Indian IT industry is studied in detail, to understand the trends and patterns of India exports.

6.4.1 Total IT industry Revenue (performance trend and growth)

Even though the tremors of global financial crisis are first set to the IT industry, despite these challenges the IT sector maintained its growth at 11.5% CAGR over the last five years around 25% during 2000-2013. Based on the Simple linear regression model, it is found that USD 9.67 billion has been added every year to the IT industry revenue during the global economic slowdown with an intercept of USD 31.37 billion for the yearly projection. During the slowdown, without getting into negative trends of growth the Indian IT sector maintained a CAGR of 14.58%. The Indian IT industry remains a high impact area and has played an important role in putting India on the global map. It accounts for 8% of India’s GDP and gives employment to 9.5 million people. During the year 2012, the IT sector revenues crossed the first USD 100 billion mark and the exports accounted for more than 70% of the total revenue. As per NASSCOM, the IT industry revenue stands at USD 108 billion in FY 2013 with exports at USD 76 billion. It is worth noting that more than USD 60 billion is added during the slowdown period of 2007-2013, which is 2.25 times of revenue from 2007. The linear regression model projects the resilience of the IT industry for the global economic slowdown period of 2007-2013. Using this linear model equation, it can be predicted that the IT industry revenue shall cross USD 200 billion to reach USD 205.34 billion by 2022.

6.4.2 Share of Domestic and Exports IT Revenue

Analysis on the share of domestic and export IT revenue shows that there is an increasing gap between both markets making the IT industry more export oriented. The IT exports has comparitively more strong relationship with the IT industry revenue than the domestic IT revenue. It is found that the share of domestic IT revenue to total IT revenue has declined from 33.82% in 2007 to
29.70% in 2014, showing a decline of share by 12%. However, the growth was positive during the first half of the global slowdown i.e. till 2008 and then declined to negative figures in 2009 and positive figures on the later years. Simple linear regression done for domestic IT revenue show that there was an average increase of USD 2.414 billion every year, during the global slowdown. The CAGR calculated is 12.13%, based on these predictions it is expected to reach USD 50 billion by 2021.

6.5 IMPACT ON INDIAN IT EXPORTS PERFORMANCE

During the global economic slowdown, the IT industry maintained a double digit growth rate and stayed a net hirer in the Indian economy. This growth has been mainly contributed by the increasing diversification in the geographic base and industry verticals and adaption of varied service offering portfolio. The IT industry through its exports with the highest vulnerability to global changes, has shown how to survive a slowdown and stay resilient to major shocks. These has shed lights on the importance and the lessons that can be learned from the industry in perspective of a turbulence.

6.5.1 Performance of total IT exports revenue

It is the most obvious feature of the Indian IT industry that the major share of the IT industry; i.e. 70.36% as of 2013, is being exported. Hence, the industry is also effectively known as IT exports industry. Indian IT exports constituted nearly 37% of total services exports in 2007, which has increased to nearly 50% in 2013. During the period of global slowdown, growth of IT exports in terms of annual growth rate and the share in the Indian IT industry revenue stood positive and the CAGR registered for 2007-2013 stood at 15.74%. Despite the global slowdown trends, with the current apprehension of watchful optimism, the industry is expected to witness sustainable growth over a two year period and to cross its USD 80 billion export target in 2014 as estimated by Electronics and Computer Software Export Promotion Council (ESC).

59 Kamal Vachani, Hon. Regional Director Of Electronics And Computer Software Export Promotion Council (Esc)- India's It Exports Resilient Despite Difficult Times The Economic Times -Apr 28, 2013
In terms of IT services segments, IT services exports and software and products and ERD shown higher growth compared to Business Process Management. Based on the linear regression worked on these segments revenue against the IT exports to show the extend of relationship these variables possess with the total IT exports revenue, displayed that 99.8%, 99.2% and 97.6% of variations in total IT exports are explained by ITS, BPM and Software products and ERD. IT Services (ITS) exports has a stronger relationship with the Indian IT exports revenue compared to the other two sectors even though they are also strongly related to the IT exports. The growth of IT Services (ITS) exports has the most of its contribution from IT Services (ITS) outsourcing. It was also found that the there is a strong positive correlation between IT services exports and software products and ERD.

The gap analysis on IT exports share to total IT industry revealed that gap between IT exports and domestic IT has increased from 29.42% to 40.6%. This shows that the IT industry has become more export focused during the global slowdown period with more focus on international demand than on domestic demand. This substantiate the fact that Indian IT service providers utilized the opportunity of outsourcing of IT projects by foreign clients which is considered as an alternate to cut short IT budgets during global slowdown and also the benign the foreign exchange rate during the period.

### 6.5.2 Indian IT exports destinations

Amidst the decline in the Indian IT exports share to the US, the IT export revenue still increased mainly due to the benign foreign exchange, increased outsourcing from the client side and exploring new countries. The IT exports revenue from US has more than doubled from USD 19.46 billion in 2007 to USD 47.02 billion 2013 at a CAGR of 14.65%, which is closer to total IT export revenue CAGR of 15.74%. While the IT exports revenue to USA has increased by 2.42 times, it grown 2.22 times to Euro area with a CAGR of 10.28%. Rest of the world including ASPAC grown more than 3 times with a much higher CAGR of 20.12%. This shows that, during the global slowdown, there was an improvement in the Indian market share in the world IT exports mainly due to the capturing of
new markets in the world including Australia, Newzealand and ASPAC. However, US remained the favorite export destination for the Indian IT sector with an average IT exports accounting for 61.60% of the total IT exports, followed by Europe at 28.50%.

6.5.3 Vertical exposure of the Indian IT Exports, with specific reference to BFSI

Banking and Financial Services Industry (BFSI) is the biggest and the most matured industry vertical accounting for 41% of the total IT exports. During the global slowdown, almost all the sectors of the global economy were affected of which BFSI sector had the greatest impact. It is obvious for the IT exports to these verticals be affected during this period due to lower demand to IT services and products. However, it was analysed that the BFSI sector maintained a CAGR of 15.81%, with positive annual growth during the period. Compared to the other verticals, BFSI IT exports to total IT exports showed the highest positive relationship. IT export revenue from the BFSI sector improved 2.82 during global slowdown, from USD 11.10 billion in 2007 to USD 31.00 billion in 2013. Apart from the BFSI sector, other emerging sectors like the retail and healthcare shown higher CAGR than BFSI. This shows that the IT industry also explored new segments during the period, which helped the industry to improve their export revenue.

6.6 IMPACT ON INDIAN IT EXPORTS POSITION IN THE GLOBAL IT MARKET

Indian IT services industry has the leading position in world IT market since many years. Watching India’s success, many developing countries entered into the filed IT services exporting recently leading to increased number of competitors.
6.6.1 Comparative position analysis of Indian IT exports

During the period of global slowdown, India witnessed some closer competitors like China, Ireland, Israel, Philippines, and Russia. Compared to these countries Philippines, a new but prospective entrant of the global IT market registered the highest CAGR in IT exports revenue. India topped the second position against the global CAGR of 7.49%. Except Israel, all countries registered a positive CAGR in IT exports share in the world market. Philippines had also the highest CAGR in IT exports share in the world market with 30.43%, China stood at second position with 4.46% and India third with 2.18%. It was during this period, India lost its leader position in Business Process Management (BPM) exports to Philippines. India maintained the top position in IT Services (ITS) exports amongst the developing countries followed by Ireland and China. Various factors like cost competitiveness, service quality, global delivery, better work infrastructure and of the more skilled resources are the positive sides of Indian IT services compared to the other competitor countries. The comparative analysis of the top IT export countries against India, revealed that, countries like China and Ireland are getting closer to India in terms of IT Exports revenue and share in the world market. This is a caution to India to sustain and improve the position in the world market.

6.7 SUGGESTIONS

The average growth of developing economies real GDP stood higher compared to the developed economies real GDP during the global slowdown. However due to lower share of the developing economies in world GDP compared to developed economies, the effect of growth was not reflected in an improved world real GDP. As the structural transformation favoring service sector are faster in developing economies than developed economies, they can focus more on service sector industries to level play with the developed economies in the share of global real GDP.
The service sector proved be the fastest and major contributor to GDP during global recession for many developed countries like US and Euro zone countries and many developing economies like Brazil, Russia, China and India. The average growth in sector contribution to GDP was the highest for India and China. These economies should focus more on service sector to equip themselves to better withstand global financial turbulences. Trade in services has been intensifying worldwide owed in part to technological improvements which have reduced the cost of cross-border exchange and enabled the growth of services exports. India being technologically strong and abundant in skilled resource, and export oriented economy should also focus on emerging service industries like the financial services, business services, health and retail in a much more intensive way to create a buffer on the advantage India enjoys in terms of service exports through technology.

Irrespective of being a developed or a developing economy, many countries gained and recovered faster from global slowdown through growth of exports. Developing Asia of which India, a major contributor to the total exports performed better in exports during the global slowdown. An effective export orientation can bring recovery in an affected economy and resilience in unaffected economy if innovative export methods are implemented. As the annual growth of Indian service exports to total exports was more than 30% during the global slowdown and the CAGR being the highest among top service exporters, India should focus more on its service exports competencies like infrastructure, human capital and technology.

The great slowdown witnessed and improved global IT spending with a revolution of advanced technology. Global IT sourcing through IT exports shows that except for a decline in growth during the peak of global slowdown, the CAGR maintained was impressive. Also the high correlation between global IT spending and global IT exports also prove that there is bigger opportunity for a country like India to boost IT exports during a global slowdown with innovative business models to ensure performance during global slowdown. Hence on the supply side, a country like India who top in IT services should focus on more technology
innovations which can bring turn around on client business and there by better resilience during a global slowdown. On the demand side, the IT clients can incur IT expenditure, if it reduce the operational expenses and bring efficiency in business services. This proves that with the adoption of new technologies, the sectors of an economy can reduced the capital investment cost in IT and bring efficiency and effectiveness in business.

It is understood that the Indian IT industry being export oriented is concentrating more on international demand than on domestic demand. Low focus on domestic industry ignores the domestic IT developments and consequently affect the technological advancement of the country. Countries like Ireland, Brazil, Russia and Israel has a more balanced approach in IT industry segmentation giving priority to domestic segment for advancing the country technologically. Hence the IT service providers along with the government should also adopt improvement of domestic IT as their national vision and work towards it.

During the global slowdown, the Indian IT industry tried many innovative business models which proved to bring positive results to the industry. The industry applied innovative and rewarding business techniques of exploring new export destinations, covering new and emerging industry verticals, increased global delivery channels, competitive costing, customer centric approaches, improved service quality, adoption of new technologies etc. As workable business models, other related services industries may adopt these techniques for a sustainable growth.

The Indian BPM front-runner share in the world market is lost to Philippines, Ireland is closer to India in software services and China is improving its share in BPM and IT services. Israel and Russia are competitive in Software Products and Engineering Research & Development (ERD) Considering the infrastructure, communication and other favorable business environment, these countries and especially China has an edge on India for future IT Services exports. The notion of India being the most preferred destination for IT Service
outsourcing may remain as a dilusion unless India make deliberate attempts to remove constraints to economic development. Also, unless initiatives on infrastructure sector and business environment are instigated in India through good governance, China can always supersede India to become a global IT services hub in addition of them being the manufacturing hub.

Indian IT R&D is becoming a robust segment with the highest CAGR during the slowdown, resulting in increase in number of patents filed by the Indian IT firms. As technology revolution is advancing worldwide, India should also focus from routine support services to high tech technologies where these inventions can be well comprehended. The SMAC (Social, Mobile, and Accessibility & Cloud) is the very word of today’s Information Technology revolution along with digital enterprise, business re-engineering, customer centric and outsourcing approaches. Consumerisation of IT Engineering Reaserch & Development (ERD) driving the industry growth and encouraging transformational IT outsourcing through technology revolution for digitalizing the clients business, is a great window of opportunity for Indian IT Exports

As technology grows with the advent of internet, uncontrollable growth of social media and increased mobility service there is rise of data to zettabyte.\(^{60}\) It is a window of opportunity for the Indian IT companies for using the data in strategic as well as operational decisions. This big data opportunity is ever increasing and is expected to grow at least 5 fold in 3-4 years.\(^{61}\) IT Services in data management & warehousing is a great window of opportunity for Indian IT Services companies and it should be researched in detail.

Political stability and encouraging policies are a great support for the Indian IT service providers. With stability of macro-economic figures in terms of currency strength, inflation, and trade flows, government has lots to do with sustaining the IT industry growth. The Policy makers of the country and the

\(^{60}\) THE DIGITAL UNIVERSE IN 2020: Big Data, Bigger Digital Shadows, and Biggest Growth in the Far East December 2012 .By John Gantz and David Reinsel .Sponsored by EMC Corporation

\(^{61}\) Credit Analysis & Research Ltd. (CARE), The Indian BPM industry. March 2013
companies themselves should give more priority to rearticulate the brand of India as IT service lead source, for sustaining the greatest contributor of the income in the future as the threats and opportunities are already revealed.

6.8 CONCLUSION

For India, the period of global economic slowdown witnessed the most vibrant and high growth of GDP through service sector with its increased participation of the IT industry. In both real GDP growth and structural transformation, China and India topped the world. However, China had a decline in the growth of total exports and India topped in average growth in exports. During this period, developing economies survived better than developed economies and India shown a comparative resilience in terms of the macro variables of service and also shown its growth during the economic slowdown. Except for 2009, the peak of global economic slowdown, India was positive in GDP, Trade, service exports, IT industry revenue etc.

Despite the challenges faced by the business on cutting down IT budgets to constraint operational expenses, global IT market responded and performed well in terms of global IT spending and IT sourcing during global economic slowdown. The deliberate technological innovation in terms of new service offerings by the Indian IT service providers and expansion of new destinations and verticals during the global economic slowdown period portrayed more as an operationally effective strategy to deal business. This has proved the Indian IT industry as the best performer with robust growth rates amongst all industries and against the global competition during the global economic slowdown. It is analysed that the Indian IT industry represents one of the most successful business models in service sector that can help the economy to sustain the growth competitiveness and resilience as it proved during the global economic slowdown. The various business models adopted by the Indian IT industry coupled with benign US dollar, made India more resilient to global economic slowdown.