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## Economics and Commerce



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## CONTENTS OF THE ISSUE

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- i. Copyright Notice
  - ii. Editorial Board Members
  - iii. Chief Author and Dean
  - iv. Contents of the Issue
- 
1. How to Deal with the Increasing Risk of Sino-US Cold War. *1-11*
  2. The Impact of Exchange Rate on Economic Growth-Case Studies of Countries in the Asean Region. *13-20*
  3. Institutional Authority or Powers of Human Proximity ? Impact of Chosen Macroeconomic Indicators on Quality of Microfinance Portfolios. *21-27*
  4. Economic Analysis of Factors Responsible for Non Adoption of Agriculture Insurance Scheme in a Some District of Madhya Pradesh *29-34*
  5. "Analysis of Impact of Gross Domestic Products (GDP) on Stock Market Movement in India". *35-43*
- 
- v. Fellows
  - vi. Auxiliary Memberships
  - vii. Preferred Author Guidelines
  - viii. Index



## How to Deal with the Increasing Risk of Sino-US Cold War

By Zou Lixing

*Abstract-* With the increasingly complicated, sensitive and perilous Sino-US relations amid the COVID-19 pandemic, it requires a historical, comprehensive and systematic thinking to deal with the increasing risk of Sino-US cold war. This paper conducted some preliminary and systematic analysis into the crux and the approaches to resolve the tensions. At such a critical juncture of the Sino-US relations, the crux of problems is manifested in the following aspects: coronavirus-related stigma; all-round trade disputes; politicization of trade; complication of politics; directly targeted strategy; deteriorating corporate and social base; ideological radicalization. The principal contradictions are those incurred by different national strategic interests. The US is worried about being replaced by China and the impact of China's "nationwide system" on the current international system. On the other hand, China is worried about the US' interference into its internal affairs, system building and national reunification, as well as the US' efforts to contain China's development.

*Keywords:* novel coronavirus; sino-US relations; balanced thinking; global governance.

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# How to Deal with the Increasing Risk of Sino-US Cold War

Zou Lixing

**Abstract-** With the increasingly complicated, sensitive and perilous Sino-US relations amid the COVID-19 pandemic, it requires a historical, comprehensive and systematic thinking to deal with the increasing risk of Sino-US cold war. This paper conducted some preliminary and systematic analysis into the crux and the approaches to resolve the tensions. At such a critical juncture of the Sino-US relations, the crux of problems is manifested in the following aspects: coronavirus-related stigma; all-round trade disputes; politicization of trade; complication of politics; directly targeted strategy; deteriorating corporate and social base; ideological radicalization. The principal contradictions are those incurred by different national strategic interests. The US is worried about being replaced by China and the impact of China's "nationwide system" on the current international system. On the other hand, China is worried about the US' interference into its internal affairs, system building and national reunification, as well as the US' efforts to contain China's development. Among the main reasons is the lack of strategic mutual trust, a healthy mentality; a timely policy-adjustment mechanism, far-sighted vision, in-depth research and exchanges. At the same time, we shall not lose sight of the favorable conditions and foundations for Sino-US relations. The key to improve Sino-US relations lies in innovation. First, innovation of thinking. A balanced and practical thinking is conducive to seek a fulcrum to balance the core interests of both parties, enhance understanding of each other's traditions and feelings, and actively explore the relationship of China and US as the responsible "systematic stakeholders" in global affairs. Second, innovation of mechanisms with the aim of actively exploring the establishment of a notification mechanism for important international agenda and a consultation mechanism for issues arising from normal exchanges. Third, innovation of models. Start with economy and trade, make active efforts to seek the broadest common interests in cooperation, and set up the Sino-US common market and zones for close industrial cooperation between the two countries. Respect science, apply scientific, technical and legal means to deal with possible legal disputes in the pandemic, and actively build a normalized epidemic prevention mechanism together with international organizations, countries and regions. Where there is a will, there is a way. We need to actively open up channels to rebuild understanding, strike a new balance and create a new beginning of the Sino-US relations. It is a periodical achievement of "Research on Aligning the Development of China and the Belt and Road Initiative to the United Nations Agenda for Sustainable Development" (18VDL006), a major

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research program of the National Social Science Fund of China.

**Keywords:** novel coronavirus; sino-US relations; balanced thinking; global governance.

## I. THE CRUX AND MANIFESTATION OF SINO-US RELATIONS

Currently, the contradictions in Sino-US relations focus on the following aspects. First, coronavirus-related stigma. Some American politicians wantonly slander China for the sake of the upcoming presidential elections and long-term damage to China's image and core interests.<sup>1</sup> China's countermeasures need to use mass media, as well as relevant technical and legal tools to make preparations for the long term.

*Second, long-term trade disputes:* Despite the phase-one trade deal between China and the US, many of the imposed tariffs persist. The tariffs imposed by the Trump administration still cover nearly two-thirds of US imports from China, with an average tax rate of 19.3%, compared with the previous rate of 3%. As a countermeasure, China raised tariffs on 57% of US exports to China, with an average tax rate of 20.5%, as against the previous rate of 8%. In contrast, China lowered the average tax rate of its trading partners other than the United States to 6.7%, while working to lowering trade barriers. This shows that Sino-US economic and trade relations are still in a vicious stage. The second-phase and subsequent negotiations may be more difficult, especially when it involves Chinese state-owned enterprise subsidies, market access, foreign investment review, network security, and other matters. The United States will further suppress China's industrial upgrading and innovation capabilities and curb China's long-term development potential.<sup>2</sup> The Sino-US trade dispute will exist for a long term.

*Third, politicized trade:* In fact, if the two sides treat the trade dispute purely as a trade issue, it would not be difficult. One side earns more this time and the other side earns more next time. Friendship will remain even if a business agreement cannot be reached. However, the problem lies in that the US wants to use trade rules to oppress China on an increasingly larger scale, covering technology decoupling, intellectual property rights, 5G technology, investment, and even people-to-people ties between the two countries. For example, at the Munich Security Conference, the US House Speaker Pelosi

coined a new vocabulary,<sup>3</sup> emphasizing Huawei's damage to national security and democratic political systems in a bid to prevent the use of Huawei equipment in the construction of 5G networks by its Western allies such as the United Kingdom.

*Fourth, complicated politics:* Politics, military affairs and security were entangled with each other, involving issues relating to Tibet, Hong Kong, Taiwan, the South China Sea, and human rights, which made the politics increasingly complicated. On the Tibet issue, the US passed the Tibetan Policy and Support Act of 2019 to blatantly interfere in China's domestic affairs and instigated the disregard of the Chinese government's opinions, allowing the Tibetans themselves decide the succession rights of the 15<sup>th</sup> Dalai Lama, the leader of Tibetan Buddhism. On the Hong Kong issue, the US signed the Hong Kong Human Rights and Democracy Act into law at the end of 2019, in an attempt to intervene in Hong Kong and disrupt the stable development of Hong Kong. On the South China Sea issue, the US strengthened the Indo-Pacific strategy and encouraged countries such as Vietnam that have disputes with China to apply new pressure on China. A series of measures from the US side led to a deadlock in bilateral relations.

*Fifth, the overall deterioration of the US policies toward China:* In its recently released reports of the National Security Strategy and the Summary of the National Defense Strategy, the US described China as a "strategic competitor" and a "revisionist power," accusing China of intending to revise the current international order. US President Trump signed the Executive Order on Securing the Information and Communications Technology and Services Supply Chain, indicating targeted actions against China. Both the Republican and Democratic parties of the US have reached a consensus to make China the main strategic opponent and leverage the power of the whole country and engage the whole society to launch an all-round and long-term strategic competition with China. In February 2020, U.S. Secretary of State Pompeo announced at the National Governors Association that competition with China is not just a federal issue, but it is happening in your states, calling on states to take concerted action with the Federal government.<sup>4</sup> In May 2020, the United States announced to revoke Hong Kong's preferential trade status and stop all cooperation between the world-leading research institutions and universities in the US and the Chinese universities and research institutes. As such, the Sino-US relations have deteriorated in all respects.

*Sixth, the deteriorating corporate and social foundation:* The support and expectations of some US companies for China are waning, and their views on China have worsened. Some businessmen in the US believe that China pursues national capitalism, featuring rapidly

growing state-owned assets and unfair competitions. They are dissatisfied with the conditions of market access, technology transfer, intellectual property rights, regulatory obstacles, foreign trade policies, and export restrictions of resources (like rare earth) in China. They are anxious about the use of big data in China. American companies feel that China has failed to live up to their expectations. Instead of adjusting its economic and investment policies, China even systematically implemented measures that are detrimental to American and foreign companies operating in China. What's worse is that quite a few Americans have a relatively serious misunderstanding of China, worrying that China will dominate the future of science and technology and thereby losing confidence in globalization and multilateralism. Some Americans are now openly talking about how to contain China's rise, just as they did with all-round containment measures against the Soviet Union in history. They hope to act as soon as possible, lest it be too late. This explains the social foundation for the deteriorating Sino-US relations,<sup>5</sup> as the public opinion of both sides is developing in a negative direction.

*Seventh, ideological radicalization:* Since China's reform and opening up, the US government and various circles have welcomed and supported China's accession to the international system designed and dominated by the US. Thanks to the joint efforts of the Chinese leaders and the hard-working Chinese people, China, though poor and backward, made outstanding achievements in modernization within a short time. China drew lessons from many market economy rules and regulations in the US and other developed countries, but China did not follow the American path in terms of political system and ideology, which has disappointed the United States. American neo-conservatives and their radicals have always insisted on ideological leadership. In recent years in particular, they have strengthened the strategy to export the US ideologies based on values, missions and interests.<sup>6</sup> Furthermore, they constantly described the Sino-US game as "a struggle between different civilizations and ideologies." Amid the political polarization in the US, both the Democratic and the Republican parties are trying to highlight their identities through some extreme policies. On the other hand, China keeps emphasizing the unified leadership of the Communist Party of China, with the ideology and network control even stricter than in the past. In this way, the Sino-US contradictions in social systems, values and national interests have become increasingly prominent. Therefore, some people think that there is no way for further cooperation between the two countries. However, as pragmatism has always been the mainstream spirit of American society, interests always rise above ideology. Therefore, the ideological contradiction is not the main contradiction between the two sides.

*The principal contradiction between China and the US is caused by differences in their strategic interests. The US is worried about being replaced by China, the impact of China's "nationwide system" on the current international system, as well as the global economy's high dependence on China. Therefore, the US wants to contain China's rapid development, lest that it would be overtaken by China. On the other hand, China wants to maintain the rapid development to become the world's largest economy. This gives rise to the principal contradiction:* There is no use trying to explain it. The fundamental problems lie in China's overly rapid development and the US' desperate efforts to contain China. The radical populism that emerged recently has further intensified this contradiction. Every move of China and the US is regarded as provocation and invites counterattack by the other side, which has severely damaged the broad relations between the two countries. Such fights cover almost all areas ranging from economic and trade, science and technology, humanities, geopolitics, military, human rights, Tibet, Xinjiang, Hong Kong, Taiwan, South China Sea, to the current battle against the COVID-19 pandemic. The United States has vigorously publicized to wage an "all-round war" against China with resources and means in economy, military, diplomatic, information, paramilitary law enforcement, and civil affairs.<sup>7</sup> It now appears that the Sino-US conflict is indeed increasing and both sides are taking a harder attitude towards each other, placing the world in a more uneasy situation.

While Sino-US relations have become increasingly complicated, sensitive and unstable, some other countries have also put forward some new requirements and worries about China that could be summarized as follows.

*Some countries disagree with the treatment that China has enjoyed since its accession to the WTO:* When it joined the WTO in 2002, China's merchandise trade made up less than 4% of global trade, which had almost tripled to 11.8% by 2019. Therefore, some countries like the US cannot accept for China to continue to enjoy the trade arrangements and preferential treatment since its accession to WTO, calling for timely adjustments to the current arrangements. They are also dissatisfied with China in terms of technology transfer, intellectual property rights protection, regulatory system reform, and trade subsidies. These issues can be discussed in depth and in detail to identify which preferential measures are inappropriate. However, it is an undeniable fact that China is still a developing country. China's intention to improve its position in the value chain should not come as a surprise. China has been deepening the reform of the economic and trade system in a targeted manner, while working with the international community to improve the international economic and trade order, maintain the global trade

architecture, enhance the mutually beneficial and equal relations between China and its trading partners, further strengthen intellectual property protection measures, and avoid the collapse of the international trade system. Such moves meet the expectations of the international community and serve China's own interests.

*Concerns about military threats from China:* In terms of international security, China has become one of the world's largest powers, with the second highest defense budget in the world. As such, its words and deeds have received more attention from the international community. In particular, regarding the issue of sovereignty over the South China Sea, the disputes and frictions between China and other countries from time to time have given rise to worries and concerns of some countries who believe that China's diplomatic and security policies have strayed away from the principle of "hiding your strength, biding your time" proposed by Deng Xiaoping. Such concerns are understandable and can be settled. China has always pursued consultations with relevant countries through diplomatic channels and adhered to the principle of "shelving differences and seeking joint development" to solve problems. Instead of resorting to force or the threat of force, China takes seriously the core interests and rights of other countries. As Singapore Prime Minister Lee Hsien Loong said at Shangri-La Dialogue 2019, "To protect its territories and trade routes, it is natural that China would want to develop modern and capable armed forces, and aspire to become not just a continental power but also a maritime power."

## II. NEGATIVE CONDITIONS AND FACTORS OF SINO-US RELATIONS

Due to the aforementioned contradictions and international sentiment, Sino-US relations have been increasingly complicated, tense and sensitive. At such a time in particular need of global cooperation to battle COVID-19, the Chinese and American presidents held friendly telephone conversations regarding the response and cooperation in the fight against the pandemic. After that, however, the opportunity to restore friendly relations and conduct bilateral cooperation in the anti-epidemic fight was missed. Although Chinese leader once said that "we have 1,000 reasons to make China-US relationship right, not a single reason to make it wrong," the Sino-US relations are still going downhill. It is generally believed that it is impossible to restore Sino-US relations to the situations between the 1970s and the 2010s. Kissinger believes that the COVID-19 pandemic will change the world order forever.<sup>8</sup> The current Sino-US relations are neither out of the intention of the leaders nor that of the peoples of the two countries. Both sides aspire good relations and a peaceful international environment. So, what led to the current situation of the bilateral relations? What are the factors

behind the tense and sensitive relations and the confrontations? Comprehensive reflections point to the following reasons.

1. *Lack of strategic mutual trust.* The US is worried that China will replace it and undermine its vested interests in the current international pattern. The US believes that China proposed the “community with shared future for mankind,” the Belt and Road Initiative, the Asian Infrastructure Investment Bank, and the New Development Bank with the purpose of competing with it in the world and excluding it from Asian economic and security affairs. In the meanwhile, China is concerned that the US interferes in China’s domestic affairs, system building, and national reunification. Each move of the US aims at containing China and excluding China from the international community. Each move of China is regarded by some Americans as wrong, fake and out of ulterior motives. The lack of mutual trust increased political sentiment and confrontations, which is difficult to be addressed in the traditional way. The US pays more attention to the use and display of overwhelming military, technological and modern cultural advantages, while China attaches more importance to the self-confidence and decisive psychological effects of public opinion. Why?

In fact, there are deeper forces at work. First, cultural dispute. China and the US are more continent-based cultural unities than nation states. One is a unity of oriental cultures, while the other is a unity of western cultures. Based on economic and political achievements and the vigorous energy and self-confidence of the people, both countries were once elevated to a superior international status. Both consider themselves universal. The governments of both countries often believe their national policies are entirely consistent with the interests of all mankind. Therefore, when such two entities meet in the centre of the world stage, tensions will inevitably arise. Second, zero-sum game. International affairs are often interpreted as inevitable competition for strategic superiority. Both sides are basked in triumphalism. In the 21<sup>st</sup> century, a country that fails to be the world’s number one or a top power is bound to fall behind and get consigned to the dust heap of history. To ignore the existence of strategic compromises is to deny the possibility of win-win and all-win results. In fact, the forest of advanced countries is not a tall tree, but a group of tall trees, and each one in this group is great. Third, the Sino-US relations are intertwined with global issues. The important international issues are global in essence and it is objectively difficult to reach consensus. Seeking common ground while shelving differences is easier said than done. The failure to reach a consensus often leads to contradictions. Fourth, domestic challenges have an impact on its international

strategy. The “deep state” theory and deepening tribalism<sup>9</sup> advocated by the US, as well as the wealth gap and divergence of values behind profound social and political conflicts, have important implications for its international strategies. Both the left-wing populists that advocate reforms and the right-wing conservative populists often end up with nationalism, trade protectionism and antagonism. It must be said that the Sino-US relations do have a chance of going toward the abyss of polarization and populism.

2. *Lack of a healthy mentality.* Some people in the US and the West believe that China’s rapid development and large size will definitely break the existing global interest pattern. Coupled with a historical and deep-rooted prejudice against the Communist Party, they are even *green with envy*. In China, there emerged *upstart mentality* after seeing that China became the world’s second largest economy and developed world-leading industries. They got carried away and lost their heads in a moment of excitement, and put behind the principle of “hiding your strength, biding your time” proposed by Deng Xiaoping.<sup>10</sup> Having not adapted to the changes in the world and China’s development, they failed to adjust their mentality timely, which is understandable. Some people may feel unaccustomed to or even hard to believe China’s changes and development since the reform and opening-up. It takes time to accept these facts.

China’s growth has objectively changed the strategic balance and exerted an important impact on the world pattern. Both China and other countries need to adapt to the new situation. China cannot expect other countries to continue to treat it as they did in the early days of reform and opening up, though it may take decades or nearly a century for China to become a truly developed country. Other countries also need to adapt to a growing China and accept the fact that China will continue to grow stronger. Like other countries, China also has reasonable interest appeals and aspirations, including the development of local high-end technologies such as information communication and artificial intelligence. As a main stakeholder of the international system, China hopes to play an appropriate and constructive role in international institutions, such as the International Monetary Fund, the World Bank and the World Trade Organization. China expects to integrate into existing systems of rules and regulations and participate in the formulation of new rules in trade, intellectual property rights, cybersecurity, and social media. Many existing rules were drawn up earlier without China’s participation. China’s aspiration for the right of speech is reasonable. Some Americans are worried that China will catch up with the US. In fact, although China has increased its GDP and outperformed the US in some areas, there is still a long way to go for it to realize

national modernization in an all-round way. Meanwhile, the US is by no means declining as some Chinese people say, nor is it self-enclosed. On the contrary, the United States made it very clear that it would go all out to compete with other countries in different ways. Changes would inevitably bring about different mentalities. The key is to make adjustment towards healthy mentality after identifying the problem. Getting increasingly mature and maintaining a sustained strategic focus fit into the image of a major responsible country. Timely adjustment of mentality is important and may produce two completely different effects. The active adjustment is conducive to occupying the commanding heights in morality, strategy and technology; while passive adjustment may come at a higher cost and deliver more harm than good.

3. *Lack of timely policy adjustment mechanism.* How to adjust relevant policies in time and make necessary policy reserves in line with changing situation and possible development trends? There is also a lot of work to be done in this regard. For example, it is necessary for China to establish a “Belt and Road” debt sustainability analysis framework in time to prevent debt risks. The US needs to arrive at a new consensus in a timely manner to integrate China into existing systems of rules and regulations, which will benefit both countries. Some international rules lag behind the development of the situation and are not conducive to the development of Sino-US and international economic and trade relations, requiring both sides to make joint and constructive efforts to promote adjustments. For instance, WTO rules are mostly designed for the global economy based on agriculture and manufacturing. As the focus of global economy and trade has shifted to service industries, digital technology and intellectual property rights have gradually become more important. It has become an urgent need to update the existing rules and set out more appropriate rules for some industries. Given the strikingly different interests and ideas of WTO members, it is difficult to reach agreements with a complete consensus among 164 members, making global multilateral trade agreements unrealistic.
4. *Lack of far-sighted vision.* Political election and personnel replacement inevitably aim at winning more votes and the support of public opinion, with the final purpose of winning the election. The urgent political purpose or satisfaction of some people’s demands may lead to the neglect of long-term strategic cooperation and overall demands, which often lead to strategic conflicts between the two sides. With the approaching presidential election in the US, the American people will definitely adopt a stronger attitude towards China, while the American
- politicians will make more efforts to hype up China-related issues to please the voters. Neither Republican nor Democratic candidates are not willing to be accused of a softening attitude towards China. No matter whether President Trump can be re-elected or whether the Republican or Democratic Party wins, the American people’s sentiment toward China will not change in the short run. The leaders of both China and the US are very sensitive to being considered as “weak.” Out of political needs, the United States must make itself slightly superior in any negotiations and take unnecessary provocative actions against China.<sup>11</sup> Having long been bullied by Western countries in modern history, China will never succumb to the West or accept a new unequal treaty upon coercion. Some people in China are not forgiving enough, in a bid to show their patriotism and the power of the country. Those who do not plan for the future will find trouble at their doorstep. If Sino-US relations continue to be tense and uncertain, it will cause great damage to the world even if there is no serious conflict in the end. Many important international hotspot issues, such as the situation on the Korean Peninsula, nuclear non-proliferation and climate change, will be difficult to resolve without the full participation of China, the United States and other countries. The economic loss is not only one to two percentage points of the world’s GDP, but also the loss of the global integrated market and production chain, as well as the sharing of knowledge and achievements in various aspects, which will undermine the healthy development of human civilization.
5. *Lack of cultural exchanges.* First, the lifestyle and context are different. During the epidemic, Chinese people wear masks while Americans do not, which only shows the difference in culture and lifestyle, rather than a political issue. The Chinese are hospitable and always show the best to the outside world, which is regarded by Americans as putting on a show and flexing muscles. This is purely a cultural difference. It is inconsiderate and unrealistic to ask all countries to uphold the same cultural values and political system. In fact, a strength of the mankind lies in its diversity. We can draw lessons from differences of values, views, systems and policies. Human beings have made continuous progress by relying on the exchanges of ideas as well as constant learning and adaptation. However, the political culture of the US is rather unfriendly to the concentrated state power. The more China publicizes the “nationwide system,” the more fearful and aggressive the United States gets. China’s success in a host of international activities, such as the Olympic Games, World Expo and the Belt and Road Initiative, has been met with the claim of the

US and Westerners that China is not a developing country.

Second, the media plays different roles. American media plays an important role in elections and criticism. For example, the US presidential election is closely associated with media progress. Former president Roosevelt excelled at speaking directly to the people through the cable broadcast network that emerged in the 1920s. Kennedy was elected President in the 1960s by relying on the television network. In 2008, Obama won the presidential election by virtue of the Internet, and President Trump relied on Twitter. The criticism from the American media is ubiquitous and deeply-rooted in American society. In particular, the criticism of the government and politicians has become a social norm, contributing to a critical culture. On the contrary, China is used to positive coverage and often reacts radically to negative voices. Given such disparities between the two countries, the lack of exchanges is highly likely to produce misunderstandings.

6. *Lack of in-depth research.* First, the Chinese and American societies did not conduct studies into each other. They have no profound understanding of each other's society, history and culture, particularly the social, political and economic changes. In response to the theory of "a new model of major country relations" put forward by China, the US has not been positive about it, in the belief that the theory is a mere skeleton and fails to take into account the adverse effects on the US' diplomatic relations. In response to the G2 theory introduced by the US, China was not positive about it either, in the belief that G2 theory did not conform to China's basic national policy of not acting as a leader and failed to factor in the adverse impact on China's entire diplomatic relations. Second, the judgment and expression of the international situation are not accurate enough. The international community has assessed the global trends as "complex and ever-changing" and that "it is nearly impossible to return to the situation of win-win globalization at the beginning of the 21<sup>st</sup> century."<sup>12</sup> The change in the world pattern is a long-term process, not something that happened overnight. In the past, people often talked about "dramatic change," giving a fake sense of "restoration of reactionary rule," easily leading to misunderstanding and not conducive to creating a social atmosphere featuring "peaceful mind in the face of disasters, more doing than talking, and stable development." Third, discussions within the party are socialized and domestic policies get internationalized. Failure to think deeply about an expression under different circumstances may produce different semantics and interpretations, resulting in unnecessary misunderstandings.

### III. FAVORABLE CONDITIONS AND FOUNDATIONS FOR SINO-US RELATIONS

*There is no fundamental conflict of interests between China and the US.* Fundamentally speaking, there is no geopolitical conflict of interests between the two sides, neither border issues nor resource disputes. The bilateral relations feature more cooperation than conflicts in history. Shortly after the end of World War II, the two sides had a draw in North Korea, but they already let it go and resumed normal relations. On the contrary, the history of friendly cooperation between the two sides is much longer than that of non-cooperation. Moreover, the cooperation delivered considerable benefits to the people of the two countries and the world.

*Core interests of the Chinese and American countries outweigh ideological disputes.* There is no ideological difference between China and the US that cannot be resolved. Despite different political and social systems, the US and many other countries still hope that China can achieve "peaceful rise," considering the US is a modern country established by immigrants from various places, boasting a natural tendency towards tolerance and practicality. Quite a few elites in American society support the improvement of Sino-US relations, noting that "the New Cold Warriors cannot contain China given its ties throughout the world; other countries will not join us."<sup>13</sup> China has continued with the reform and opening up in recent decades and has adhered to market economy principles in many respects. The US has always been a relatively pragmatic country and will never put ideology above core national interests. Therefore, with a lot in common, China and the US can seek common ground while shelving differences and handle differences through constructive communication.

*Both China and the US play their part in upholding and building the current international order.* As a beneficiary of the current global governance and international order, China basically supports and follows the rules framework led by the US and composed of existing multilateral institutions. In the 1990s, China and the United States signed the Comprehensive Nuclear Test Ban Treaty and ceased nuclear test. China joined the Chemical Weapons Convention and the Biological Weapons Convention, and abided by the Missile Technology Control Regime. Moreover, China worked with the US to prevent some countries from implementing their nuclear programs and pressure some countries to freeze their nuclear weapons development programs. Between 2000 and 2018, the US actively promoted more than 190 resolutions related to "sanctions against countries that violate international rules" in the UN Security Council. China voted in favour of 182 of them. China is the second largest contributor to the UN and UN peacekeeping operations. China

currently has more than 2,500 peacekeepers deployed globally, more than the sum of those deployed by other permanent members of the UN Security Council. China is the largest contributor to global economic growth. China has reduced its global current account surplus from 10% of its GDP to a level close to zero, which means that China has boosted global economic growth with its own demand. Following its accession to the WTO, China has fulfilled its promise to reduce trade barriers to levels lower than those of other developing countries such as India and Brazil. China paid off in advance the World Bank International Development Association's loans for the poorest countries and made donations to the Association. For nearly 20 years, China has been the fastest growing export market for the US. During the global financial crisis, China implemented the largest stimulus plan at the fastest speed to prevent the global depression. In response to the COVID-19 pandemic, China has not only made proper response within the country, but also launched the largest global humanitarian operation in the history of the People's Republic, offering support and assistance to the world in a timely manner and as its ability permits. China's support and maintenance of the current international order has created favourable external conditions for its own development, opportunities for the world's cooperative development, and benefits to the world. Only cooperation can create an open and stable environment that allows all countries to prosper in peace. Both China and the US have the intention and ability to play a constructive role in the current system. China and the US can not only contribute to each other's development, but also to the world's peaceful development. This is an important condition for improving relations.

*The Chinese and American markets are highly complementary.* Sino-US relations are the most important bilateral relations in the world today. In 2016, the total trade volume the two countries reached US\$519.6 billion and China overtook Canada as the largest trading partner of the US. Meanwhile, the US is China's second largest trading partner and the largest exporter. In general, China's industrialization is in the middle and lower reaches of the global industrial chain, while the US is in the upper reach. Both markets have huge demands for each other. With the continuous development of Sino-US relations, such demands for each other have kept growing, accompanied by increasing impact on and responsibility for the international community. Almost all global challenges need to be coordinated by China and the United States. Any global agreement and institution without the participation of China and the US will be imperfect.

*Both sides are psychologically prepared for the improvement of Sino-US relations.* The US expects China to open wider and get more liberalized. In the

meanwhile, the American politicians are well aware that China would never change its political system or copy the political and economic system of the US. Sino-US relations are vital, but China will not be a core ally of the US. China has expectations for Sino-US relations and puts forward to build a new model of major-country relationship featuring non-conflict, non-confrontation, mutual respect and win-win cooperation. A large number of Chinese students and scholars go to the US for study or visit. In addition, the two sides have been engaged in frequent technical exchanges and economic and trade cooperation. Nonetheless, China believes that Sino-US relations will not be much better or worse. That is to say, both sides have expectations for each other, while psyching themselves up for not very optimistic development. However, both sides need a coordinated, cooperative and stable Sino-US relationship. Such psychological basis is very important, objective and rational. It is an important foundation for maintaining long-term stable relationships and a vital condition to improve relations. China is eager to build the military power necessary for its national security, which is a little disturbing, but not surprising.

Sino-US relations are going through a difficult time recently, due to a severe lack of strategic mutual trust, unprecedented mutual resentment between the peoples, signs of shrinking economic, technological and cultural exchanges, as well as escalating trend of trade, information, public-opinion and diplomatic war.<sup>14</sup> At such a time in particular need of global cooperation to battle the COVID-19, the Chinese and American presidents held friendly telephone conversations regarding the response and cooperation in the fight against the pandemic. However, it is still generally believed that it is impossible to restore Sino-US relations to the situations between the 1970s and the 2010s. *This shows that Sino-US relations are indeed hot-tempered.*<sup>15</sup> *However, we cannot say for sure that such trend is irreversible, nor can we misjudge it as a historical opportunity for China's rise.* Where there is a will, there is a way. Both sides should control their temper, try to understand each other, and change their mindsets. People will change, just as their emotions, thoughts and ideas change with surrounding conditions and environment. The mood of a country can change as well. There will be an end to the pandemic, the difficulties are temporary and the prospects are promising. By working together, the two countries are sure to open up new and constructive interaction spaces. This is because Sino-US cooperation serves not only the fundamental interests of both countries, but also the global interests. In addition, it is a requisite for China to realize the great rejuvenation of the Chinese nation. The practice of continuous Sino-US confrontation is undesirable. We must make active efforts to find a solution.

#### IV. THE KEY TO THE DEVELOPMENT OF SINO-US RELATIONS LIES IN INNOVATION

1. *Innovation of thinking.* A balanced and practical thinking is conducive to seek a fulcrum to balance the core interests of both parties, enhance understanding of each other's traditions and feelings, and jointly uphold international order and human values. The two countries shall maintain strategic strength, enhance strategic insight, and insist on constructive exchanges without overstressing temporary gains or losses. Facing an emerging and rapidly developing country, it is natural for a superpower to feel green with envy and even frustrated when its strategy of containment suffers setbacks. China and the US are more strategic competitors than enemies. They cannot defeat each other, and cooperation without competition is not consistent with the laws of development. Competitive cooperation is the norm in Sino-US relations. With the development of such cooperative competition, they will impose higher requirements on each other. Under such circumstance, it is inevitable that they will step on each other's feet and produce discordance, making it highly important to maintain timely, regular and all-round communication. In the ecological environment of the mankind, the balanced thinking and mutual care and support will facilitate sustainable development.<sup>16</sup> The US will be a major power for a long time, but it is still difficult for the US to alone solve any major problems in the world. China will remain to be a developing country for a long time and will not overtake the US in terms of composite national strength in the 21<sup>st</sup> century. However, China will surely achieve great progress and get itself into the forest of world's advanced countries. Sino-US relations need not and should not be a zero-sum game. They need each other for their own development. China and the United States should become responsible "systemic stakeholders" in the international system. As former president Robert Zoellick of World Bank said, China and the US have their own interests in the common cause of maintaining world peace and development. Their own interests are closely related to the common cause as well as to each other. In this regard, China needs to adhere to the principles of "modesty and prudence, seeking common ground while shelving differences; healthy competition, managing crisis; co-evolution, and strengthening exchanges." The principle of "modesty and prudence" is mainly to carry forward the principal of "hiding the strength, biding the time" proposed by Deng Xiaoping. However, the Chinese version of Deng's principle could be easily misinterpreted by foreigners to think that China has a conspiracy. Therefore, we

reworded it as "modesty and prudence." China's continuous growth is bound to incur fear and hostility against it in the world. Therefore, we should guard against arrogance and impetuosity, never claim leadership, never seek expansion or hegemony, and remain committed to peaceful development. China has a time-honored history and culture. Since the founding of New China, particularly since the launch of reform and opening up in 1978, China has achieved leapfrog development toward modernization. However, in general, as a latecomer in modern industrial civilization, China still has a lot to learn and should always remain modest and prudent. "Healthy competition" means that competition is inevitable and competition can serve as a driving force for development. As long as the competition is fair and healthy, there is nothing to fear. "Co-evolution" was introduced by Kissinger in his book *On China*.<sup>17</sup> Kissinger used the biological concept of co-evolution to explain the framework of Sino-US relations. In his opinion, the proper label for Sino-US relations should be "co-evolution" rather than partnership. This provides a new perspective that may be of unique significance for improvement of Sino-US relations in the post-pandemic era. It is impossible and unnecessary for either party to fully agree with the other party's goals and practices, but it is entirely possible for both parties to seek and deliver complementary benefits.

2. *Innovation of mechanisms.* To begin with, make active efforts to explore and establish a notification mechanism for important international agenda. In fact, the Chinese government's report on international relations and the US Congress' consultations are public. What's in absence is the awareness for active and targeted notification. Such notification of information is conducive to avoid misunderstandings and provide the other party with cooperation opportunities in certain areas, thereby adjusting relations and reduce conflicts. Secondly, a *consultation mechanism for issues arising from normal exchanges* should be put in place. Based on consultations, both parties could safeguard their common interests in a professional manner, including normal economic and trade relations and diplomatic cooperation. Moreover, the in-depth institutional consultation helps to develop sincere strategic mutual trust and cooperation. Thirdly, make active efforts to explore and establish a *communication mechanism for global hotspot issues*. In this way, the discussions over sudden crises could be upgraded to a more comprehensive institutional arrangement, eliminate the factors behind the tensions and avoid strategic tension, anxiety and misjudgment. Only when China and the US could stand in each other's shoes can they



know better about how to coordinate their respective interests. Fourth, make active explorations to set up a *lasting mechanism for cultural, economic and trade, scientific and technological exchanges*. Enhance mutual understanding, learn from each other, and jointly make new contributions to human civilization. For example, the establishment of summer camps and social practice bases for elementary and middle school students from the other country will help strengthen the foundation for mutual understanding among young people. Take into account both interests and obligations, engage in sincere cooperation, and view each other's long-term interests in an open and inclusive attitude.

3. *Innovation of models*. Start with economy and trade and make active efforts to seek the broadest common interests in cooperation. This could be promoted from the following two aspects. First, *the two sides could actively explore and set up the Sino-US common market*, with a view to comprehensively reduce trade protection policies that merely consider their own interests and create a level playing field for competition. Second, make *multilateral and active efforts to build the Pacific Community*,<sup>18</sup> with a view toward joint participation in regional development and joint concerns for the economic, political, cultural, and psychological interests of the region. This will help promote the constructive relations between China and the US and with other participating countries, thereby advancing a new type of regional collaboration and cooperation. *From a micro perspective, actively explore the development of co-evolution development zones for industry clusters of China and US*. Within a co-evolution development zone, both sides could apply certain policies to create better conditions for the cluster development of interactive cooperative enterprises, suppliers, service providers, financial institutions, and other related institutions. Build an American town in China and a new Chinatown in the US to promote the in-depth development of Sino-US relations.
4. *Respect science*. It is for sure that science will beat the novel coronavirus that is ravaging the world and damaging people's health. It is for sure that science will overcome the obstacles to Sino-US relations. Currently, the blame-shifting practice around the world in the face of the COVID-19 is in essence for politics, ideologies and votes. In this case, argument is meaningless. What we need is to make good use of science, technology and laws. What's worth mentioning is Francis Fukuyama's views—after the pandemic subsides, perhaps we will have to abandon the simple dichotomy; the key determinant of government performance will shift from the political regime to the national capabilities, particularly the trust in government. Shelving the debate about “superior model” will benefit both China and the United States. The country itself knows best whether its regime is good or suitable. What's suitable for one will not necessarily be good for the other. Therefore, there is no need to argue about it, which in fact is a scientific attitude. In the spring of 2020, a group of 100 Chinese scholars signed an open letter that is published on the website of an American magazine *Diplomat*, calling on the two countries to put aside their differences and work together to fight COVID-19. About 100 American experts on foreign policies, including former senior officials and renowned scholars from both parties, called on the Trump administration and China to strengthen cooperation in battling the epidemic. “Without a certain degree of cooperation between the United States and China, any effort to fight the coronavirus, whether to save American lives at home or fight the disease abroad, will not succeed.”<sup>19</sup> Such scientific cognition is worth advocating.
5. *Tactical innovation*. *First, make good use of contradictions to resolve conflicts*. The West is not a monolithic block. Recently, members of the German ruling coalition brought up the old debate about whether to remain under the protective nuclear umbrella the US has held over the country since the 1950s, demanding the Trump administration to take their nuclear weapons back to the US. This reveals that the contradiction between Germany and the US is both historical and realistic. In addition, Brexit will inevitably aggravate international political turmoil. Neither American politics is a monolithic block. The Democratic and Republican parties have contradictions over the current and long-term interests. Many American elites do not fully agree with their national policies. All these factors could be leveraged to resolve conflicts between China and the US. *Second, analyze the other party's mentality*. We could follow Chairman Mao's suit during the Long March to analyze and leverage the opponent's mentality to carve out a path that is conducive to our own development. Having suffered certain setbacks both in terms of domestic situation and international strategy, the US is certainly experiencing emotional instability. However, as both China and the US are great masters, we need to understand the US' current and long-term intentions amid unstable emotions, so as to make strategic response. *Third, improve publicity methods and strive to create a good environment for communication*. China has a firm resolve to achieve the strategic goal of all-round modernization. An international environment for healthy competition, cooperation and peaceful

development constitutes an essential external condition for China to accelerate modernization and national rejuvenation. All tactics, approaches, measures, and policies should serve this fundamental goal and help to create favorable external conditions. Just as with human beings, each country has both good and bad sides. In response to complex and sensitive Sino-US relations, we must have a flexible tactical awareness, curb the bad side, explore the good side, and develop negotiating skills to connect with each other. On the bright side, it is conducive to creating a good atmosphere. On the dark side, the more you think about it, the worse it may get, whether it is an event, a person or a country. Of course, the security agencies and defense departments should assume the responsibility to consider the worst scenarios and make preparations accordingly. As for politicians and strategists, they have a responsibility to find solutions that could avoid escalating conflicts and catastrophic consequences. *Fourth, make your red line clear.* You could make clear your countermeasures beforehand, specify your strength, and spell out the worst and ugliest scenarios beforehand to the other party. This will help the other party to measure its stakes, promote rational thinking and social support, and facilitate the settlement of problems through negotiation. In the meanwhile, we should develop a clear understanding about the other party to know how to respond accordingly and consider all possible solutions to process some details. *Fifth, conduct in-depth studies into the negotiating skills.* International activities, particularly international negotiations, require the understanding of different countries' negotiation styles, so as to adjust your regular negotiation methods to avoid unnecessary misunderstandings. There must be a flexible compromise plan, since there is no such thing as absolute advantages or disadvantages or absolute wins or losses. The win-win and all-win results are the real biggest win that could sustain. *Sixth, allow some leeway.* Especially when the other party's strategy has suffered a certain setback, we should give due consideration to the other party's psychological burden and avoid further provocation, which may reduce the complexity of the problem. *Seventh, China should step up to establish a special legal expert group to deal with possible legal disputes after the pandemic.*<sup>20</sup>

In the post-pandemic era, the full game between China and the US in politics, economy, culture, military, and international institutions may become more intense. In particular, some people in the US may

attempt at solve domestic problems by intensifying international conflicts, moving toward "decoupling" between China and US. Even though the world will certainly survive the "decoupling," we should try our best to avoid it. The recent warning of Australia's former Prime Minister Kevin Rudd makes sense. "A fully 'decoupled world' would be a deeply destabilizing place, undermining the global economic growth assumptions of the last 40 years, heralding the return of an iron curtain between East and West and the beginning of a new conventional and nuclear arms race with all its attendant strategic instability and risk." The rise of great powers in history is mostly accompanied by great blood-shed, but China has been firmly committed to a path of peaceful competition, cooperation and development. Despite countless doubts and challenges, China will advance bravely in all weathers and succeed in the end.<sup>21</sup>

It is said that the US is performing a combination attack to which China should respond with Tai Chi. The essence of Tai Chi could be summarized as "soft," "round," "coherent" and "coordinated." It is advisable for China to analyze both unfavorable and favorable conditions for Sino-US relations, adapt to changes in the situation, adjust the strategy from time to time, make good preparations for lasting cooperation-struggle-cooperation cycle, make good use of the law to fight back reasonably, show mercy when necessary, make small sacrifices for great plans, and seek the "greatest common denominator" with an eye for co-evolution. The prospects for Sino-US relations on the path of healthy competition and cooperation are bright. *As time has changed, it is impossible for the Sino-US relations to remain the same as in the past. However, it is entirely possible to develop new patterns, feelings and characteristics, arouse new hopes and make new contributions to the well-being of the people in China, the US and the world.*

<sup>1</sup> US Secretary of State Pompeo had the opportunity to play an important role at the G7 Foreign Ministers' Meeting in March 2020, but he insisted on the use of the phrase "Wuhan virus" in the joint statement, which was opposed by foreign ministers of other countries.

<sup>2</sup> Li Cheng. 2019. Sino-US Trade Dispute: Short-term Concern and Long-term Consideration. Institute of Economic of Chinese Academy of Social Sciences, National Institution for Finance & Development. *The Chinese Banker*, (2), 60-62.

<sup>3</sup> Source: WeChat official account "局·很·" (literally meaning "the situation is quite simple"). February 17, 2020.

<sup>4</sup> Wang Jisi. 2020. The Sino-US Relation at its Worst since the Establishment of Diplomatic Relations over 40 Years Ago? School of International Studies, Peking University. *Beijing Cultural Review*, April.

<sup>5</sup> Li Ruogu. 2018. The US' view of China has undergone a fundamental change. *Leadership Digest*, (18), 94.

<sup>6</sup> Jin Jiabin. 2018. The US' Strategy and Tactics for Ideological Export to Foreign Countries. *Mao Zedong and Deng Xiaoping Theoretic Research*, (12), 91-92.

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- <sup>9</sup> <https://edition.cnn.com/2020/02/14/politics/andrew-mccabe-donald-trump-department-of-justice/index.html>
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Regarding Robert Zoellick's "The U.S. Doesn't Need A New Cold War" (op-ed, May 19).
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- <sup>17</sup> Henry Kissinger. (2012). *On China*. Beijing: CITIC Press Group, 515.
- <sup>18</sup> Henry Kissinger. (2012). *On China*. Beijing: CITIC Press Group, 515-518.
- <sup>19</sup> Stop the coronavirus stigma now. *Nature*. April 7, 2020.
- <sup>20</sup> <https://www.nytimes.com/2020/04/10/upshot/coronavirus-future-work-america.html>
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## The Impact of Exchange Rate on Economic Growth-Case Studies of Countries in the Asean Region

By Pham Thi Ha An, Nguyen Thanh Binh & Ho Le Nguyet Cam

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**Keywords:** exchange rate, economic growth, multilateral exchange rate.

**GJMBR-B Classification:** JEL Code: E5, E52, E51



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## I. INTRODUCTION

Economic growth is an increase in the output scale of the economy over a given period of time. To reflect the growth rate, growth is compared according to baseline moments. Economic growth plays a major role for a country: first, economic growth is the first necessary condition for overcoming poverty and backwardness; improving and improving people's quality of life (such as: increasing life expectancy, reducing malnutrition, reducing disease, developing education, culture, sports, etc.). Second, economic growth is a material condition for creating more jobs, reducing unemployment, and improving the standard of living for people. The determination of a reasonable rate of growth will therefore ensure that the economy is in a state of sustainable growth. For macroeconomic managers, the economic growth target at a relatively high rate and stability over a long period of time, associated with the protection of the ecological environment and social progress, remains a priority. In addition to reasonable internal economic policies, attention must be paid to policies relating to foreign affairs and currencies of each country in order to achieve a high and stable economic growth.

Theoretically, the impact of exchange rate deviations on growth has been widely noted in empirical studies but there is no consensus just yet. The majority

of studies show a positive relationship between a more competitive currency (undervalued currency) and growth in emerging markets (Bleaney and Greenaway, 2001; Cottani, Cavallo and Khan, 1990; Dollar, 1992; Gala, 2007; Gala and Libanio, 2010; Ghura and Grennes, 1993; Gluzmann, Levy-Yeyati and Sturzenegger, 2012; Levy-Yeyati, Sturzenegger, and Gluzmann, 2013; Loayza, Fajnzylber, Calder Skott, 2012; Rodrik, 2008; Vaz and Baer, 2014). Some theoretical arguments are used to support this empirical relationship: extrovert policies expressed in the form of currency devaluation in East Asian countries that promote foreign trade and economic growth, while introvert policies are used in Latin America and Africa, linked to overvalued currencies that impede the growth of these currencies in the regions (Cottani, Cavallo and Khan, 1990; Dollar, 1992). Gala and Libanio (2010) argue that an undervalued currency is good for growth because it promotes industrial sector transactions in the economy of a country, which is primarily the activities that generate profit. In contrast, Ofair Razin and Susan M. Collins (1997) pointed out a non-linear relationship between exchange rates and the growth rate of an emerging country. Firstly, exchange rates can have an impact on domestic and foreign investment, accelerate the process of capital accumulation for the economy and thereby affect growth. Besides, exchange rates have an impact on foreign trade, increase the competitiveness of a country in the world and thus also help the economy grow. However, in the long run, maintaining a high exchange rate regime will increase import prices. In the context that inflation is being influenced by many factors and rising, this will create pressure on the monetary market and the commodity market, as well as psychological pressure as well as many other factors that inhibit economic growth. Therefore, evaluating the role of monetary valuation in promoting growth has many research implications.

Practically, on the momentum of economic development and increasingly deeper integration among countries in the world, considering the impact of exchange rates on the economy is extremely important since it creates an impact on domestic market prices, trade balance as well as national output. Therefore, the role of the exchange rate has become increasingly more

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evident, making its impact on economic growth a matter of great concern to many countries, including Vietnam and emerging countries in the ASEAN region.

## II. METHODOLOGY AND DATABASE

### a) Model

Based on the results of a review of previous studies, this study inherits and uses the research model by Habib, E. Mileva, L. Stracca (2017). The model

$$GDP_{it} = \alpha + GDPC_{it-1} + REER_{it} + INF_{it}SAVE_{it}EI_{it}FDI_{it} + u_{it} \quad (1)$$

In which:

GDP<sub>it</sub>: GDP growth rate of country i in year t; GDPC<sub>it-1</sub>: income per capita of country i in period (t-1); REER<sub>it</sub>: real exchange rate of the country in period (t); INF<sub>it</sub>: inflation rate of country i in period (t); SAVE<sub>it</sub>: savings rate of country i in period (t); EI<sub>it</sub>: trade openness of country i in period (t); FDI<sub>it</sub>: inflow of foreign direct investment into country i in period (t). The panel data covering 5 countries was collected for 1989-2018.

#### Real effective exchange rate

The study uses a multilateral real effective exchange rate, which is used when considering many

#### Description of study variables

managed to explain the relationship between the real effective exchange rate and economic growth, especially in low-income and middle-income countries (less than US\$ 6,000/person/year). This process concerning the impact of the real effective exchange rate on economic growth rate is explained by Habib, E. Mileva, L. Stracca (2017) through the miraculous development of foreign trade in developing countries, through the model as follows:

trading partners and is calculated on a weighted average basis. The formula is calculated as follows:

$$REER = \sum \beta_i \times E_i \times \frac{P_i^*}{P}$$

$$\beta_i = \frac{EX_i + IM_i}{EX + IM}$$

Pi\*: is the general price index of country i, P is the domestic general price index; β is the share of trade with country i, EX và IM are the import and export values; E is the nominal rate

Panel 1: Description of study variables

Name of Variable	Unit	Description	Source
GDP <sub>it</sub>	%	$\frac{GDP_t - GDP_{t-1}}{GDP_{t-1}}$	World bank
GDPC <sub>it-1</sub>	%	$\frac{GDPC_{t-1} - GDPC_{t-2}}{GDPC_{t-2}}$	World bank
REER <sub>it</sub>	%	$REER = \sum \beta_i \times E_i \times \frac{P_i^*}{P}$	World bank
INF <sub>it</sub>	%	$\frac{CPI_t - CPI_{t-1}}{CPI_{t-1}}$	World bank
SAVE <sub>it</sub>	%	Gross national income minus total consumption, plus net transfers, calculated by %GDP	World bank
EI <sub>it</sub>	%	$\frac{Export\ goods\ value}{GDP_t} - \frac{Import\ goods\ value}{GDP_t}$	World bank
FDI <sub>it</sub>	%	$\frac{FDI_t}{GDP_t}$	World bank

Source: suggestions by the authors

### b) Research hypotheses

#### Income per capita of previous year (GDPC)

According to Robert J. Barro (1991), people are considered as the key pioneers in the field of research, creating new and innovative products or ideas that help

science grow. Therefore, in countries where people are focused, and income is improved, this is considered a premise to help the economy grow faster. This is also the principle used later on by researchers on economic growth, including Dani Rodrik (2008). According to him,

the human factor or per capita income plays a unique role in most economic growth models. Katsushi S. Imai et al. (2012), Khan and Senhadji (2001),...who also used this in their research stated that GDP per capita achieved in the past is the financial basis for activities related to consumption, investment, government spending, import-export,...laying the foundation for the current economic growth.

The Balassa Samuelson model supposes that a nation's growth is mainly based on an increase in labor productivity in modern manufacturing. Meanwhile, labor productivity in traditional manufacturing and services sectors has little changes. Therefore, as labor productivity increases in modern manufacturing, wages in this sector also increase and this contributes to increased output of goods and services in the future. Thus, in developed countries with advanced science and technology, modern and traditional manufacturing and services are also developed, the manufacturing and service sectors are also enhanced in the following years. In other words, the living standards (per capita income) in these countries are even higher. Therefore, for this to make sense in the long run, Dani Rodrik (2008) per capita income (GDPC) is positively correlated with a country's economic growth rate. Some case studies that show a positive correlation between these two variables include: Dani Rodrik (2008); Robert J. Barro (1991); M.M. Habib, E. Mileva, L. Stracca (2017); Habib, E. Mileva, L. Stracca (2017).

*Hypothesis 1: Per capita income of previous year (GDPC) has a positive correlation with the economic growth rate of ASEAN countries.*

#### *Real Effective Exchange Rate (REER)*

Model (3) by Balassa Samuelson (1964) explained the fluctuations of real effective exchange rates in the long run. Balassa Samuelson argued that no purchasing power parity exists in the long term, or other words, the real effective exchange rate, in the long run, will change. The classical theory of purchasing power parity assumed that all goods are capable of trading among countries around the world. But in fact, goods in the economy are classified into 2 categories: exchangeable and non-exchangeable goods. When prices of exchangeable goods change, the nominal exchange rate also changes to conform to the theory of purchasing power parity. However, the nominal exchange rate can't reflect the price change of non-exchangeable goods; thus it also can't reflect the relative price change between the two commodity baskets in the two countries. The majority of studies show a positive relationship between a more competitive currency (undervalued currency) and economic growth (Dani Rodrik (2008); Gregory T. Papanikos (2015); Lee, Jaeseok, Yue, Chengyan (2017)). Some theoretical arguments are used to support this empirical relationship: extrovert policies expressed in the form of

currency devaluation encourage foreign trade and promote economic growth, while introvert policies concerning overvalued currencies have hindered growth (Habib, E. Mileva, L. Stracca (2017); Bohl Martin (2015); Tang Bo (2014); Hadj Fraj, (2018); Arestis P, BaltarCT, (2018); Ribeiro, RSM, (2019).

In this formula, according to the Balassa Samuelson theory explained by Dani Rodrik, it is expected to carry a negative value, meaning that the exchange rate in richer countries tends to be more undervalued. However, in ASEAN countries, the author expects a positive value from the regression coefficient of this study variable, since these countries are still in the group of developing countries, the higher the exchange rate, the higher the rate of economic growth, which means that local currency is more undervalued.

*Hypothesis 2: The real effective exchange rate (REER) has a positive correlation with the economic growth rate of ASEAN countries.*

#### *Inflation rate (INF)*

Inflation can have a positive or negative impact on a country's economic growth. The positive impact of inflation on economic growth can be in two directions: First, inflation can positively impact economic growth through savings and investment channels. Sidrauski (1967) emphasized that reasonably low inflation will make investment more attractive than holding cash because holding cash reduces its value faster than investment. When an economy experiences inflation, there is always a gap between rising export prices and growing input costs, which is expressed in the gap in wage increases. Tobin (1972) considered moderate inflation as the lubricant of the economy (grease effect), inflation helps manufacturers to reduce real costs of buying labor inputs, thereby increasing savings and investment, encouraging them to expand production scale. Secondly, inflation is proportionally related to growth through demand stimulation effects. Inflation creates a psychological rise in price so people tend to consume more or buy stockpiles, thus increasing aggregate demand. In addition, inflation often leads to a devaluation of the local currency, enhances the competitiveness of the economy, and tends to increase net exports. Increased export demand stimulates demand for domestic goods and services - a source for export. In Keynes' aggregate demand theory, an economy is influenced by both aggregate supply and aggregate demand factors. However, the direct determinant of output and employment is aggregate demand. However, aggregate demand is often lower than aggregate supply due to the tendency to save in the use of income, which is the cause of the economic crisis. To ensure growth, there is the need of State intervention through policies such as expanding fiscal and monetary policies to improve aggregate demand, in which reducing interest rates will create inflation, thereby



stimulating people to use cash for consumption and business investment (Sarel, 1996; Khan and Senhadji, 2001).

The negative impact of inflation on economic growth can be through two directions, including: Firstly, inflation creates changes in relative price and misallocation of resources. Fischer (1993) argued that inflation falsifies the distribution of resources due to changes that are unfavorable for correlated prices. When an economy experiences inflation, the different changes in goods price result in their relative price change, consumer decisions are distorted and the market loses its ability to effectively allocate resources. Second, inflation reduces investment - source activities, input of the economy. The uncertainty in the fluctuation of inflation is the main cause of long-term investment decline. Because investors cannot accurately calculate the real interest rate earned from investment activities, they do not dare to risk much investment, especially in long-term projects. Fischer (1993) developed a scheme to determine the "transmission channel" from macroeconomic policy implementation to growth as follows: rising inflation → declining investment → declining productivity growth rate → declining economic growth. According to Choi et al. (1996), Azariadas and Smith (1996), if inflation increases, it will reduce the actual interest rates that borrowers must pay to lenders, making it even negative. That situation leads to more people wanting to become borrowers instead of savers, thus creating an imbalance in capital and credit markets. Besides, high inflation also distorts taxes (Romer, 2001), reducing the savings motivation of depositors while saving is the source of investment. High inflation also causes "shoe leather cost," "menu cost," "confusion and inconvenience."

In this study, the author expects the inflation rate (INF) to have a positive or negative correlation with the economic growth rate.

*Hypothesis 3: The inflation rate (INF) has a positive/negative correlation with the economic growth rate of ASEAN countries.*

#### *Savings rate (SAVE)*

The ratio of the economy's capital savings to GDP is calculated by dividing (Gross national income minus total consumption, plus net transfers) by GDP. This is the basis for the total investment of a factor that Anderson, Dennis (1990), Muhammad S. Anwer, and R.K. Sampath (1999) used in the relevant research. As Sala-i-Martin (2002) mentioned, countries with high savings rates will have more capital investment and tend to grow faster than countries with less savings and investment. Investment has two important effects on the economy. In the short term, significant changes in investment affect aggregate demand, thereby affecting output and employment. In the long term, investment creates capital accumulation, scientific and

technological development, potential output increase, and economic growth. In this study, the author expects the capital savings rate of the economy to be positively related to economic growth.

*Hypothesis 4: The capital savings rate of the economy (SAVE) has a positive correlation with the economic growth rate of ASEAN countries.*

#### *Trade Openness (EI)*

Trade openness is calculated by the difference between the proportion of exported goods and imported goods value to GDP. A positive indicator of the trade openness variable indicates that the country has a higher proportion of exports than imports and vice versa. This is the factor used in many previous research models such as Drukker et al. (2005), Pypko Sergii (2009),... Trade openness indicates the relationship between the ratio of exports and imports to the country's economic growth. when trade openness decreases, the value of imported goods increases, and the value of exported goods decreases, leading to a decrease in the output of national goods and services. Hans Singer (1950); Chee and Nair (2010); Sghaier and Albida (2013) suggest that in developing countries, income often depends on export revenue and investment depends on this source of income. Therefore, in this study, it is expected that the ratio of trade openness has the same dimensional relationship with economic growth.

*Hypothesis 5: Trade openness (EI) has a positive correlation with the economic growth rate of ASEAN countries.*

#### *Foreign Direct Investment (FDI)*

According to a foreign direct investment report published by UNCTAD (2014), countries in Asia and Southeast Asia are still attractive destinations of the world's FDI. FDI plays a significant role in improving the well-being of host countries thanks to the benefits associated with emerging technology, modern management strategies, skills growth, increased capital generating job opportunities and improving working conditions, as well as the creation of domestic industries receiving FDI (Haddad & Harrison, 1993; Markusen & Venables, 1999). A lot of empirical studies have shown over the past 20 years that the financial sector is an important part of economic growth. This suggests a well-functioning financial system is a prerequisite for a developed market economy (King and Levine, 1993; Levine, 2005). It is obvious from the aforementioned benefits that developing countries are keen to attract FDI and ASEAN countries are no exception. Recent studies analyze the impact of FDI on economic growth, some show that FDI can boost economic growth through spillover effects such as new technologies, capital formation, employment and development of human resources, expansion of international trade

(Alguacil et al., 2002; Balasubramanyam et al., 1999; Basu et al., 2003; De Mello, 1997, 1999; Liu et al., 2004). Furthermore, financial development also helps FDI economies fully absorb the benefits of this inflow of capital (Patrick, 1966; Hermes & Lensink, 2003). Through this analysis, foreign direct investment (FDI) is assumed to have the same dimensional relation to economic development.

*Hypothesis 6: Foreign direct investment (FDI) has a positive correlation with the economic growth rate of ASEAN countries.*

In addition to describing how to calculate variables and data sources, the author also presented the expected impact and proposed basis in the following panel:

*Panel 2: Description of expected impact and proposed basis*

Variable	Expected impact	Relevant studies
GDPC <sub>it-1</sub>	+	Dani Rodrik (2008); Robert J.Barro (1991); M.M. Habib, E. Mileva, L. Stracca (2017); Habib, E. Mileva, L. Stracca (2017).
REER <sub>it</sub>	+	Dani Rodrik (2008); Gregory T.Papanikos (2015); Lee, Jaeseok, Yue, Chengyan (2017); Habib, E. Mileva, L. Stracca (2017); Bohl Martin (2015); Tang Bo (2014); Hadj Fraj, (2018); Arestis P, BaltarCT, (2018); Ribeiro, R.S.M., (2019)
INF <sub>it</sub>	+/-	(+): Sidrauski (1967); Sarel (1996); Khan and Senhadji (2001) (-): Choi et al. (1996), Azariadas and Smith (1996); Romer (2001); Fischer (1993)
SAVE <sub>it</sub>	+	Anderson, Dennis (1990), Muhammad S. Anwer and R.K. Sampath (1999); Salai Martin (2002)
EI <sub>it</sub>	+	Drukker et al. (2005), Pypko Sergii (2009), Hans Singer (1950); Chee và Nair (2010); Sghaier and Albida (2013)
FDI <sub>it</sub>	+	Haddad & Harrison (1993); Markusen & Venables (1999); King and Levine (1993); Levine (2005); Alguacil et al. (2002); Balasubramanyam et al. (1999); Basu et al. (2003); De Mello (1997), Liu et al. (2004)

Source: compiled by author

*c) Methodology*

The research model (1) is proposed by the author based on studies of the real effective exchange rate on the economic growth rate of countries around the world. Using Stata panel data software, the author uses panel data estimation methods such as Fixed Effects, Random Effects, Prais-Winsten to overcome

heteroskedasticity and autocorrelation to construct a model that measures the impact of the effective multilateral exchange rate on development.

The author uses Prais-Winsten (PCSE) method to overcome this phenomenon when the model selected experiences autocorrelation or heteroskedasticity by entities.

III. EMPIRICAL RESULTS AND DISCUSSION

*Fixed Effects (FE) method*

*Panel 3: Results of model 1 regression analysis using FE method*

	Estimation coefficient	Error	Test value	P value
REER	20.38174	2.8039	7.27	0.000
INF	-.1831392	.0510807	-3.59	0.000
GDPC.L1	.0545548	.0778393	0.70	0.485
SAVE	.0680284	.0331824	2.05	0.042
EI	-.1788705	.0361326	-4.95	0.000
FDI	.1679446	.0632435	2.66	0.009
_cons	3.689425	1.387426	2.66	0.009

The estimation results of the model (1) using the fixed effects method show the variables: the changes in multilateral real effective exchange rate (REER), trade openness rate (EI) and direct investment rate (FDI); inflation rate (INF) and the economy's savings rate

(SAVE) have a statistically significant impact on economic growth, the coefficient of previous year's per capita income variable (GDPC<sub>it-1</sub>) is not statistically significant to the economic growth rate in the sample.

RE - Random Effects method

Panel 4: Results of model 1 regression analysis using RE method

	Estimation coefficient	Error	Test value	P value
REER	20.45402	2.946337	6.94	0.000
INF	-.19198	.0512425	-3.75	0.000
GDPC.L1	.1674085	.0768969	2.18	0.029
SAVE	.0040277	.0291532	0.14	0.890
EI	-.0758081	.0237986	-3.19	0.001
FDI	.1032661	.0445314	2.32	0.020
_CONS	5.373469	1.198753	4.48	0.000

The estimation results of the model (1) using the random effects method show the variables related to previous year's income per capita ( $GDPC_{it-1}$ ); changes in multilateral real effective exchange rate (REER); trade openness rate (EI); direct investment rate (FDI); inflation

rate (INF) have a statistically significant impact on economic growth rate in the sample. The coefficient of the economic savings rate variables (SAVE) is not statistically significant to the economic growth rate.

Autocorrelation test

Panel 5: Autocorrelation test results

$H_0$ :	No first-Order autocorrelation test results
$F(1, 4)=$	322.189
Prob > F=	0.0001

To evaluate autocorrelation, the authors conducted Wooldridge test. With the hypothesis:

$H_0$ : There is no autocorrelation.

$H_1$ : There is autocorrelation.

P-value = 0.0001 < significance level of 5%.

Therefore we have the basis for rejecting the hypothesis  $H_0$ , meaning there is autocorrelation in the model at the significance level of 5%.

Prais-Winsten (PCSE) method

Panel 6: Results of regression analysis using Prais-Winsten (PCSE) method

	Estimation coefficient	Error	Test value	P value
REER	16.20055	2.311049	7.01	0.000
INF	-.1339275	.0398918	-3.36	0.001
GDPC.L1.	.204305	.0757989	2.70	0.007
SAVE	.0131429	.0232371	0.57	0.572
EI	-.0651424	.0216488	-3.01	0.003
FDI	.1234931	.0461959	2.67	0.008
_cons	4.453595	1.000834	4.45	0.000

The estimation results of the model (1) using Prais-Winsten method show that previous year's per capita income variables ( $GDPC_{it-1}$ ); changes in multilateral real effective exchange rate (REER); direct investment rate (FDI) have a positive impact with a statistical significance level of 1% on the economic growth rate in the sample. The variables of the inflation rate (INF) and trade openness rate (EI) have a negative impact, with a statistical significance level of 1% on the economic growth rate. The coefficient of the economic

Thus, model (1) estimated using the fixed effects method has the phenomena of heteroskedasticity and autocorrelation. To overcome these two phenomena, the authors conducted a re-estimation of model (1) using the Prais-Winsten (PCSE) method.

savings rate variables (SAVE) is not statistically significant to the economic growth rate.

The estimation results show that changes in multilateral real effective exchange rate (REER) have a statistically significant 1% positive impact on the economic growth rate of 5 countries, which is consistent with the research hypothesis. The positive regression coefficient of 16.2 indicates that 1% devaluation of the local currency will have an impact on the economic growth at 16.2%. Thus, the author's research results are

consistent with those by Dani Rodrik (2008); Gregory T. Papanikos (2015); Lee, Jaeseok, Yue, Chengyan (2017); Habib, E. Mileva, L. Stracca (2017); Bohl Martin (2015); Tang Bo (2014); Hadj Fraj, (2018); Arestis P, BaltarCT, (2018); Ribeiro, R.S.M., (2019), meaning that there is a positive relationship between the real effective exchange rate and the economic growth rate in developing countries, including Vietnam.

#### IV. CONCLUSION

The estimation results of the model using the Prais-Winsten (PCSE) method show that 1% increase in the effective exchange rate will have a positive impact, increasing the economic growth rate of 5 countries by 16.2%. In addition, the previous year's per capita income (GDPCit-1); changes in multilateral real effective exchange rate (REER); direct investment rate (FDI) have a positive impact with a statistical significance level of 1% on the economic growth rate in the sample. Variables of inflation rate (INF) and trade openness rate (EI) have a negative impact with a statistical significance level of 1% on the economic growth rate. The coefficient of the economic savings rate variables (SAVE) is not statistically significant to the economic growth rate. Therefore, the study recommends that ASEAN countries need to orient the exchange rate according to the real exchange rate to evaluate, thereby determining the target exchange rate with a wider margin. And in the current period, to promote economic growth, Vietnam can consider the local currency devaluation mechanism at a moderate level, based on flexible exchange rate management according to the supply-demand relationship with state management to encourage exports and help the economy grow.

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# Institutional Authority or Powers of Human Proximity ? Impact of Chosen Macroeconomic Indicators on Quality of Microfinance Portfolios

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**Abstract-** Portfolio quality is the lighthouse indicator of the finance– macro economy nexus, even more important in unstructured immature environments of development finance sector such as microfinance. Growing over indebtedness indicated by deteriorating portfolio quality seems to signal up coming stress in most microfinance markets, becoming a ricocheting specter of a global repayment crisis lurking in the shades of the past repayment crisis. The question what factors are important for the portfolio quality thus acquires new significance as resources demarginalizing microfinance including regulatory attention are to be directed to most efficient directions. Is it rather the microeconomic forces at arm's length within village banks such as the musketeer principle or rather macroeconomic powers that can be traced to impact of the aggregate portfolio quality?

**Keywords:** *microfinance, cooperatives, conservation, population growth, poverty, musketeer principle.*

**GJMBR-B Classification:** *JEL Code: B22*



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**Abstract-** Portfolio quality is the lighthouse indicator of the finance– macro economy nexus, even more important in unstructured immature environments of development finance sector such as microfinance. Growing over indebtedness indicated by deteriorating portfolio quality seems to signalup coming stress in most microfinance markets, becoming a ricocheting specter of a global repayment crisis lurking in the shades of the past repayment crisis. The question what factors are important for the portfolio quality thus acquires new significance as resources demarginalizing microfinance including regulatory attention are to be directed to most efficient directions. Is it rather the microeconomic forces at arm's length within village banks such as the musketeer principle or rather macroeconomic powers that can be traced to impact of the aggregate portfolio quality? The work studies in a cross-sectional analysis influence of several macroeconomic factors on quality of microfinance portfolio and concludes that despite theories that highlight the prosperity of MFIs in weak institutional environment, certain institutional repercussions such as voice and accountability as well as the strength of the regulatory framework, are more important than human development level or penetration of corruption on the capacity of microcredit debtors to repay their debts in time.

**Keywords:** *microfinance, cooperatives, conservation, population growth, poverty, musketeer principle.*

## I. RELATIONSHIP OF PORTFOLIO QUALITY TO MACROECONOMIC INDICATORS

**F**inancial infrastructure is the economic spine of advanced human communities. Access to capital permits better capital allocation, mitigates risks and transforms savings into productive assets, increasing life standards. Microfinance is one of the tools for such creative process of infrastructural evolution and as such can be propelled or led astray under specific macroeconomic conditions. While the potential of domestic financial reforms on financial deepening is undoubtable, the link between financial reforms and impact on poverty alleviation programs is less clear (Barr, 2003). Some scholars recommend seeing the sector as an integral component of the financial sector considering market failure as the

principal cause for poverty rather than a less market related phenomenon (Stiglitz, 2003). Others recommend creation of separate institutional windows. Both families however, view institutional environment as a key influence on the sectorial performance. The question is what subsystems are the key ones, within the institutional framework.

We propose to study the portfolio quality from three angles or three classes of phenomenon with an expected important influence on loans in arrears: the institutional environment, social cohesion and individual prosperity and microfinance outreach.

A research written by Faria and Mauro (2009) mentions several studies that analyze relations between indicators related to portfolio quality and to chosen macroeconomic and macro institutional variables, including economic growth, FDIs, economic and political instability as well as impact of economic crisis. They point out that equity-like liabilities as a share of countries' total external liabilities are positively and significantly associated with especially institutional quality. Ahlin et al. (2010) concluded in a study of the macro institutional impact on MFIs, concluded that performance of MFIs might function in a better way under advanced institutional conditions. Chikalipah confirmed this view on sample of 291 sub-saharan MFIs (2017). The study by Awaworyi (2015) examined the performance of microfinance institutions (MFIs) in the macroeconomic and institutional context, the country-level determinants of the performance of 563 MFIs, through the lens of the index of institutional quality defined by Kaufmann et al. in 2009, and in consistence with Ahlin et al. (2011), confirmed that growth positively impacted the financial performance of MFIs, while pointing at rivalrous relationship between microfinance and wage employment opportunities and complementarity between higher unemployment levels and MFI performance. Concerning institutional factors, according to Awaworyi (2015), weak institutional performance, except for political stability, is however rather promoting microfinance performance including high corruption levels as well as low regulations, as certain features of a high growth economy are likely to impede the performance of MFIs. Evidently, microfinance benefits from strong institutions yet in some cases, they thrive in an institutionally weak

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environment. The success of fitting microfinance as part of the development process in developing countries is dependent on the macroeconomic environment within which MFIs operate. These effects are also likely to change depending on geographical location and may also be affected significantly by other MFI-specific factors such as operational strategies. According to Fisman and Svensson (2007), corruption significantly reduces firm growth, much more so than taxation and higher corruption may hinder microenterprises' ability to operate and grow. According to Ahlin et al. (2010) reduced corruption is related to faster extensive MFI growth, but has no significant relationship with intensive growth as corruption acts as a barrier to microenterprise endeavors, at least to start-up if not to subsequent growth. Gull, Podder & Shahriar (2017) consider government ideology is an important determinant of MFI performance and consider left-wing regimes as a cause for higher portfolio growth and lower annual expenses. Despite having lower costs, these MFIs are not more sustainable relative to those operating in right wing or centrist regimes. Also MFIs operating in a left wing regime generate lower levels of financial revenue. Political stability is considered by Fernandez et al. (2015) as one of the factors that reduce the likelihood of a MFIs crisis in study analysing the reasons for crises in microfinance institutions.

As to microfinance outreach, it can be considered a function of market maturity and a fundamental influence on the portfolio due to improved mechanisms of peer selection that leads to better portfolio quality (Zeller, 1998; Ghatak, 2000), better peer monitoring and close joint liability (Wydick, 1999; Stiglitz, 1990; Besley and Coate, 1995), thus being a motive for success success of micro-lending (Dixon et al., 2007) due to polished processes and more frequent village bank encounters (Armendariz and Morduch, 2005).

As to the third field of interest of this paper, which is the relationship between HDI and microfinance, there exists abundant research literature on how microfinance increases HDI (Brenner, 2012) as this is one of the justifying answers to the questioning of existence of the microfinance sector, yet surprisingly little research on how increased levels of HDI influence the portfolio quality on microfinance institutions. The answer for the question possibly lies in the lack of reasonable justification for such research, due to the nature of microfinance as a development tool, aiming at development and naturally expecting improvement of portfolio quality in the course of improvement and development. The little research focused on how to increase the financial sustainability of the MFI yields less rigorous evidence such as the results of Javoy and Rozas in 2013, employing HDI as one of three components within the Mimoso index methodology, searching for a correlation between credit provision and HDI from the point of view of financial access, yet also

including other macroeconomic indicators without clear distilled relationship between HDI and portfolio quality.

## II. DATA, METHODS AND MATERIALS

Data on the microfinance sector performance reduced to PAR 30+ and write-off ratio averages in microfinance sector stemming from 55 countries in 2010 of was obtained from Microfinance Information Exchange (MIX) database available to scholars. Data on government effectiveness<sup>1</sup>, corruption control, political stability<sup>2</sup>, rule of law<sup>3</sup>, regulatory quality<sup>4</sup> and voice and accountability<sup>5</sup> in 2010 was obtained from WDI as well as from 2010 UNDP Human Development Report (Kaufmann et al., 2010)

The paper observes microfinance through the positivist lens and within this framework postulates several hypothesis that analyze a potential correlation between quality of microfinance portfolio and chosen macroeconomic indicators. In this set of hypothesis H<sub>1</sub> and H<sub>2</sub> we propose the understanding of microfinance sector as a sector heavily influenced by existential stress, pressures derived from personal relationships in their community, Musketeer Principle related forces (Hes rather than by macroeconomic and meso-institutional conditions in developing markets. In such environment, the motivation of debtors to repay is caused by their prosperity and high transaction costs in case of non-repayment rather than by macro and meso-institutional conditions such as The Human Development Index (HDI), used as one of the regressor, is a composite measure of normalized indices of life longevity, income and education reducing the importance of income to general understanding of quality of human life as used as a complementary measure. There are three important dimensions captured in HDI, which represent gender related issues

<sup>1</sup> Government effectiveness means capturing perceptions of the quality of public services, the quality of civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and credibility of the government's commitment to such policies (Kaufmann et al., 2009).

<sup>2</sup> Political stability and absence of violence is the probability of destabilization of government through unconstitutional means that include politically-motivated terrorism (Kaufmann et al., 2009).

<sup>3</sup> Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence (World Bank, 2017)

<sup>4</sup> The traditions and institutions by which authority in a country is exercised, including the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions (World Bank, 2017).

<sup>5</sup> Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media (World Bank, 2017).



such as reproductive health (lifetime risk of maternal death in %)<sup>6</sup>, empowerment represented by female secondary school enrollment (%), and labor market participation of women (% of total labor force) which are relevant for microfinance due to its women focused orientation. As to the MPI indicator, it is a measure related to Microfinance Intensity or Microfinance Outreach. Both of these indicators were used by economists in the past, yet can be considered as not well developed (Meyer *et al.*, 2000; Vanroose, 2008). Yaron suggested in 1992 that microfinance outreach should be using more variables than loan portfolio value, average loan size, amount of savings or as Christen, Rhyne, and Vogel proposed in 1995, outreach should be categorized by defining along quality of service, scale and depth of outreach to the poor. A major flaw of these indicators is that they use microfinance outreach assessing the number of clients with active loans as well as loan portfolio as principal

pillars, yet do not take into account the savings nor the number of savers or users of other microfinance products. Both indicators can be thus considered as partially misleading. This situation is further strengthened by the data collection methodology done by Mixmarket (MIX), CGAP and Rating Fund which are based on voluntary contributions of MFIs that in most cases are leverage based, mature MFIs registering in the quest for external funding, rather than by savings based informal players not interested in public presentation. General estimates speak of volume of savings as a multiple of loan volume and for this reason, once savings are explicitly considered in the microfinance outreach, the absence of the abovementioned indicator can be considered as a serious econometric fault. For this reason a newly introduced indicator, which is the Microfinance Penetration Indicator (MPI) is employed, calculated in the following way:

$$MPI = \log \left[ \frac{(Savings + Gross\ Loan\ Portfolio)}{(Savers + Borrowers)} \right]$$

Figure 6: MPI calculation

In response to the abovementioned shortcomings, the proposed MPI involves to the intensity – outreach concept also the number of savers and savings volume. It can be expected that developing countries with higher microfinance penetration and more people participating in microfinance programs will have as a consequence a greater share of the poor with access to financial services with higher social and economic development expressed by HDI, but also would have an impact on the repayment discipline which would be rather negative due to availability of other sources to clientele that permit to repay the credit with credit. The statistical model in this study employs cross-sectional observations of 55 countries recorded in 2010, as stated in the descriptive statistical table below, within which we explain the dependent variables through a set of independent socio-economic variables and one microfinance variable. Existing correlation of the cross sectional data analyzed through OLS simple regression analysis justifies the expected impact of macroeconomic indicators on the quality of microfinance portfolios.

### III. HYPOTHESES AND STATISTICAL MODEL

The assumption that quality of microfinance portfolio is influenced rather by institutional environment than by the personal well-being of the debtors and by outreach leads to a formulation of the following hypothesis:

*H<sub>1</sub>*: Portfolio quality expressed as PAR30+ is rather dependent on the existential stress than on macro and meso institutional conditions in developing markets. The debt in arrears as a function of social capital thus diminishes with the development of personal welfare than by microfinance outreach or the development of state institutions that regulate microfinance sector.

*H<sub>2</sub>*: Portfolio quality expressed as Write-off ratio is rather dependent on the existential stress than on macro and meso institutional conditions in developing markets. The capital written off is thus rather influenced by personal welfare than by microfinance outreach or development of the state institutions than welfare.

#### a) Estimation method

Our descriptive analysis model consists of the following variables:

<sup>6</sup> Life time risk of maternal death: the probability that a 15-year-old female will die from a maternal cause assuming that present levels of fertility / mortality do not change in the future (World Bank, 2013).

$$Y_i = \alpha + \beta_1 X_{it} + \beta_2 H_{it} + \beta_3 E_{it} + \beta_4 L_{it} + \beta_5 M_{it} + \epsilon_{it}$$

$Y$  be the portfolio quality ( PAR 30+, default rate)

$\alpha$  be the intercept of the regression line and the Y axis

$X$  be the government effectiveness in market  $i$  and tim  $et$

$H$  be the political stability in market  $i$  and tim  $et$

$E$  be the regulatory quality describing in market  $i$  and tim  $et$

$L$  be the MPI describing in market  $i$  and tim  $et$

$M$  be the voice and accountability in market  $i$  and tim  $et$

$V$  be the HDI in market  $i$  and tim  $et$

$\epsilon_{it}$  be a residual value describing market  $i$  and tim  $et$

Table 2: Summary of Objectives and Methodology of H1 – H2

Research Outline		
Empirical method	Set of Hypothesis 1	Set of Hypothesis 2
		Relationship between PAR30+ and chosen macroeconomic indicators
Regression type	Least squares, cross-sectional data, multiple regression model.	
Regression function	PAR30+ = f( MPI,HDI, CI, GE,PS,RQ,RL,VA)	WRITE-OFF RATIO = f(MPI,HDI, CI, GE,PS,RQ,RL,VA)
Dependent Variable	PAR30+	WRITE-OFF RATIO
Independent Variable	MPI,HDI, CI, GE,PS,RQ,RL,VA	
Expected Results	PAR30+ and Write-off ratio are influenced by both development indices HDI and MGDPI, as dependent variables	

b) Interpretation of results

Our statistic model show weak coefficients of determination R2 in case of H1 test, explaining 31.7% of the variability observed of PAR30+. In case of H2 test we can demonstrate 9.9 % of the variability observed in Write-off ratio. We cannot accept either of the hypothesis H1 and H2, on the influence of microfinance on PAR30+ and Write-off ratios as p-values of Voice And Accountability and in the first case and of Regulatory Quality show statistically significant results (Tab. 1 and Tab. 2), which cannot be said about HDI nor MPI which are not significant on the level of confidence of 95%. The data was tested for heteroscedasticity, employing the White test as well as Breusch-Pagan-Godfrey test, which resulted in satisfactory output allowing the acceptance of the chosen statistical model, due to non- heteroscedasticity of the data.

Table 1: Model 1 - OLS, using observations 1-55 Dependent variable: PAR30+

	Coefficient	Std. Error	t-ratio	p-value
const	8.40098	4.25321	1.9752	0.0544 *
MPI	-0.23479	0.424671	-0.5529	0.5831
HDI	-4.59988	6.40972	-0.7176	0.4767
Corruption Index	2.12665	2.96953	0.7162	0.4776
Gov Effectiveness	-6.00354	3.67717	-1.6327	0.1095
Political Stability	-0.957275	1.06494	-0.8989	0.3735
Regulatory Quality	3.23664	2.37163	1.3647	0.1791
Ruleo flaw	-2.01748	3.07062	-0.6570	0.5145
Voice and Accountability	2.7707	1.41843	1.9534	0.0570 *

Table 2: Model 2 - OLS, using observations 1-55 Dependent variable: Write-off ratio

Mean dependent var	7.623636	S.D. dependent var	5.296027
Sum squared resid	1034.572	S.E. of regression	4.794839
R-squared	0.316928	Adjusted R-squared	0.180314
F(9, 45)	2.319873	P-value(F)	0.030617
Log-likelihood	-158.7379	Akaike criterion	337.4758
Schwarz criterion	357.5491	Hannan-Quinn	345.2383

Table 3

	Coefficient	Std. Error	t-ratio	p-value
const	2.44738	2.96284	0.8260	0.4131
MPI	0.118169	0.232888	0.5074	0.6143
HDI	0.241194	4.54803	0.0530	0.9579
Corruption Index	2.50122	2.22931	1.1220	0.2677
Gov Effectiveness	-3.65554	2.60408	-1.4038	0.1671
Political Stability	-0.0882338	0.541605	-0.1629	0.8713
Regulatory Quality	1.56153	0.903843	1.7277	0.0908 *
Ruleo flaw	-0.716671	1.91436	-0.3744	0.7099
Voice and Accountability	0.185635	0.795312	0.2334	0.8165

Table 4

Mean dependent var	2.935455	S.D. dependent var	2.917319
Sum squared resid	413.9722	S.E. of regression	2.999899
R-squared	0.099239	Adjusted R-squared	-0.057415
F(8, 46)	1.354027	P-value(F)	0.241990
Log-likelihood	-133.5494	Akaike criterion	285.0988
Schwarz criterion	303.1648	Hannan-Quinn	292.0851

The results can be interpreted as the confirmation of the impact of meso-institutional influences on the repayment capacity and determination of the microfinance clientele rather than of microfinance outreach or human development level. In other words, powerful institutional infrastructures seem to have a stronger influence on the write-off ratio as well as on the PAR30+ of the microfinance clients than depth and outreach of the sector or the human development.

#### IV. CONCLUSION

The rather surprising finding of the study rejects the view of microfinance sector as a sector financing shadow economy co-existing in a parallel niche to institutional environment and thriving in the absence of institutions. On the contrary, it provides elements to the findings are aligned with the results of Vanroose (2008), who claims that wealthier countries with better institutions serve more clients.

Even though the generalizability of this research is limited due to the lack of longitudinal dimension of the cross-sectional measurement, the research provides a clue that possibly the view of microfinance as an embryonic sector isolated from mainstream developments is wrong. What if the view of microfinance as an immature financial sector considered as a promising development tool yet a source of credit risk born in uncontrollable environments may be more dependent on the need of assistance provided actively by regulators? What if the need for free expression and respectable accountable institutions may have an important microeconomic impact as the voice and accountability in the combination with the regulatory coherence could be even more important than political stability, microfinance outreach meaning the mature sectorial development and general prosperity level. The question raised by this research is what socio-economic mechanism and macro-microeconomic transforming subsystem lies behind this relationship and how this mechanism makes such voice and accountability in combination with the societal regulatory jacket impact the loans in arrears and the repayment capacity in microfinance portfolios. Understanding of the impact of the abovementioned macro institutional forces on the intimacy of repayment behavior in village banks may offer a new and a vast field of complexities and dependencies between the notion of citizenship, institutional development and finance.

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# Economic Analysis of Factors Responsible for Non Adoption of Agriculture Insurance Scheme in a Some District of Madhya Pradesh

By Richa Khanna & Sadhana Srivastava

**Abstract-** Agricultural vagaries are many and to be deal with them Agriculture insurance was looked upon as the solution to this problem, National agriculture insurance is a part of the solution and it covers factors responsible for farmers to take insurance which are economic and environmental factors; risk factor, Sum insured, farmers benefited, claims received, premium paid, subsidy, Area insured, weather situation and natural calamity .Certain social factors are also looked upon like ; not aware , not interested , unable to pay premium, complex procedure, delay in claim payment , banks available at a distance, no need of agriculture insurance, not satisfied with terms and conditions, not aware about facility. For Agriculture insurance to be effective and highly adaptable it is important to look upon the social factors too, this has been analysed and verified in this paper Season wise to make the policy more effective and adoptable to farmers.

**Keywords:** agriculture insurance, non-adoption, social factors, economic factors, environmental factor, NAIS, season- wise.

**GJMBR-B Classification:** JEL Code: F43



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## I. INTRODUCTION

Agriculture plays an important role in the economic life of India. From time immemorial, agriculture has occupied a pivotal position in India's economic development and it has been regarded as a major economic powerhouse that has a bearing on the whole economy. It has been realized that the success of economic planning in India largely depends on the growth of agricultural sector.

This was achieved through a favourable interplay of infrastructure, technology, extension, and policy support backed by strong political will. The main source of long-run growth was technological augmentation of yields per unit of cropped area. The occupational structure in India comprise of primary or agriculture sector, secondary or industrial sector and tertiary or service sector, interlinked with each other. Agriculture is the base of development for other sectors as it provide raw materials to all other sectors therefore its growth is very essential. Therefore it is necessary that it should have minimum negative effect and steps should be taken to reduce the risk arising in this sector.

The enterprise of agriculture is subject to lot many uncertainties. Still, more people in India earn their

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livelihood from this sector, than from all other economic sectors put together. Agricultural associated with several risks which include adverse changes in both input and output prices, Agricultural risk can be categorized as production risk, price or market, financial or credit, and institutional risks, on the policies as well as on the resources of the government. Therefore, though these measures guarantee some security in a situation of uncertainty, it in fact makes the farmers to wait in anticipation for some relief when there is a loss. Farmers on the other hand have sought to reduce those risks by utilizing modern technology, diversifying the agricultural operations, through intercropping or through the flexible use of fertilizers, pesticides, etc.

These risk leads to another risk of permanent income due to fluctuations in farm income as result to variability in crop yield and from commodity price fluctuation. Agricultural production is unstable because of its dependence on weather and inherent biological uncertainties in managing crops. In India, more than half of the farming is practised as rain-fed agriculture and is at the mercy of the weather. Instability in the agricultural sector cannot be completely eliminated, but its adverse effects can be minimized through various measures. Different strategies have been evolved by the government to combat these risks and uncertainties. Some of them include providing tax remissions, waiving off loans and interest on loans, drought or flood relief measures, etc.

But again, one major impediment here is that by and large financial facilities are utterly inadequate amongst the Indian farmers. Thus, because of these drawbacks, the policy makers of the country have sought to insurance of crops as a feasible measure to combat against the risks and hazards and provide protection to the farmers.

This will encourage them to carry on with their productive efforts, which not only improves the well being of the farmers but also ultimately helps in stabilizing the agricultural output (Mallikrjun S. Hasanbadi, 2005).

Indian agriculture is overwhelmingly a small farmers (operating 2 or less than 2 hectares) enterprise. The small and marginal farmers account for three fourth of the total holdings. The impact of droughts and crop



failure may be disastrous for these resource poor small and marginal farmers.

The crop failure due to natural calamities like drought, floods or attack by pests and diseases may lead to great hardship. Farmers sell productive assets to meet their regular and contingent consumption needs and this impinge upon the future production (T.S. Walker and N.S. Jodha, 1982). The cases of committing suicides by farmers in the event of crop failure or crash in market prices are not uncommon in recent years.

In order to cope with various risks, farmers and rural societies have developed number of risk management strategies. These can be grouped as risk-reducing and risk-coping strategies .Risk reducing strategies are Ex-Ante measures adopted i.e, to find solutions within farming like crop diversification, mixed farming/inter-cropping etc.

Risk coping strategy involves Ex-post measures such as sale of assets, stored stock, loan from relatives and formal institution. Agriculture insurance is different from other general insurance as the natural disaster severely damage crops to large area and thereby the law of large number breaks down which helps in calculating premium and indemnity. The major role played by insurance programmes is the indemnification of risk-averse individuals who might be adversely affected by natural probabilistic phenomenon. Agricultural risk is associated with negative outcomes that stem from imperfectly predictable biological, climatic, and price variables. They also include adverse changes in both input and output prices. Production, price or market, financial or credit, and in situational risks are the different categories under which agricultural risks can be classified. Taking steps to overcome these risks associated with agriculture will be the major step in the agriculture.

(Hazell, Pomareda and Valdes, 1986) indicated that risk and uncertainty pose a serious impediment to agriculture development. Risk effect both crop area and yield, with growing commercialization and climate

changes the degree of risk due to eventualities is increasing , fluctuation in price causes variability in farm income in such a case Minimum support price (MSP) is a means of overcoming price risk.

Another type of risk is production risk and crop insurance is believed to overcome this problem. One method of setting risk to farmers is through crop insurance. He also suggested that if the crop insurance programme is to be useful in agricultural development, it must be carefully implemented to maximize their efficiency for both farmers and governments. Indian agriculture is dependent on monsoons to large extent and the irregularity in its occurrence raises the risk attribute of the farmer. In this scenario of high risk and uncertainty of rain fed agriculture, allocating risk is an important aspect of decision making to farmers. No economic activity can be disassociated with risk.

But risk in agricultural activity is different from other economic activity as the farmer cannot predict the quantitative outcome as it on external factors (weather, pest attack disease etc). Though varying crop yields is the main risk faced by farmers and the poor economic condition of farmers due to which their capacity to face the disastrous consequence of crop failure is very less.

National agriculture insurance scheme (Nais) (Rashtriya Krishi Bima Yojana-Rkby) (Agriculture insurance corporation)

*Meaning and working structure of NAIS:* A Central Sector Scheme namely, National Agricultural Insurance Scheme(NAIS) is being implemented in the country since Rabi 1999-2000, as a part of risk management in agriculture with the intention of providing financial support to the farmers in the event of failure of crops as a result of natural calamities, pests and diseases. The scheme is available to all the farmers – loanee and nonloanee - irrespective of their size of holding. Loanee farmers are covered on compulsory basis in a notified area for notified crops whereas for non-loanee farmers scheme is voluntary.

Table 1: Data for Jabalpur Division of NAIS from 1999-2013 for Rabi season

Year	number of farmers covered	Area insured	sum insured	gross premium	subsidy	claim amount	benefitted farmers
Total	493522	1116576.008	3255831255	104463915.8	3788173	24090174.4	76487

Source: Agriculture insurance corporation (AIC) office, 2015

Table 2: Data for Jabalpur Division of NAIS from 2000-2014 for Kharif season

Year	Number of farmer covered	Area insured	sum insured	gross premium	Subsidy	claim amount	benefitted farmers
Total	2322926	3924919.85	9903705348	625836920.6	34536259	1525096679	365563

Source: A IC office, 2015

## II. RESEARCH METHODOLOGY ADOPTED

*Sample area:* Jabalpur Division which under which 8 districts were taken and data has been collected on the basis of developed and underdeveloped cities.

*Sample size:* 500 farmers were taken according to different land sizes and according to different season.

*Sampling technique:* questionnaire method was taken and convenient sampling method was adopted.

Reasons of Non-adoption of Agriculture insurance under NAIS – season wise-

**Table 3:** Number of farmers not availing insurance due to different reasons according to land sizes for Kharif season

Size of land holdings	1	2	3	4	5	6	7	8	9	10	Number of farmers insuring the crop	Total
Marginal	85 (54.14)	47 (54.02)	22 (39.28)	9 (42.85)	5 (31.25)	2 (28.57)	0 (0)	0 (0)	3 (25)	0 (0)	87	260
Small	43 (27.38)	22 (25.29)	15 (26.28)	4 (19.04)	7 (43.75)	2 (28.57)	3 (60)	1 (50)	5 (41.67)	2 (66.67)	40	120
Medium	24 (15.28)	15 (17.24)	17 (30.35)	7 (33.33)	4 (25)	3 (42.85)	2 (40)	1 (50)	3 (25)	1 (33.33)	37	110
Large	4 (3.18)	2 (3.45)	1 (3.57)	1 (4.76)	0 (0)	0 (0)	0 (0)	0 (0)	1 (8.33)	0 (0)	2	10
Total	156	86	55	21	16	7	5	2	12	3	166	500

Values in brackets shows percentages.  
Source: According to primary data collection.

*Social reasons of non-adoption:*

1. Not aware
2. Not aware about availability of facility.
3. Not interested
4. No need
5. Insurance facility not available
6. Lack of resources for premium payment
7. Not satisfied with terms and conditions.
8. Nearest bank at a long distance
9. Complex procedures
10. Delay in claim payment.

taking insurance, rather if farmers are not taking insurance in this season then it could be due other weather related issues. Statistically these variables has been insignificant.

*Statistical interpretation:*

*Null Hypothesis:  $H_0: \beta=0$ , among different land sizes changes do not occur due to these reasons.*

*Alternative hypothesis:  $H_0: \beta \neq 0$ , among different land sizes changes do occur due to these reasons.*

*It is 5x3 table, Chi square = 12.695 at degree of freedom:  $(5-1)(3-1) = 8$*

The above is the calculated value and the tabulated value of Chi square distribution at 10%, 5% significance is 13.362 and 15.507 respectively, which is more than the calculated hence we accept the null hypothesis i.e,  $\beta=0$ , changes among the different land holdings for not taking insurance is not due to these above factors, this can be interpreted in way that farmers in Kharif season take insurance and these above factors do not interrupt their decision for not



Table 4: Number of farmers not availing insurance due to different reasons according to land sizes for Rabi season

Size of land holdings	1	2	3	4	5	6	7	8	9	10	Number of farmers insuring the crop	Total
Marginal	134 (56.54)	23 (38.33)	11 (33.33)	0(0)	26 (74.28)	7 (43.75)	22 (73.33)	0(0)	0(0)	0(0)	36	259
Small	51 (21.52)	24(40)	10 (30.30)	6 (42.85)	2 (5.17)	6 (37.5)	3(10)	0(0)	5 (41.67)	1 (33.33)	17	120
Medium	48 (20.25)	12(20)	11 (33.33)	7(50)	5 (14.28)	3 (18.75)	5 (16.67)	0(0)	6(50)	2 (66.67)	15	110
Large	4 (1.68)	1 (1.67)	1 (3.03)	1 (7.14)	2 (5.17)	0(0)	0(0)	1 (100)	1 (8.33)	0(0)	2	13

values in brackets shows percentages.

Source : According to primary data collection

\* In a 6x3 table calculated chi square: 23.763 at degree of freedom : (6-1)(3-1) = 10.

The above is the calculated value and the tabulated value of Chi square distribution at 10%, 5% significance is 15.987 and 18.307 respectively, which is less than the calculated hence we reject the null hypothesis i.e,  $\beta=0$ , and accept the alternative

hypothesis i.e, changes among the different land holdings for not taking insurance is due to these above factors, this can be interpreted in way that farmers in Rabi season do not take insurance and these above factors interrupt their decision for not taking insurance.

Table 5: Ratio between Insured and non-insured farmers according to land sizes in Jabalpur Division

Size of land holdings	Total number of insured farmers		Total number of non-insured farmers		Ratio between insured and non- insured	
	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi
Marginal	87	36	173	223	1:2	1:6.2
Small	40	17	80	103	1:2	1:6
Medium	37	15	73	95	1:1.97	1:6.3
Large	3	2	12	11	1:4	1:5.5
Total	167	70	338	432	1: 2.02	1:6.17
Source:	On the basis of primary data collection					

Among the two seasons Kharif has shown better results as compared to Rabi season. In kharif season 1 farmer is insured against 2 farmers non insured and in Rabi season 1 farmer is insured against 6 farmers non insured. Risk factor is very low in Rabi season as per farmers perception therefore they take less crop insurance and due to risk factor being high in Kharif season farmers take more crop insurance. But there is a need to change farmers perception as due to global warming weather in all seasons is becoming non reliable.

### III. FINDINGS OF STUDY

Findings has been discussed on the basis of viewpoint of the following:

#### a) Findings from farmers point of view

1. In kharif season farmers do get effected due to economic and environmental factors; like weather fluctuations, local calamities or other local problems, many of which have not been covered under this insurance scheme i.e, price risk, market risk,

Subsidy rate, rate of farmers benefitted in previous years etc.

2. In Rabi season farmers do get effected due to social factors i.e, not taking insurance they are mainly unawareness, not aware about the availability of facility, not interested, insurance facility not available, lack of resources for premium payment and not satisfied with terms and conditions. These are the main reasons in Rabi season which do effects farmers decision statistically too i.e among different land size changes do occur in number of farmers insured due to these reasons.

#### b) Findings from Government point of view

1. Through primary data analysis it has been found that unawareness is still a major factor contributing to changes in farmers decision for not taking insurance.

2. Among the total sample size of farmers, the main reason for taking crop insurance is due to loan taken from banks and due to financial security against risk, this shows changes in farmers perception by developing trust in policy.

c) *Findings of scheme season wise*

More number of farmers take agriculture insurance in Kharif season as compared to Rabi season depending on seasonal variation.

#### IV. CONCLUSION

The results of primary analysis of Madhya Pradesh according to data being taken of Jabalpur Division, it shows that the reasons of farmers for not taking insurance again varies according to season. In Kharif season it is not the other social factors (unawareness, no need, no availability of insurance, premium bearing capacity is not there, banks available at distance etc) which effect the farmers decision of not taking insurance rather it is the economic and environmental factors which effects farmers decision of taking insurance (i.e, weather conditions and other natural calamity which can be extended further to include price risk and market failure also and not according to land sizes. In rabi season it is the social factor which is effecting farmers decision i.e, unawareness, no need for insurance facility, no need, not satisfied with terms and conditions and lack of premium paying capacity according to land sizes. Hence these factors should be kept in mind for making the scheme more effective in all seasons, by dealing with each condition separately.

#### V. SUGGESTIONS

In kharif season farmers decision of adopting crop insurance is effected due to economic and environmental factors whereas in Rabi season the effect is due to social factor. It has been found that farmers due to high environmental risk take insurance in Kharif season as compared to Rabi season. If changes are being made in the policy they should be made according to seasons, research results shows that in kharif season farmers decision of not taking crop insurance is not effected due to social factors like: unawareness, not aware of insurance facility available, not interested, no need, insurance facility not available, lack of resources of premium payment, not satisfied with terms and conditions, rather it is according to the economic and environmental factor i. e, Sum insured, subsidy, premium rate, price risk, market failures, weather conditions and natural calamity. Hence decision or changes in making policy effective should be worked according to seasons, so that more and more farmers take insurance in Rabi season also along with Kharif season as there are changes according to farmers perception also.

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## “Analysis of Impact of Gross Domestic Products (GDP) on Stock Market Movement in India”

By Vasani Sureshbhai Vithalbhai

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**Abstract-** This paper covers the financial system with two main components GDP and Stock Exchange. It Means this two variables one is study (Independent) variable (GDP) and Stock Market Dependent Variable. Researcher has collected Data from the secondary source like website and Stock Market because study based on secondary information which available on online source. Financial system is very important to control the economy of any country so every country has to focus on it. Researcher has main objective is to know; To know the impact of GDP on stock market as a macroeconomic variable, To find out the relationship between gross domestic products (GDP) and stock market movement in India, To know the impact of gross domestic products (GDP) on the stock market movement in India. Researcher has used Statistical tools for testing hypothesis like Descriptive statistics, Co-relation and simple Regression analysis. Through this study researcher has concluded strong relationship between GDP and SENSEX because co-relation result is 0.965768 and co-relation between GDP and NIFTY 50 is 0.970837.

**Keywords:** GDP, financial system, co-relation, regression, sensex and nifty 50.

**GJMBR-B Classification:** JEL Code: R53



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**Keywords:** GDP, financial system, co-relation, regression, sensx and nifty 50.

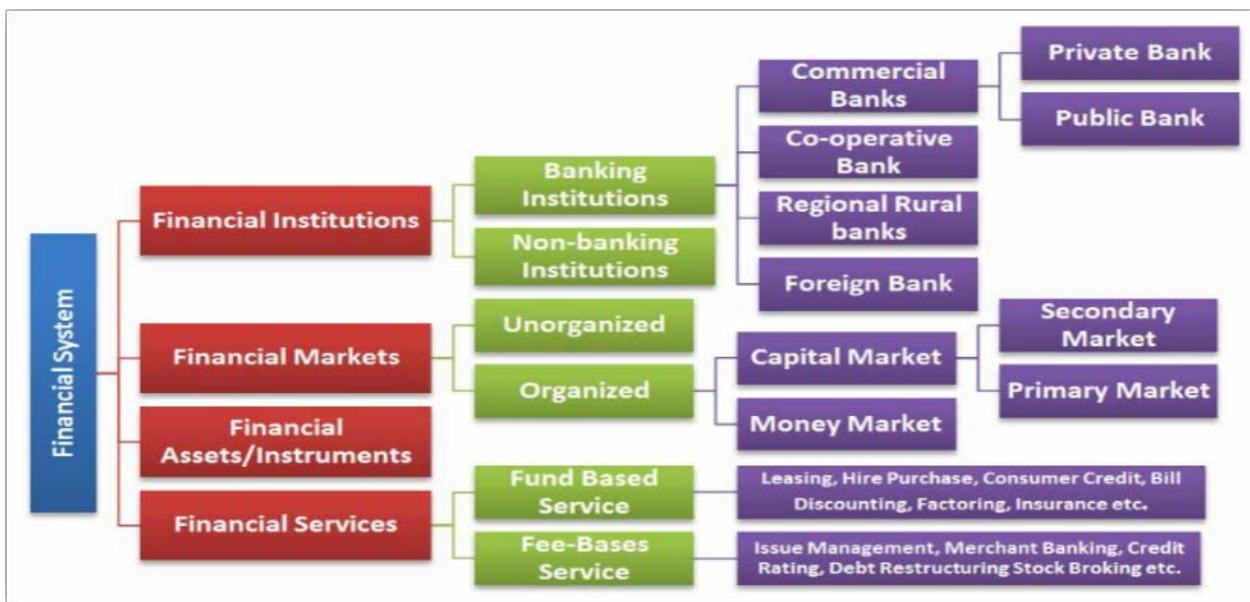
## I. INTRODUCTION

Gross Domestic Product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of the country's economic health. (Chappelow, Gross Domestic Product-GDP, 2019). An IMF publication states that, "GDP measures the monetary value of final goods and services that are bought by the final user produced in a country in a given period of time (say a quarter or a year)." (Chappelow, J., 2019). A financial system plays a vital role in the economic growth of the country. It intermediate between the flow of funds belonging to those who save a part of their income and those who invest in productive assets. It mobilizes and usefully allocates scare resources of a

country. A financial system is a complex, well-integrated set of sub systems of financial institution, market, instrument, and services which facilitate the transfer and allocation of funds, efficiently and effectively. The Indian financial system can also be broadly classified into the formal (organized) financial system and informal (unorganized) financial system. The formal financial system comes under the preview of the Ministry of Finance (MoF), the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), and other regulatory bodies. (Chen, J., 2019) Though GDP is usually calculated on an annual basis, it can be calculated on a quarterly basis as well. In India, for example, the government releases an annualized GDP estimate for each quarter and also for an entire year. Most of the individual data sets will also be given in real terms, meaning that the data is adjusted for price changes, and is, therefore, net of inflation. (CHAPPELOW, Gross Domestic Product-GDP, 2019) (Chappelow, J., 2019)

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(Sources: <https://www.investopedia.com/terms/f/financial-system.asp>)

Figure 1.1: Financial System

## II. REVIEW OF LITERATURE

Attahir, B. A. (2016) has analyzed Economic Growth Impact of Indian Stock Market: An Econometric Investigation. Data on the variables were sourced from the Handbook of Statistics on Indian Economy, 2014 and World Bank Indicators. The data are in annual series and were collected for the period 1982 to 2013. The objective of the study is to examine the short run and long run impacts of stock market development on economic growth of India. The study adopted the Vector Error Correction Model (VECM) methodology in estimating the long run and short run relationship among the Variables. The study started by testing for stationary of the data, and when variables were found to be stationary only after taking their first difference, the Johansen Co integration test was adopted to determine whether or not the variables have long run relationship. Having found the variables to be co integrated, the VECM model was run where the short run relationship among the variables and short run dynamics of the model were estimated. As a further tool of analysis, impulse response function (IRF) was also adopted by the study. Findings of the study showed stock market to have a negative effect on economic growth in the long run, while in the short run, it is found to have a positive effect on economic growth of India. The short run impact can be attributed to it being a source of finance to enterprises, but however, the long run negative impact of stock market development can be viewed from the angle of its high level of volatility and casino-like operation which entails a lot of speculative activities. (Attahir, 2016)

Charles, T. C., Vasso, P. L., & Timothy, S. F. (2012) have analyzed Stock Prices and Output Growth: An Examination of the Credit Channel. The researcher's have collected data from U.S. Department of Commerce, Bureau of Economic Analysis; Board of Governors of the Federal Reserve System; and New York Stock Exchange. The main objective of the study is when stock market values fall; we know it means investors expect lower economic growth in the future. But can stock market declines actually affect future growth? There is some evidence that they can through the credit channel. The researchers conclude that This Economic Commentary has reviewed the reasons why stock prices and real GDP may be correlated. In doing so we have emphasized that firms' balance-sheet effects may be important in understanding output growth. To understand this channel we sometimes treated stock price changes as occurring for some exogenous reason, like the bursting of a stock market bubble, and examined why this would affect investment and output. Of course, stock price changes very rarely occur without a change in some fundamental economic variables. Reality is likely a synthesis of both scenarios: Future GDP growth affects current stock prices, and this change in stock prices affects future GDP growth. Most people view the credit channel as explaining how the feedback effects. (Charles, Vasso, & Timothy, 2002)

D. V. Lokeswar, R. (2012) has analyzed impact of inflation and GDP on stock market returns in India. The researcher's have collected Information regarding inflation, GDP, Stock market returns and interest rates from the websites of the Ministry of finance, economic survey of India, BSE India and RBI. Books will be



referred to support the formation of certain conceptual definitions and depth knowledge of the subject. Journals, Magazines and newspapers will be used to accumulate the latest information about the variable under study in the research. Interviews with experts will be undertaken if necessary to tap the unknown facts and figures of what I think might have been missing in the data. The main objective of the study is to study the relationship between stock market returns with respect to inflation, GDP and interest rates and To find the strength of the relation between stock market returns with respect to inflation and GDP. The researcher will also use regression, correlation to find out the nature and strength of the relationship between the variables under study. An important finding is that the explanatory variables in the model result in 95.6% influence on the stock prices of quoted companies for the period 1997-2006. It also provides preliminary evidence regarding the relative importance of the explanatory variables on stock prices of quoted companies. Specifically, the findings suggest that RDGP was the most important variable influencing stock prices. Conclusively, government should implement policies that will reduce inflation rate and poverty level through infrastructural development and improved standard of living. Also, interest rates should be made moderate in order to encourage investment and transactions in the stock market. (D. V. Lokeswar, 2012)

*Kishorsinh, N. C., & Mahendrakumar, T. S. (2018)* have analyzed the Impact of Gross Domestic Products (GDP) on Stock Market Returns in India. The researcher's have collected data from the official website of BSE (Bombay Stock Exchange). Data of GDP growth rate is collected from World Bank Reports and other websites, World data bank etc. The main objective of the study is Analysis the impact of GDP Growth rate on Stock Market Returns. The researcher's have used GDP as an independent variable and stock market as a dependent variable. The researcher's have used Descriptive tools of statistics, Karl Pearson Correlation and Regression Analysis for the test of the hypothesis. The Study on Impact of BSE SENSEX Index on GDP growth rate shows that, SENSEX Index of BSE is significantly affected on growth rate of GDP. BSE SENSEX Index is increased, and then growth rate in GDP is also increased. Correlation between both variable is significant i.e. 0.0937 shows the positive relationship. Specifically, the findings suggest that role of stock market (BSE SENSEX Index) is one of the most important influencing factors of GDP and vice a versa. So, the GDP is predictable variables for Indian stock market returns. Conclusively, the government should try to maintain the growth rates of GDP and liquidity in the primary, secondary and derivatives market of stock market. (Kishorsinh & Mahendrakumar, 2018)

### III. PROBLEM OF THE STUDY

The stock market is a general term used to refer to an organized exchange where shares of stock are traded. The movement of stock market depends on the rational well as the irrational behaviour of the investor. The most imposing role of stock market is to work as a relationship between savers and borrowers. This helpful for the generation of saving form the huge group of small savers and these saving can be investment in profitable means. The investor and creditor liking together with stock market operation. The stock market engaged the reallocation of money from the different firm of the economy. Investors consider macroeconomic variables when they value stocks. Interest rates, exchange rate, inflation, GDP are very important among these macroeconomic variables which affect the performance of the stock market. A number of studies have been conducted to determine the relationship between the macroeconomic variable and stock prices in the past. The findings of these studies show that there is a strong relationship between macroeconomic variable and stock prices. Some studies showed no relationship between the economies and the financial markets of less developed countries, like Asian markets, Fung and Lie (1990) explained this by saying that "macroeconomic factors can't be reliable indicators for stock market price movements in the Asian markets because of the inability of stock markets to fully capture information about the change in macroeconomic fundamentals."

There are many debatable opinions on the relationship between the GDP and stock market movement. Hence a study will be undertaken to observe the impact of GDP on stock market movement and the relationship between GDP and stock market movement. Therefore, the statement of problem for this research is..

### IV. OBJECTIVES OF THE STUDY

- a) *Specifically these are the main objectives of the study*
1. To find out the relationship between gross domestic products (GDP) and stock market movement in India.
  2. To know the impact of gross domestic products (GDP) on the stock market movement in India.
  3. To know the impact GDP on stock market as a macroeconomic variable.



## V. HYPOTHESIS OF THE STUDY

1. Alternative Hypothesis ( $H_1$ )
2. Null Hypothesis ( $H_0$ )

Hypotheses are as under;

Table 1.1: Hypothesis of the study

$H_1$	There is a significant relationship between <b>GDP</b> and <b>Stock market</b> movement.
$H_0$	There is no significant relationship between <b>GDP</b> and <b>Stock market</b> movement.
$H_1$	There is a significant relationship between <b>GDP</b> and <b>SENSEX</b> .
$H_0$	There is no significant relationship between <b>GDP</b> and <b>SENSEX</b> .
$H_1$	There is a significant relationship between <b>GDP</b> and <b>NIFTY 50</b> .
$H_0$	There is no significant relationship between <b>GDP</b> and <b>NIFTY 50</b> .
$H_1$	There is an Impact of <b>GDP</b> on <b>SENSEX</b> .
$H_0$	There is no impact of <b>GDP</b> on <b>SENSEX</b> .
$H_1$	There is an Impact of <b>GDP</b> on <b>NIFTY 50</b> .
$H_0$	There is no impact of <b>GDP</b> on <b>NIFTY 50</b> .

## VI. METHODOLOGY USED BY THE RESEARCHER & RESEARCH DESIGN

### a) Title of the study

Analysis of Impact of Gross Domestic Products (GDP) on Stock Market Movement in India Period of the study In this study used the quarterly data of GDP, BSE SENSEX and NSE NIFTY 50 index from the first quarter of 2011-2012 to second quarter of 2019-2020.

Researcher has used in the study probability sampling method, data collected from the website of Reserve Bank of India, Bombay Stock Exchange and National stock Exchange and statistical tools used by the researcher like descriptive tools of statistics, Karl Pearson's Simple Co-rrrelation and Simple linear regression model to analyzed secondary data which was collected from various website. (Priti & P.K., 2017) (Deepak & Neena, 2011)

## VII. DATA ANALYSIS

Table 1.2: Data of GDP and SENSEX for Correlation

YEARS	QUARTERS	GDP	SENSEX	YEARS	QUARTERS	GDP	SENSEX
2011-12	Q1	1969132	18845.87	2016-17	Q3	2637004	26117.54
	Q2	1913207	16453.76		Q4	2716448	25341.86
	Q3	2073896	15454.92		Q1	2797534	26999.72
	Q4	2150712	17404.2		Q2	2791258	27865.96
2012-13	Q1	2074589	17429.98	2017-18	Q3	2832025	26626.46
	Q2	2047909	18762.74		Q4	2898152	29620.5
	Q3	2177528	19426.71		Q1	2962815	30921.61
	Q4	2246251	18835.77		Q2	2974645	31283.72
2013-14	Q1	2206230	19395.81	2018-19	Q3	3039403	34056.83
	Q2	2193897	19379.77		Q4	3127303	32968.68
	Q3	2314941	21170.68		Q1	3190452	35423.48
	Q4	2348579	22386.27		Q2	3178747	36227.14
2014-15	Q1	2377154	25413.78	2019-20	Q3	3231406	36068.33
	Q2	2379356	26630.51		Q4	3306332	38672.91
	Q3	2457010	27499.42		Q1	3348005	39394.64
	Q4	2498612	27957.49		Q2	3316377	38667.33
2015-16	Q1	2560191	27780.83				
	Q2	2578225	26154.83				

(Sources: Wikipedia, Investopedia, Websites of NSE and BSE etc)

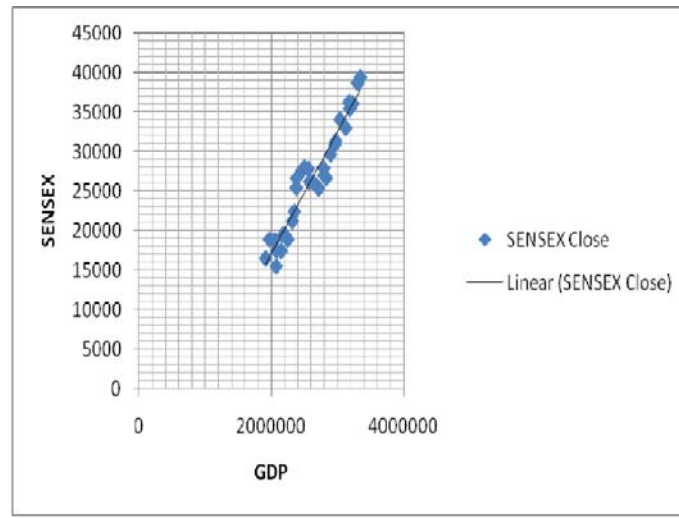
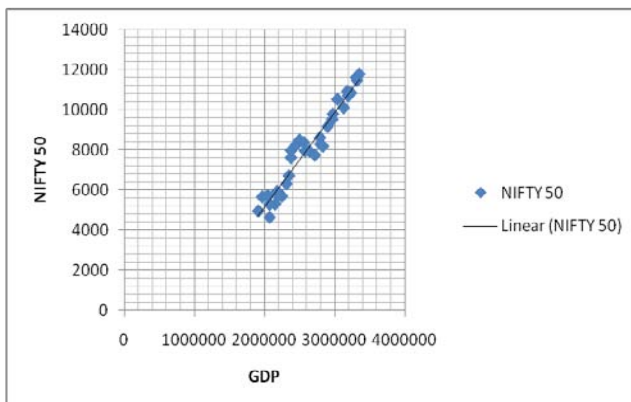


Figure 1.2: Co-relation chart and Interpretation

Table 1.3: CO-relation Between GDP and NIFTY 50

YEARS	QUARTERS	GDP	NIFTY50	YEARS	QUARTERS	GDP	NIFTY50
2011-12	Q1	1969132	5647.4	2016-17	Q3	2637004	7946.35
	Q2	1913207	4943.25		Q4	2716448	7738.4
	Q3	2073896	4624.3		Q1	2797534	8287.77
	Q4	2150712	5295.55		Q2	2791258	8611.15
2012-13	Q1	2074589	5278.9	2017-18	Q3	2832025	8185.8
	Q2	2047909	5703.3		Q4	2898152	9173.75
	Q3	2177528	5905.1		Q1	2962815	9520.9
	Q4	2246251	5682.55		Q2	2974645	9788.6
2013-14	Q1	2206230	5842.2	2018-19	Q3	3039403	10530.7
	Q2	2193897	5735.3		Q4	3127303	10113.7
	Q3	2314941	6304		Q1	3190452	10714.3
	Q4	2348579	6704.2		Q2	3178747	10930.45
2014-15	Q1	2377154	7611.35	2019-20	Q3	3231406	10862.55
	Q2	2379356	7964.8		Q4	3306332	11623.9
	Q3	2457010	8282.7		Q1	3348005	11788.85
	Q4	2498612	8491		Q2	3316377	11474.45
2015-16	Q1	2560191	8368.5				
	Q2	2578225	7948.9				

(Sources: Wikipedia, Investopedia, Websites of NSE and BSE etc)



**Interpretation**

Calculated value of co-relation between GDP and NIFTY 50 is 0.970837, so we can interpret that there is strong positive relationship between these two variables. Here we can say if GDP increase in that case our NIFTY 50 is also increase because of that result of correlation.

Figure 1.3: Correlation Chart

VIII. SIMPLE LINEAR REGRESSION MODEL

Regression analysis between GDP and SENSEX Hypothesis of the study

Table 1.4: Result of Impact of GDP on SENSEX

Variable	R <sup>2</sup>	Equation	P. value	Seg <sup>t</sup> 5%	H0(Accept/Reject)
SENSEX	0.93	Y=0.015-13852.9x	4.40084E-08	0.05	Rejected

a) Interpretation

Regression Analysis between GDP and BSE SENSEX Index shows there is positive significant correlation between these two Variables. From the above ANOVA table f cal- value (443.53) is more than the f tabulated value (2.55676E-20). So, we fail to accept the null hypothesis at 5% level of significance. We can

say that, there is an impact of GDP on BSE SENSEX Index. As per the above table we observe that p-value (4.40084E-08) in ANOVA table is less than 0.05 at the level of 5% significance. Therefore the H0 (null hypothesis is) rejected. So we conclude that there is a significant impact of GDP on BSE SENSEX index.

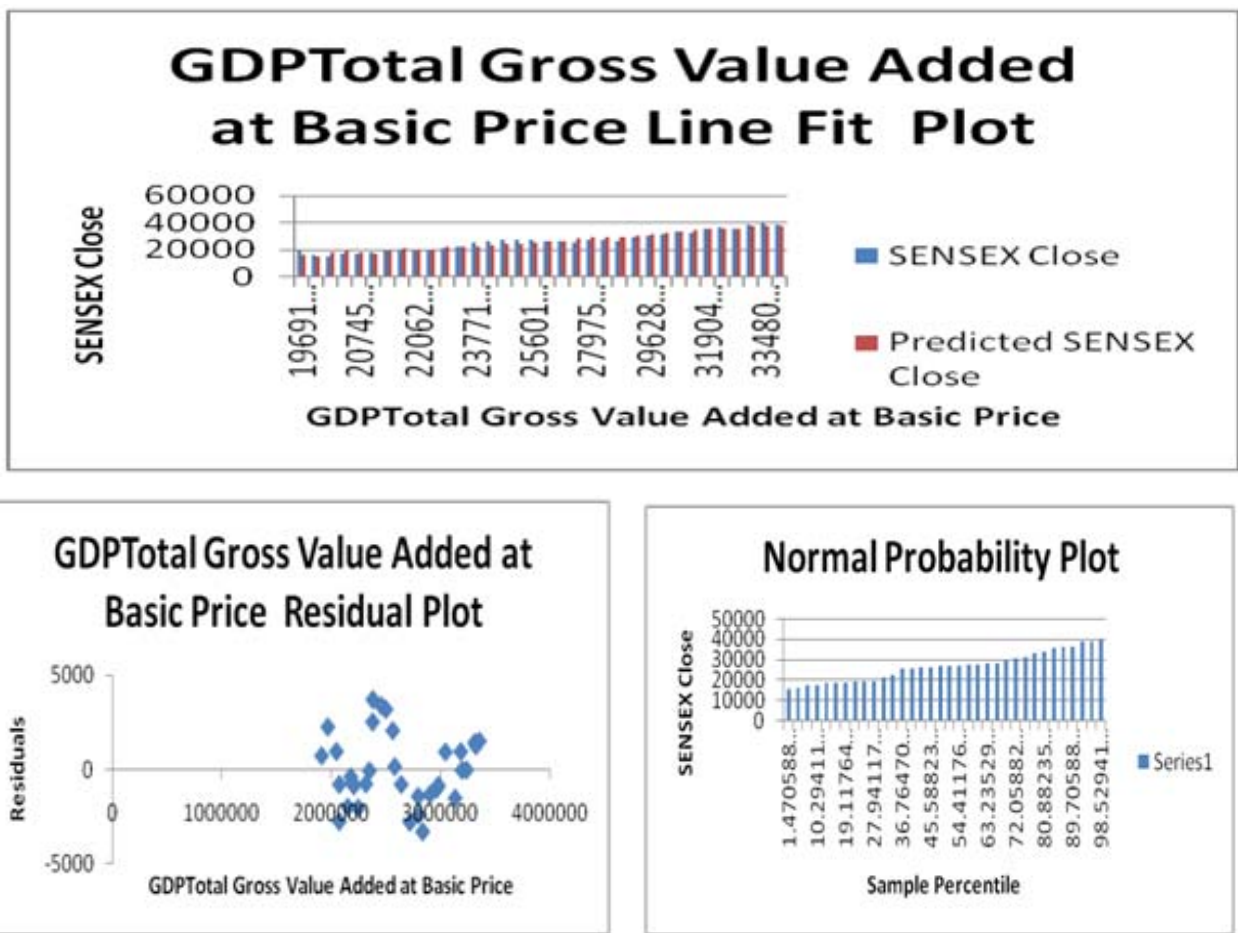


Figure 1.4: Regression Results

Table 1.5: Result of Impact of GDP on NIFTY 50

Variable	R <sup>2</sup>	Equation	P. value	Seg <sup>t</sup> 5%	H0(Accept/Reject)
NIFTY 50	0.94	Y=0.004727-4314.2x	5.35E-09	0.05	Rejected

b) Interpretation

Regression Analysis between GDP and NSE NIFTY 50 Index shows there is positive significant correlation between these two Variables. From the

above ANOVA table f cal- value (524.7529) is more than the f tabulated value (2.04E-21). So, we fail to accept the null hypothesis at 5% level of significance. We can say that, there is an impact of GDP on NSE NIFTY 50 Index.

As per the above table we observe that p-value (5.35E-09) in ANOVA table is less than 0.05 at the level of 5% significance. Therefore the H0 (null hypothesis is

rejected. So we conclude that there is a significant impact of GDP on NSE NIFTY 50 index.

Table 1.5: Result of Impact of GDP on NIFTY 50

Variable	R <sup>2</sup>	Equation	P. value	Segt 5%	H0(Accept/Reject)
NIFTY 50	0.94	Y=0.004727-4314.2x	5.35E-09	0.05	Rejected

c) Interpretation

Regression Analysis between GDP and NSE NIFTY 50 Index shows there is positive significant correlation between these two Variables. From the above ANOVA table f cal- value (524.7529) is more than the f tabulated value (2.04E-21). So, we fail to accept the null hypothesis at 5% level of significance. We can say that, there is an impact of GDP on NSE NIFTY 50 Index.

As per the above table we observe that p-value (5.35E-09) in ANOVA table is less than 0.05 at the level of 5% significance. Therefore the H0 (null hypothesis is) rejected. So we conclude that there is a significant impact of GDP on NSE NIFTY 50 index.

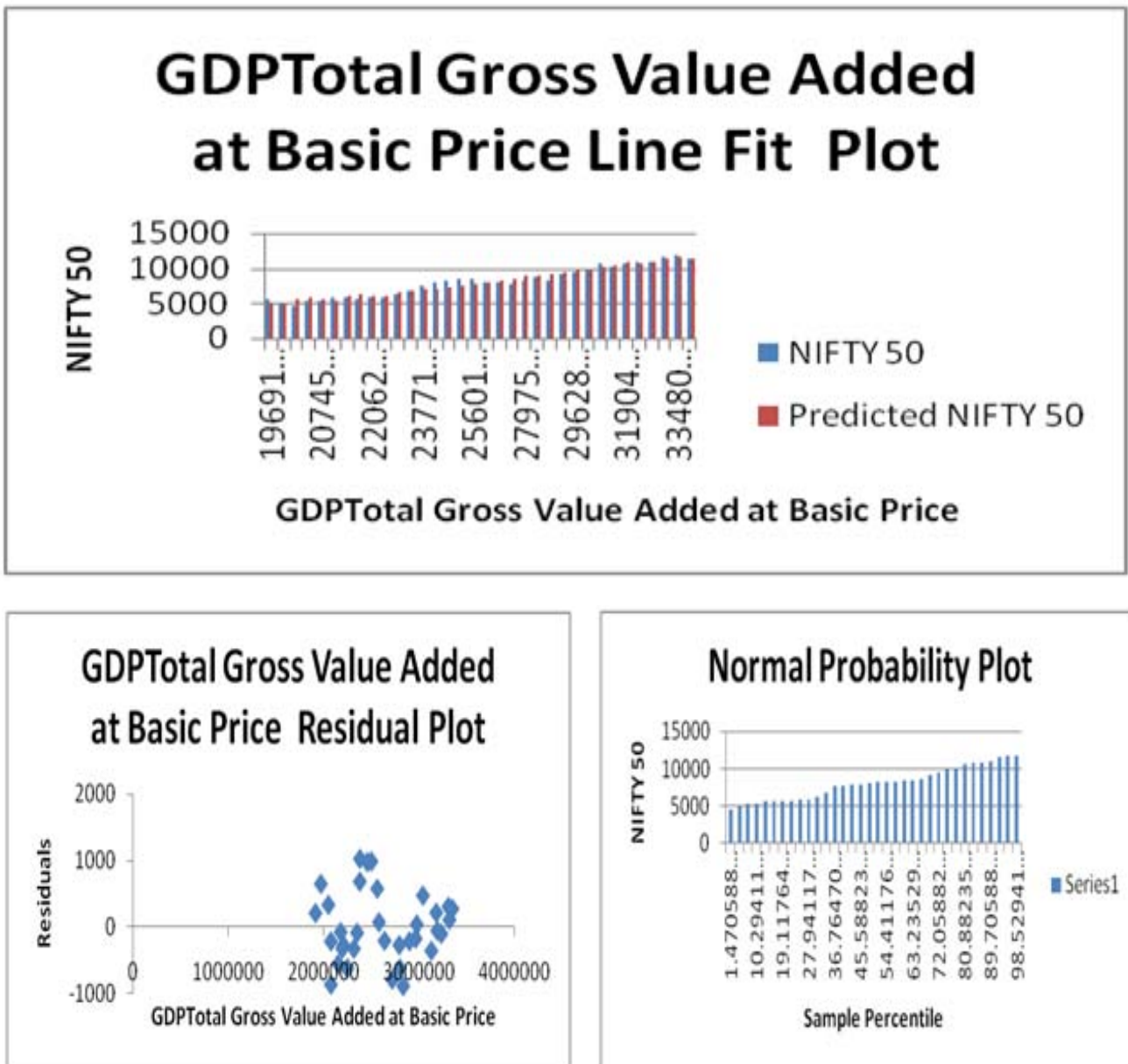


Figure 1.5: Regression Result

## IX. MAJOR FINDINGS

### a) Correlation between GDP and SENSEX

Calculated value of co-relation between GDP and SENSEX is 0.965768, so we can interpret that there is strong positive relationship between these two variables. Here we can say if GDP increase in that case our SENSEX is also increase because of that result of co-relation.

### b) Correlation between GDP and NIFTY 50

Calculated value of co-relation between GDP and NIFTY 50 is 0.970837, so we can interpret that there is strong positive relationship between these two variables. Here we can say if GDP increase in that case our NIFTY 50 is also increase because of that result of correlation.

### c) Regression analysis between GDP and SENSEX

Regression Analysis between GDP and BSE SENSEX Index shows there is positive significant correlation between these two Variables. From the ANOVA table f cal-value is more than the f tabulated value. So, we fail to accept the null hypothesis at 5% level of significance. We can say that, there is an impact of GDP on BSE SENSEX Index.

As per the regression analysis we observe that p-value in ANOVA table is less than 0.05 at the level of 5% significance. Therefore the H<sub>0</sub> (null hypothesis is) rejected. So we conclude that there is a significant impact of GDP on BSE SENSEX index.

### d) Regression analysis between GDP and NIFTY 50

Regression Analysis between GDP and NSE NIFTY 50 Index shows there is positive significant correlation between these two Variables. From the ANOVA table f cal-value is more than the f tabulated value. So, we fail to accept the null hypothesis at 5% level of significance. We can say that, there is an impact of GDP on NSE NIFTY 50 Index.

As per the regression analysis we observe that p-value in ANOVA table is less than 0.05 at the level of 5% significance. Therefore the H<sub>0</sub> (null hypothesis is) rejected. So we conclude that there is a significant impact of GDP on NSE NIFTY 50 index.

## X. CONCLUSION AND UTILITY

This study is conducted to "Analysis of Impact of Gross Domestic Products (GDP) on Stock Market Movement in India". The main objective of the study are to find out the relationship between gross domestic products (GDP) and stock market movement in India and To know the impact of gross domestic products (GDP) on the stock market movement in India. For the fulfillment of Research objective the data of GDP collected from the website of Reserve Bank of India (RBI) and data of SENSEX and NIFTY 50 collected from

the websites of Bombay Stock Exchange (BSE) and National Stock Exchange (NSE).

So, final conclusion of the study on the basis result of co-relation we can say that there is strong relationship between GDP and Stock Market Movement in India and on the basis of result of regression we can say that there is an impact of GDP on Stock Market Movement in India. These result shows that any change in the GDP is reflect in the stock market of India. On the basis finding of this study we interpret that GDP as a macroeconomic variable impact on stock market of India.

So it is a broader scope for the other researcher to carry forward study by using other macro as well as micro economic factors.

## XI. SIGNIFICANCE OF THE STUDY

### a) The significance of the study is as follows:

1. To improve in the knowledge of GDP and Indian stock market.
2. Through this study know about how to do analysis and interpretation.
3. The study helps to find out impact of GDP on stock market movement in India.
4. This study through know the relationship between GDP and stock market movement in India.

## XII. LIMITATION OF THE STUDY

1. The study is limited to nine years.
2. The studies is restricted to only data between 2011-12 to 2019-20 as compare to population, the sample size is small. Hence, on the basis of this study, generalization cannot be made.
3. The study is mainly based on secondary data taken from published data on websites. The reliability and finding are contingent upon the published data.
4. There are many other factors also affected to the stock market movement.

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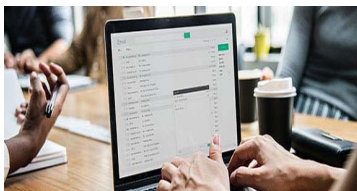
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# PREFERRED AUTHOR GUIDELINES

**We accept the manuscript submissions in any standard (generic) format.**

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from <https://globaljournals.org/Template.zip>

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## BEFORE AND DURING SUBMISSION

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct*, along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s) names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

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Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures



- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

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2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

### Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

### Acknowledgments

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## PREPARING YOUR MANUSCRIPT

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.



### ***Manuscript Style Instruction (Optional)***

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

### ***Structure and Format of Manuscript***

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

- a) A title which should be relevant to the theme of the paper.
- b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
- c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
- d) An introduction, giving fundamental background objectives.
- e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
- f) Results which should be presented concisely by well-designed tables and figures.
- g) Suitable statistical data should also be given.
- h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

- i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
- j) There should be brief acknowledgments.
- k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.



## FORMAT STRUCTURE

***It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.***

All manuscripts submitted to Global Journals should include:

### **Title**

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

### **Author details**

The full postal address of any related author(s) must be specified.

### **Abstract**

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

### **Keywords**

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

### **Numerical Methods**

Numerical methods used should be transparent and, where appropriate, supported by references.

### **Abbreviations**

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

### **Formulas and equations**

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

### **Tables, Figures, and Figure Legends**

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.



## Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

## PREPARATION OF ELETRONIC FIGURES FOR PUBLICATION

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

## TIPS FOR WRITING A GOOD QUALITY MANAGEMENT RESEARCH PAPER

Techniques for writing a good quality management and business research paper:

**1. Choosing the topic:** In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

**2. Think like evaluators:** If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

**3. Ask your guides:** If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

**4. Use of computer is recommended:** As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

**5. Use the internet for help:** An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



**6. Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

**7. Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

**8. Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

**9. Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

**10. Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

**11. Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

**12. Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

**13. Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

**14. Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

**15. Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**16. Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

**17. Never copy others' work:** Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

**18. Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**19. Refresh your mind after intervals:** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

**20. Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.



**21. Adding unnecessary information:** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

**22. Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

**23. Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

## INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

### **Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

### **Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

*The introduction:* This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

### **The discussion section:**

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

### **General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.

### *Mistakes to avoid:*

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.





- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

#### **Title page:**

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

**Abstract:** This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

*Reason for writing the article—theory, overall issue, purpose.*

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

#### **Approach:**

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

#### **Introduction:**

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

*The following approach can create a valuable beginning:*

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.



**Approach:**

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

**Procedures (methods and materials):**

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

**Materials:**

*Materials may be reported in part of a section or else they may be recognized along with your measures.*

**Methods:**

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

**Approach:**

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

**What to keep away from:**

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.



**Content:**

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

**What to stay away from:**

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

**Approach:**

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

**Figures and tables:**

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

**Discussion:**

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
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# INDEX

---

---

## **A**

Accompanied · 14, 20  
Argued · 27, 28  
Assumptions · 20

---

## **C**

Cluster · 18  
Conducted · 2, 32, 63, 91, 96

---

## **D**

Destabilizing · 20  
Deteriorating · 2, 4, 5, 37  
Dichotomy · 18

---

## **E**

Escalating · 15, 20

---

## **H**

Hazards · 48, 54

---

## **M**

Macroeconomic · 23, 28, 37  
Malnutrition · 23  
Misjudgment · 17  
Modernization · 5, 10, 16, 19, 20, 53  
Monsoons · 49

---

## **P**

Pandemic · 2, 6, 7, 14, 15, 16, 18, 20, 21  
Penetration · 37, 41  
Prerequisite · 29

---

## **R**

Reunification · 2, 8

---

## **S**

Sovereignty · 7  
Subsequent · 3, 39

---

## **U**

Ubiquitous · 12  
Ulterior · 8  
Uncertainty · 28, 49  
Uncontrollable · 45  
Undermine · 8, 11  
Unequal · 11  
Unprecedented · 15, 61  
Upgraded · 16

---

## **W**

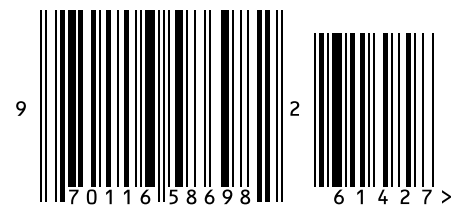
Weapons · 13  
Worsened · 4



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