



Assessing the Dynamics of Geo-economics in Nepal: Implications for National Economic Security

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Abstract: Geo-economics integrates economic policies with political and geographical strategies to achieve national objectives. This study evaluates Nepal's geo-economics dynamics compared to India, the USA, China, SAARC, East Asia and Pacific, and Europe and Central Asia regions, using key variables like external debt, foreign direct investment, personal remittances, economic growth, and per capita income. Based on secondary data since 1995, the analysis reveals significant differences in Nepal's economic performance, especially in gross fixed capital formation and economic growth, leading to increased dependency on trade and remittance inflows. The study highlights the growing external debt and its potential to limit economic freedom and undermine national sovereignty. Nepal's weaker economic growth and current account balance are similar to India's, but its per capita GDP growth lags behind neighbouring economies due to historical macroeconomic challenges. The research emphasises that economic strength directly influences national security, with international politics and geography shaping Nepal's geo-economics sovereignty.

Keywords: Geo-economics, neorealism, blockade, national economic security, rational actor

JEL Classification: O5; P51; P52;

1. INTRODUCTION

Geo-economics refers to the use of economic tools by governments and agencies to achieve not just economic, but also political, security, and strategic goals.

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It emphasises policy execution over mere policy analysis. As Guterres (2023) notes, rising geopolitical tensions are deepening global divisions, with smaller nations often caught in the crossfire. Nepal, located between India and China, has long struggled to preserve its independence and sovereignty in such a complex global context. Geo-economics integrates economics, geography, and geopolitics, reflecting the interplay of state power in international relations. Historically, colonial powers and shifts from unipolar to multipolar dynamics have significantly shaped geo-economics power balances. Events like the Great Depression and the 2008 global financial crisis have further altered global geo-economics. These economic shocks have triggered shifts in global confidence and brought forth new visions for world order (Shahsad, 2022).

The relationship between economic power and national power is central to geo-economics. Nations strive to maintain competitiveness in a global landscape where trade, security, and influence are interconnected. As trade plays a critical role in national security and geopolitical stability, the saying "when goods don't cross borders, troops likely will" encapsulates the relationship between trade and peace. Economic and military strategies often reinforce one another, highlighting the dual nature of geo-economic statecraft in today's complex global relations, especially in the era of artificial intelligence (Gyula, 2017). Sovereignty, a nation's autonomy, is deeply tied to geo-economics, as a country's ability to pursue its economic policies determines its national security. Economic security, in turn, impacts a country's defence capabilities, making geo-economic strength vital for overall national stability. Nepal, with its strategic location between India and China, has long-held geopolitical and geo-economic significance. Both of these rising global powers have vested interests in Nepal, leading to deeper economic collaboration, especially in trade and regional connectivity (Atique, 1983).

Nepal's history reflects its delicate balancing act between its powerful neighbours. Historically, Nepal has maintained trade relations with both India and China, serving as a key trade route between South and Southeast Asia. In recent years, Nepal has also become a focal point for global powers like the U.S., as evidenced by the competing influence of the Millennium Challenge Corporation (MCC) and China's Belt and Road Initiative (BRI). This competition underscores the ongoing geo-economic and geopolitical significance of Nepal for major power rivals. Prithvi Narayan Shah, the founder

of modern Nepal, famously described Nepal as a "yam between two boulders," a metaphor that still holds relevance today. Nepal continues to navigate the competing interests of China and India while aspiring to serve as a bridge between the two nations. Both India and China aim to establish a positive image in Nepal to further their own national interests.

In understanding Nepal's geopolitical and geo-economic situation, theories of neorealism, particularly structural realism, offer valuable insights. These theories explain how states interact based on the structure of the international system, with some states seeking to maximise power while others focus on maintaining security. This context is critical for analysing the dynamics of geo-economics in Nepal from 1995 to 2023, emphasising the role of economic security in shaping national security. There are no comprehensive studies on Nepal's geo-economics, particularly the dynamic relationships between economy, politics, and security. Issues like Nepal's economic dependence on its southern neighbour and the challenges faced during India's demonetisation and blockades highlight the need for research on this topic. Previous studies have focused separately on national and economic security, lacking an integrated approach through the lens of international relations and diplomacy. This study fills that gap by linking geo-economics with national and economic security using structural realism. It aims to evaluate geo-economic trends in Nepal and other countries through a comparative analysis of key variables.

The rest of the paper is organised as follows. Section 2, presents the Review of the literature. Section 3 discusses the Methodology, and Section 4 presents the Trends of Geo-economics in Nepal. Section 5 presents the Implications and Discussions of the Findings. The final section briefly concludes the paper.

2. REVIEW OF LITERATURE

Foreign investment, which is crucial for the growth of new sectors, is lacking since no business owner wants to put their money into risky ventures. It is further deterred by Asians' apprehension about regaining their hard-won liberties by joining the heavily promoted economic spheres of influence (Tayyeb, 1952).

For decades, Nepal deftly maintained a delicate diplomatic position between the Indian and Chinese reigning dynasties, offering unique relations to China as a guarantee of Nepal's independence from India (Kissinger, 2014; cited in Silwal, 2021). Small countries may be particularly vulnerable to external

threats and acts of interference in their internal affair (General Assembly Resolution A/RES/46/43). Nepal's political and national security landscape is complex and vulnerable due to several factors, including its geopolitical location, relative size and power in comparison to its large neighbours, its open and unregulated border with India, the unequal provisions of treaties and agreements, the externalisation of domestic politics, and the polarisation of domestic stakeholders even on matters of significant national interest. Nepal is ill-equipped to handle the complex neighbourhood and global security environment because of the competing interests of China, India, and the Western powers; the geopolitical rivalry between China and the US; the absence of a developed strategic culture in the face of domestic political instability; and weak institutions for intelligence and foreign affairs. One of Nepal's biggest challenges is promoting and defending national interests in the face of an aggressive external environment and rapidly shifting domestic politics. India and China are both developing nations. Their interests, both national and international, directly affect Nepal. Nepal is influenced by Sino-US, Sino-Indian, and Indo-US bilateral relations as well as their divergent interests in important global and regional issues (Silwal, 2021).

The nexus between domestic and external variables caused a huge effect on political stability and strategic decision-making. Even in determining foreign policy, internal and external variables played a role (Muni quoted in Nayak, 2014; cited in Silwal, 2021). Despite India's two harsh economic blockades on Nepal in the last three decades, China wished to see Nepal maintain a cordial relationship with India. China and India have bigger stakes and would not compromise their interests for the sake of a small neighbour like Nepal. Chinese Prime Minister Wen Jiabao, during his visit to Nepal on January 14, 2012, advised his Nepali counterpart [Prime Minister Baburam Bhattarai] to have a cordial relationship with India (Silwal, 2021). India need not match a Chinese dollar for Indian rupees in Nepal. Nepal has also been encouraged to take advantage of India's economic growth and integrate its economy with that of India (Muni, 2016). India's policy that contributed to its diplomatic breakdowns in Nepal was a poor use of India's soft power, particularly economic support for strategic objectives (Muni, 2016). When Rajiv Gandhi withdrew special trading arrangements between India and Nepal in 1989 after the expiry of the bilateral trade treaty, those who made strong representation to him were

India's then army chief, Shankarcharyas, business lobbies, and Congress leaders belonging to the former princely order (Muni, 2016).

India's economic interests in Nepal have also evolved over the same time as its security interests. To keep foreign influences at bay, India incorporated in the 1950 treaty to secure a preference over all foreign assistance for the 'development of natural resources' and 'industrial projects' in Nepal (Muni 1973; cited in Muni, 2016). Nehru did not trust Nepal to deal with China directly. On Nepal-China relations, he suggested that 'should the question of a new treaty be raised by China, Nepal could not refuse to consider it. They should say that they would gladly discuss this matter but their foreign policy is coordinated with that of India and therefore, in any discussion India will also have to be represented. Nepal should not agree to discussions taking place in Peking. They should take place either in Kathmandu or Delhi and it should be made clear that India will be represented there also' (Bhasin 2004; cited in Muni, 2016).

India has a wide range of interests, from the pragmatic concerns of keeping its citizens safe in Nepal to the long-term goals of defending and advancing its economic and security interests. These interests have changed and been shaped by the socioeconomic and political environments that are present in both India and Nepal at any given moment, in addition to the boundaries of regional and global dynamics in South Asia. The stark differences between India and Nepal's geographic expanses, demographic compositions, economic diversities, and emphasis on overall national power (including military prowess) have greatly influenced how India has pursued these goals and how Nepal has responded to them (Muni, 2016).

Nehru wrote on July 6, 1954, to the Indian Ambassador in Kathmandu, B.K. Gokhale: "People in Nepal forget that India is on three sides of the country and the fourth is Tibet, these people in Nepal, who think and talk mischief are cowards. They should be made to realise, politely but firmly, that there are some things we will not tolerate and we will take necessary actions if people misbehave against India... I am opposed to any withdrawal from our check-posts, our military mission, our Trade Agent our wireless instruments or in any other way. They will have to put up with us even if they do not like us. If we decide to leave any time in future, it will be with dignity and not under threat" (Bhasin 2004; cited in Muni, 2016). Nehru also wrote on September

2, 1956, to the Indian Ambassador in Kathmandu, Bhagwan Sahay: "I wish to emphasise that, as I once pointed out to you previously, we must reconsider our attitude towards Nepal. They have not only bypassed us and practically ignored us, but have done so with discourtesy. This is obviously a deliberate attitude to emphasise their own complete independence from us" (Bhasin 2004; cited in Muni, 2016).

The United Nations and Nepal are old friends. Of all the countries in the world, Nepal is the second largest contributor of troops to the United Nations missions. Developing countries must have far greater representation in international institutions, and there needs to be measures to reform the global financial architecture to better represent developing countries and respond to their needs (Guterres, 2023). Nepal's central location on the southern side of the imposing mountain system that separates the Tibetan plateau from the plains of India has always strongly conditioned the country's history and foreign policy (Rose, 2005; cited in Adhikari, et al., 2013). Geo-economical element also plays a vital role in the relations between Nepal and China. Nepal could play the role of a golden bridge between the two emerging economic giants (India and China). In the future, if South Asia is linked to China through Nepal, the entire population inhabiting the region will be immensely benefitted. In this scenario, the Chinese and Indian population will be highly obliged to Nepal (Adhikari, et al., 2013). Nepal faces challenges in managing diplomacy on three levels-global, regional and bilateral. Despite purported differences over the strategic aspects of relationships, whether between the US and China or between India and China, economic interests will prevail over crude geopolitics (Wagle, 2023).

Gajurel (2024) explained that in comparison to India, which had final consumption expenditures of 72% of GDP, Nepal had expenditures of 85% of GDP. China's percentage was 56%, which was less. Even the so-called consumption-led growth models, the US and the UK, scored 81% and 83 %, respectively. Merely 8% of GDP went towards exports, and 8% went towards government spending, both of which are at the lower end of the global scale. Nepal's gross fixed capital formation, or the investment component of aggregate demand, was one of the highest in the world for the year at 34% of GDP. But residential building is also included in this statistic, and in many circumstances, that may just as well be regarded as a private consumption expense. Any idea

that productive investment has been a crucial component of Nepal's economic model is further undermined by the fact that foreign direct investment accounted for less than 1% of GDP. The consumption-led growth paradigm used in Nepal is mainly dependent on imports. In 2019, imports into the nation represented 41% of GDP, which was more than the global average. The impact of Nepal's import-dependent economy on the balance of payments is the issue. A significant disparity between imports and exports typically portends economic difficulty for a country, as the payments for imports quickly deplete the foreign currency required for subsequent imports, which is essential to Nepal's consumption-led growth model. Nepal had among the lowest net exports in the world in 2019 with exports less imports equaling -34% of GDP. The year 2019 saw 24% of Nepal's GDP come from incoming personal remittances, which rank fourth in the world. This is in contrast to the rest of South Asia's average of barely 5% and sophisticated economies' less than 1%.

The nations with large migration and remittance rates, such as Nepal, have long been plagued by growth that stifles the industrial sector, particularly those that are exposed to the outside world, and slows down the pace of economic progress. However, Nepal must discourage itself from remittances and move toward a healthier and more sustainable growth model since the remittance-reliant growth model is ultimately counterproductive, given how detrimental it is to the country's long-term economic prospects (Gajurel, 2024). To protect its geopolitical interests, India is changing the nature of regional politics. Since 2015, when it imposed a blockade and hindered the transportation of petroleum products to Nepal, India has been making apologies to that country. It sought to compel the Nepalese Parliament to include demands from the Madheshi movement in the Constitution. In response, Nepal introduced its Constitution without addressing the concerns raised by the Madheshi. To reduce its reliance on India, Nepal has inked trade and transit agreements with China. India discreetly lifted its restrictions in retaliation, and it hasn't put any pressure on the Nepalese government since. India's meddling was criticised by Madheshi leaders and the ruling class. The blockade came at a heavy strategic cost to India (Jnwali, 2024).

3. RESEARCH METHODOLOGY

This study aimed to explore the dynamics of geo-economics in Nepal and its implications for national economic security, using the rational actor model

within the framework of structural realism. The research covered the period from 1995 to 2023, which encompassed significant political transformations, including the shift from a constitutional multiparty system to a federal democratic republic. This time frame allowed the study to analyse how political-economic developments had shaped Nepal's geo-economics and foreign policy evolution. The unit of analysis included Nepal's macroeconomic indicators and geo-economic variables, focusing on their implications for national security. The study also incorporated a comparative analysis of geo-economics indicators from developing and developed economies, with data drawn primarily from published statistics by the World Bank.

Secondary data sources were institutions such as the Nepal Rastra Bank, National Statistics Office, Ministry of Finance, Ministry of Foreign Affairs, IMF, and WB. Qualitative information was gathered from expert opinions, interviews, writings, and other published materials in both print and digital formats. An independent sample t-test was employed to compare geo-economic variables between Nepal and selected economies. This method evaluated whether the differences between the two groups were statistically significant. The study used statistical software, including Stata and EvIEWS to conduct quantitative analysis and generate insights into the economic relationships.

3.1. Sample size for the qualitative information

The literature on structural realism, macroeconomic strength, foreign policy and national security have been mentioned which are mainly of qualitative analysis. Qualitative analysis was made to assess the dynamics of geo-economics in Nepal based on the data for 1995 to 2023 by assessing the efficacy of economic security that has an influence on national security in comparison to other economies.

3.2. Method of Analysis

This study used an independent sample t-test to compare the selected geoeconomic variables between Nepal and other selected economies. To compare the averages of two groups and ascertain if the differences between them are more likely to be the result of chance, statisticians employ t-tests. The most popular use of the t-test is to determine whether the means of two populations differ from one another. The independent sample t-test is a

simple yet powerful tool to assess the differences in mean between two groups. Moreover, the sample period ranged from 1995 to 2023 which justified the use of t-test. This study used the Stata and Eviews program to make a quantitative analysis. These are a general-purpose statistical software package used for data operation, visualisation, statistical analysis, and automated reporting.

4. TRENDS OF GEO-ECONOMICS IN NEPAL

Geo-economics of Nepal has been measured by different macroeconomic indicators reflecting geopolitical, geo-economical, foreign policy and international relations of Nepal. The following trends or state of affairs of geo-economics have been briefly presented and analysed. The details of the status have been presented in the annexure.

Gross Fixed Capital Formation

Gross fixed capital formation includes investments in buildings, machinery, and other equipment. GFCF to GDP (in %) in various countries and regions since 1995 showed that it had increased over time and remained stagnant. Investments in the capital are the basis for growth, prosperity and resilience of the national economy that shapes the strength of geo-economics. China appears to have had the highest percentage of gross fixed capital formation to GDP throughout the entire period. Nepal appears to have had the lowest percentage among the developing countries (NRB, 2023). Most countries and regions show an increasing trend in GFCF to GDP over time. Some countries have higher percentages than others, the reasons could be many, such as a country's infrastructure needs, economic policies, or political stability. GFCF refers to the investment in fixed assets like infrastructure, machinery, and equipment, which is crucial for long-term economic growth. Nepal's GFCF has remained around 25% of GDP for several years, reflecting steady but insufficient investment for its developmental needs. Higher GFCF would indicate a stronger commitment to building productive capacity and improving infrastructure, which would, in turn, enhance Nepal's geo-economic resilience. An increase in fixed capital formation can help stimulate further growth in areas like FDI, remittances, and overall economic stability.

Table 4.1 shows the correlation between GFCF and GDP in various economies. The correlation between Nepal and India is -0.16 showing that the

capital formation in Nepal and India is poorly in opposite movements over this period. The positive correlation of the GFCF to GDP ratio of Nepal with China is 0.57 and China with India is 0.57, which shows that GFCF follows the same trend in the regions. The negative correlation of the USA with Nepal (-0.36), of the USA with India (-0.30), of the USA with China (-0.67), of the USA with South Asia (-0.31) shows a negative correlation between GFCF to GDP ratio in relation to the USA. This indicates that the region follows the opposite trend in gross fixed capital formation to GDP compared to the USA. A negative correlation doesn't necessarily imply causation. There could be other factors affecting GDP in the USA. The weak but negative correlation of Nepal (-0.16 with India), Nepal (-0.07 with South Asia) and South Asia (-0.31 with USA), while India has weak negative correlations with the USA (-0.30) and weak positive with ECA (0.53), which suggests that there is little to no linear relationship between the variables. There might be other factors affecting the relationship between GFCF to GDP ratio in these countries or regions.

Nepal's GFCF to GDP ratio is 5.9% lower than that of India, 15.2% lower than that of China and 12.4% lower than that of East Asian economies. Weaker GFCF also elucidates the underlying reasons for the weaker economic

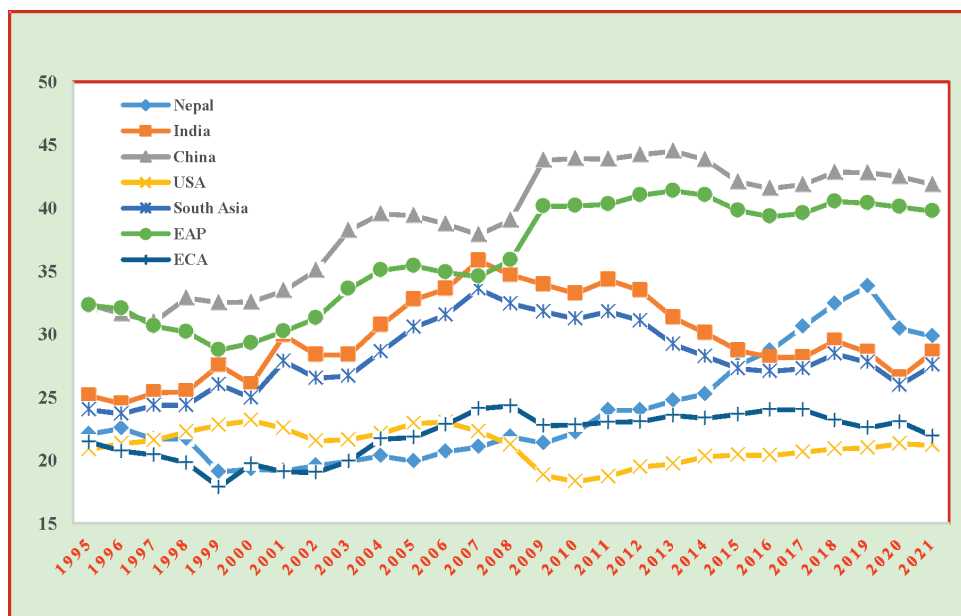


Figure 4.1: Gross Fixed Capital Formation to GDP (in percentage)

Source: Estimation based on data available at <https://data.worldbank.org>

growth experience of Nepal. The imprudent public policy is responsible for this weakness. GFCF is the foundation for economic power and security that measures the resilience of physical infrastructure. It is the capital stock in the economy that contributes to revenue flows on which the strength of geo-economics depends upon. Nepal can have a catch-up benefit in capital formation to strengthen overall capability. Annexure 7 reflects the details of the gross fixed capital formation in the comparative table.

Figure 4.1 and Table 4.2 show the graphical and tabular comparison of the GFCF to GDP ratio of Nepal with selected economies such as India, the USA, China, Europe, and East Asia. India, China, and East Asia are burgeoning economies. Hence, they have a higher GFCF to GDP ratio compared to Nepal signifying that these economies have a strong economic foundation that bolsters economic growth and development.

Remittances

Remittances form a critical component of Nepal's economy, contributing around NPR 120 billion per month. This financial inflow supports millions of households and bolsters national economic stability. However, the country's reliance on remittances comes at the cost of mass emigration, with over 2,000 Nepali youths leaving the country each day for work abroad. While remittances contribute significantly to GDP, they also reflect Nepal's economic vulnerabilities, particularly its dependence on foreign labour markets. Disruptions in global labour demand—due to conflicts, pandemics, or economic downturns—can directly affect Nepal's financial inflows, creating challenges for its economic and national security.

Table 4.3 shows the relationship between the remittance to GDP ratio and GFCF to GDP ratio of various countries. The table reflects the correlation coefficients between the remittance to GDP ratio of Nepal and India with the GFCF to GDP ratio given for each country and region compared to the others. As Table 4.3 shows there seems to be a weak positive correlation between the remittance to GDP ratio of Nepal and the GFCF to GDP ratio of India. The correlation of 0.50 suggests that the increase in the GFCF of India has a positive correlation with remittances to Nepal. Similarly, China has also a stronger correlation of 0.94 with Nepal's remittance to GDP ratio. It reveals that though China is not a destination country for Nepalese workers but China has a trade

relationship with Gulf Countries and Malaysia which are destination countries for Nepalese workers. The higher capital formation in China, EAP and ECA could increase demand for energy and investment goods from those countries that are indirectly related to Nepalese remittance to GDP ratio. This suggests that remittance inflows from these countries might be associated with increased investments in China and other economies of the region. However, the GFCF of the USA has a negative correlation with Nepal's remittance to GDP ratio.

Table 4.4 shows the comparison of remittances to GDP ratio of Nepal with the selected economies. The remittance inflows to GDP ratio of Nepal is significantly higher compared to other economies. The remittances to GDP ratio of Nepal is higher by 12.8 %, 15.6 % and 15.1 % than that of India, China and East Asian economies respectively. This indicates the economic dependency of Nepal on those countries from where remittance flows to Nepal. Higher dependence on remittances would cause a habitual cycle of complacency on domestic liquidity in the financial system, revenue to the government from tax on imports and abundance of foreign exchange reserves for external sector stability.

The remittance-originating countries absorb the human capital of Nepal at the cost of sustainable development of Nepal which may leave Nepal further backwards in the trajectory of socio-economic development. This eventually

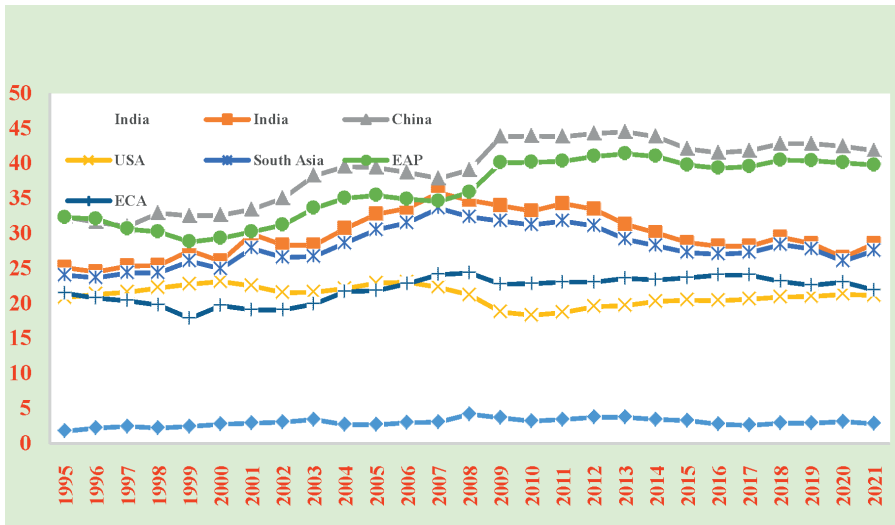


Figure 4.2: Remittance to GDP ratio (in percentage)

Source: Estimation based on data available at <https://data.worldbank.org>

weakens the geoeconomic strength of Nepal. The weaker capital formation, poor manufacturing and industrial activities, and less effective public policy have caused emigration of youths and excessive dependence on remittance-like external sources of macroeconomic financing.

Figure 4.2 shows the remittance to GDP ratio of various countries. The Figure reflects the movement and dependence of countries on remittances. Remittance is the transfer of money by workers working abroad back to their home country. The remittance to GDP ratio in Nepal appears to be increasing till 2015 and declining over time. The remittance to GDP ratio was 11.2% in 2002 reached 27.6 in 2015 and slowly declined after that period. There could be several reasons why the remittance to GDP ratio is declining in Nepal. It was also observed that the weak global economy also affects Nepal. It is seen that the ratio has declined consecutively for three years after the Global Financial Crisis. Also, Nepal's nominal GDP has grown faster than remittances which has also had a partial effect on the decline in the ratio. Other larger economies- India and China receive few remittances in comparison to their GDP, other groups of countries also record less than 5% of remittance to GDP. Thus, it is clear that Nepal's economy is highly dependent on remittance and is prone to geo-economic risks.

External Debt

External debt is not necessarily bad for an economy, if a country is using borrowed money to invest in productive assets, it can help the economy grow in the long run. However, if a country's external debt becomes too high, it can become difficult to repay, which can lead to crises and geo-economic vulnerabilities. External debt has seen significant growth since the 2015 Gorkha earthquake, reflecting its dependence on foreign financial aid for rebuilding and development. As of mid-March 2024, Nepal's nominal external debt reached NPR 1,170 billion. While external debt can provide a necessary financial boost, it also represents a vulnerability if not managed properly. Nepal's external debt-to-GDP ratio reflects its reliance on external financing and can influence its geopolitical positioning, particularly in its negotiations with lending countries or international institutions.

Table 4.5 shows the correlation between the external debt to GDP ratio of South Asian countries and other regions. The table shows a weak positive

correlation between external debts to GDP ratio of the regions. Table 4.5 shows the positive correlation between South Asia and Nepal which is 0.62, as external debt in South Asia and Nepal is growing in the same trend. This suggests that on average, in South Asian countries, the external debt is increasing with the pace of GDP. Nepal shows weak positive correlations with most countries (India: 0.24, China: -0.04, ECA: 0.12). India also has a positive correlation with China (0.54) and ECA (0.07), as they are both the group of growing economies during the period. External debt-financed growth is relatively limited in South Asian countries. The countries may use external debt to finance investments that increase productivity and economic growth. If the investments are successful, the country will be able to generate more revenue to repay the debt. Wealthier countries may have a higher capacity to borrow and repay. They may also have more attractive investment opportunities, leading to higher external debt levels.

Table 4.6 presents the external debt to GDP ratio of Nepal compared to selected economies. Nepal's external debt to GDP ratio is higher by 13.7% than that of India and 20.6% than that of China. The results are statistically significant at a 5% level of significance. This clearly shows the dependence of Nepal on external donors among these comparisons. The growing external debt is detrimental to economic freedom and may eventually succumb a country to a never-ending cycle of debt trap and riskier geo-economic outlook.

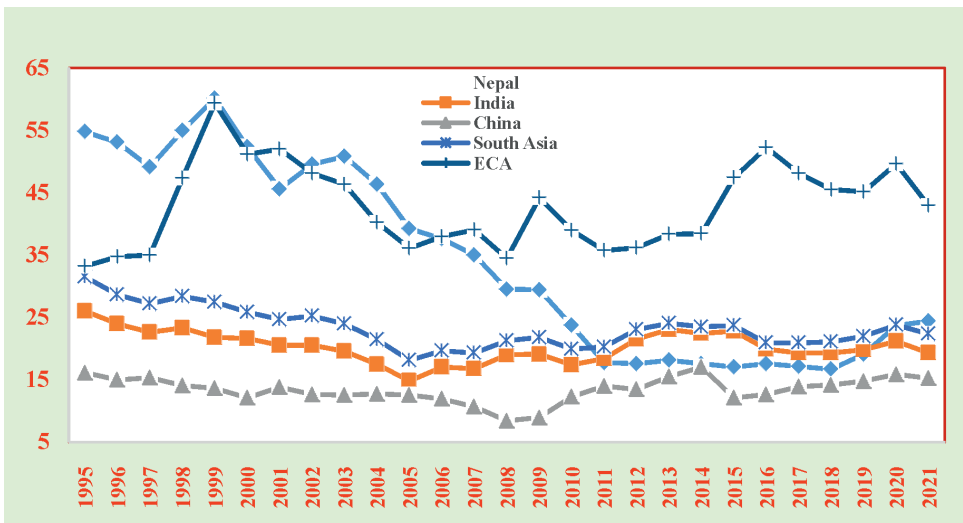


Figure 4.3: External Debt to GDP (in percentage)

Source: Estimation based on data available at <https://data.worldbank.org>

There could be other factors influencing both external debt and GDP in these countries. The reasons for external debt can vary from country to country. Higher external debt can be riskier for developing countries if a country has difficulty repaying its debts. The nature and structure of external borrowing also have implications on the geo-economics of the country.

Figure 4.3 shows the external debt to GDP ratio of South Asia, ECA, China, India, and Nepal from 1995 to 2021. The average external debt to GDP ratio of most countries appears to have increased over the period. China's external debt to GDP ratio appears to have started lower than most other countries and increased more rapidly. India's external debt to GDP ratio appears to have increased steadily over time but at a slower rate than China. Nepal's external debt to GDP ratio appears to have fluctuated more than other countries. However, over the period it has decreased. Nepal's recent external debt to GDP ratio is around the level of South Asian countries.

Foreign Direct Investment

There are several reasons for any country having a higher FDI to GDP ratio including political stability, economic growth, and business climate, among others. There are many reasons that China's FDI to GDP ratio is higher than that of India and Nepal. China undertook significant economic reforms since the 1950s, which made it more attractive to foreign investors. China has invested heavily in infrastructure development in recent decades, which has made it easier for foreign businesses to operate in the country. The Chinese government has implemented several policies to attract foreign investment, such as tax breaks and special economic zones. FDI is crucial for economic growth, particularly for developing countries like Nepal, as it brings capital, technology, and expertise. However, Nepal's FDI inflows have historically been low, averaging less than 0.5% of GDP except for a few exceptional years. Between 2018 and 2022, the country attracted \$639 million in FDI. Despite its strategic location between two of the world's largest consumer markets—India and China—Nepal's political instability, regulatory barriers, and inadequate infrastructure deter higher FDI levels. This limits Nepal's ability to leverage its location for economic gains, thus constraining its economic and geopolitical influence (Wagle, 2024; Acharya, 2012).

Table 4.7 shows a mostly positive correlation between FDI to GDP ratio and GDP ratio, with some exceptions. There's a strong positive correlation within EAP (0.98), suggesting that in EAP countries, higher FDI to GDP ratios tend to be associated with higher GDP ratios. China also shows a positive correlation with most countries (India: 0.57, South Asia: 0.67, ECA: 0.76). This suggests that for China, higher FDI tends to be associated with higher GDP. There's a weak positive correlation within South Asia (0.43). The USA shows a weak negative correlation with most countries (India: -0.30, China: -0.67). This could be due to various factors specific to the USA, but it doesn't necessarily mean FDI is bad for GDP growth in the USA. Nepal has weak negative correlations with most countries (India: -0.16).

A positive correlation between FDI and GDP growth can incentivise countries to compete for FDI. If FDI is seen as a driver of economic growth, countries might offer incentives to attract foreign investors. These incentives could include tax breaks, subsidies, or streamlined regulations. FDI can create jobs in the recipient country. This can be attractive to governments looking to reduce unemployment. FDI can also lead to the transfer of new technologies and skills to the recipient country. This can help to improve the country's productivity and competitiveness.

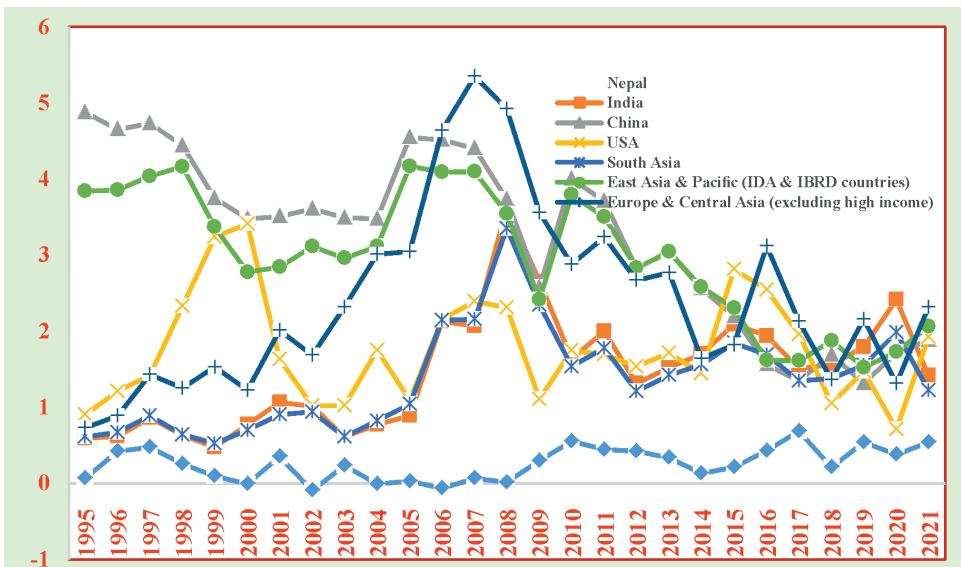


Figure 4.4: FDI to GDP ratio (in percentage)

Source: Estimation based on data available at <https://data.worldbank.org>

Table 4.8 shows the foreign direct investment to GDP ratio. Nepal's FDI to GDP ratio is 3%, 1.2% and 2.7% lower compared to China, India and East Asia, respectively. Nepal is not a preferred destination for foreign investors as foreign direct investment flows to Nepal are significantly lower compared to India, China, East Asian economies, USA and European economies. All selected economies have higher FDI compared to Nepal. This suggests that Nepal does not have a favourable environment to attract foreign investors. The lack of a trusting investment environment, the size of the economy, and the level of infrastructure have discouraged foreign investment in Nepal. Foreign investment brings capital, technology, knowledge, skill and other potential for innovation that strengthen geo-economics.

Figure 4.4 shows the FDI to GDP ratio for several South Asian countries including China, India, and Nepal from 1995 to 2021. China appears to have had the highest and most consistently increasing FDI to GDP ratio throughout the entire period. By 2020, it reached over 6%. India's FDI to GDP ratio has also increased over time, but at a slower and less steady pace than China's. By 2020, it reached around 3%. Nepal's FDI to GDP ratio appears to be the lowest and most volatile of the three countries. It fluctuated between 0% and 2% throughout the period.

Current Account Balance

There are several reasons that the countries might have a high, low, or negative current account balance to GDP. A country that exports more than it imports can have a current account surplus. This can be due to government policies that encourage exports or a competitive currency that makes exports cheaper. Similarly, fast-growing economies tend to have a larger current account deficit, as people's incomes rise, they tend to demand more imported goods. China's current account balance to GDP ratio is higher than that of India and Nepal: China had focused on promoting exports in recent decades which led to a large trade surplus (NRB, 2023). During this period, China has attracted a lot of foreign investment in recent years. This has also contributed to its current account surplus. Nepal's weak position in CAB is due to a small, landlocked country with a limited export base and a lacuna of public policy. This makes it difficult to achieve a trade surplus. Nepal relies on imports for many essential goods, such as fuel, food, machinery, medicine and other finished products.

It has contributed to a trade deficit during the period and resulted in a huge compromise on geo-economic competencies. A country's current account balance (CAB) reflects its trade balance—exports minus imports—as well as its income from abroad and transfers like remittances. Nepal's CAB reached a risky deficit of -12.63% of GDP in the fiscal year 2021/22, which posed a significant threat to the economy. However, by mid-March 2024, the CAB had shifted into a surplus of NPR 167 billion (NRB, 2023). This surplus offers some temporary relief, but long-term deficits reveal that Nepal consumes more than it produces, which increases its reliance on external sources for financing its domestic needs.

Table 4.9 presents the current account balance to GDP ratio. South Asian economies have more or less similar current account balance to GDP ratio suggested by an insignificant difference of 0.3% between Nepal and India. China is a dominant exporter (contributing 25% to global exports) with a surplus current account balance. As expected, Nepal's current account balance to GDP is 4.0% less than that of China. The negative current account balance to GDP is not considered severe in the case of developing economies as these economies import huge quantities of infrastructure and construction materials but it should be able to reestablish balance in a reasonable time period.

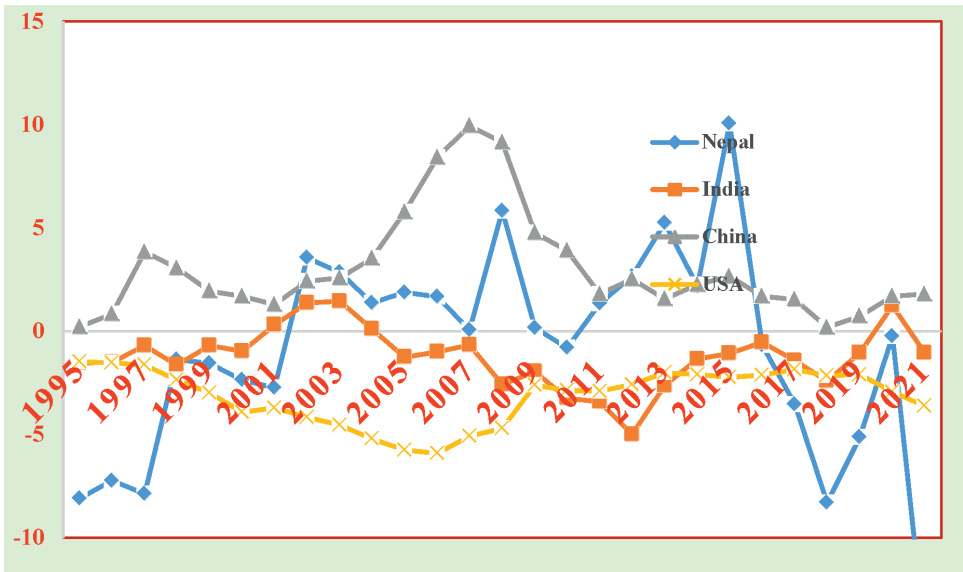


Figure 4.5: Current account balance to GDP ratio (in percentage)

Source: Estimation based on data available at <https://data.worldbank.org>

China has a large trade surplus because it exports more goods and services than it imports. This has also offered China geo-economic leverage over other global powers and the global south. India's current account balance to GDP ratio fluctuates more than China's. It has been negative for some periods, indicating a trade deficit (importing more than exporting). However, it has also had positive periods.

Figure 4.5 shows the trends in the current account balance to GDP ratio in Nepal, India, the USA and China from 1995 to 2021. The current account balance refers to a country's net trade in goods and services plus net income received from abroad. China has a consistently high current account balance to GDP ratio throughout most of the period, reaching a peak of over 10% in 2007. Nepal consistently has the lowest current account deficit to GDP ratio throughout the period. It has mostly remained negative, and the deficit appears to have widened over time.

Annual GDP Growth

GDP growth is a measure of progress in the economy quantitatively. It sums up the growth in consumption, investment, government spending and net exports. Real GDP measures the value of all goods and services produced in an economy, adjusted for inflation. For Nepal, real GDP growth has consistently lagged behind expectations, averaging below 5% over several decades. In recent quarters, growth has been forecast to remain at 4% (NRB, 2023). Low economic growth limits Nepal's ability to fund development initiatives and hinders its ability to meet the population's needs, which weakens its geopolitical standing. A robust economy is essential for strong national security, but Nepal's sluggish growth restricts its geo-economic and geopolitical capabilities.

Table 4.10 presents the comparison of the annual economic growth rate of Nepal to selected economies. India, China and East Asian economies are growing economies. As expected, Nepal's economic growth is weaker compared to those growing economies. On average, Nepal's economic growth is about 4.5% lower compared to that of China, 3.5% more than that of East Asia and about 2% more than that of India. This proves Nepal's poor performance in economic growth compared to other developing economies.

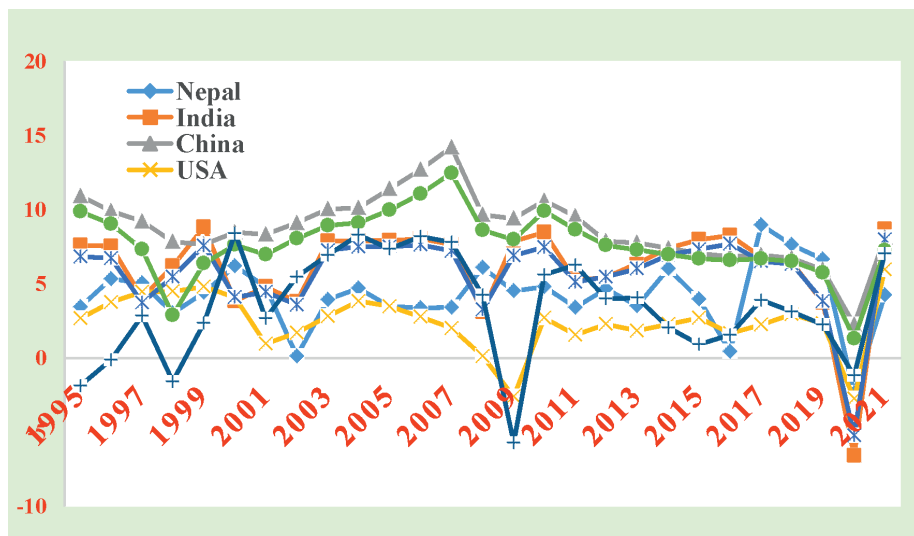


Figure 4.6: Economic growth (in percentage)

Source: Estimation based on data available at <https://data.worldbank.org>

Figure 4.6 shows the economic growth rate of Nepal, India, the USA and China from 1995 to 2021. China appears to have had the highest and most consistent economic growth rate throughout the period. It starts high in 1995 and remains relatively steady at around 10% for most of the period. India's economic growth rate has also been positive throughout the period, but it has fluctuated more than China's. India started lower than China in 1995 but surpassed it around 2007 with some before it. Nepal's economic growth rate has fluctuated the most among the three countries. It has had periods of high growth, but also periods of negative growth. Overall, Nepal remains the slowest-growing economy among the two peer countries.

Annual Per Capita GDP Growth

Per capita income is derived by dividing the total GDP at constant prices by the size of the population. It measures the average level of well-being from the perspective of income. It is the percentage change in real income over the years. Nepal remains one of the slowest-growing economies on a per capita basis. Per capita income measures the average income per person in a country, offering insights into the standard of living. In Nepal, per capita income growth has been sluggish, and rising income inequality is an ongoing concern.

The country's Gini coefficient, which measures income distribution inequality, has been rising, indicating that economic growth is not being equitably shared among the population. This situation weakens the overall economic structure and exacerbates social tensions, potentially undermining national security and stability.

Table 4.11 presents annual per capita GDP growth. Nepal has a weaker performance compared to selected economies. Annual per capita GDP growth of India and China on average, is 1.6% and 5.1% higher respectively compared to Nepal. The weaker growth in annual per capita GDP is due to weaker investment prospects reflected in the lower GFCF to GDP ratio and the reluctance of foreign investors to invest in Nepal. It has a historical legacy of multiple socio-politico-economic developments over the centuries.

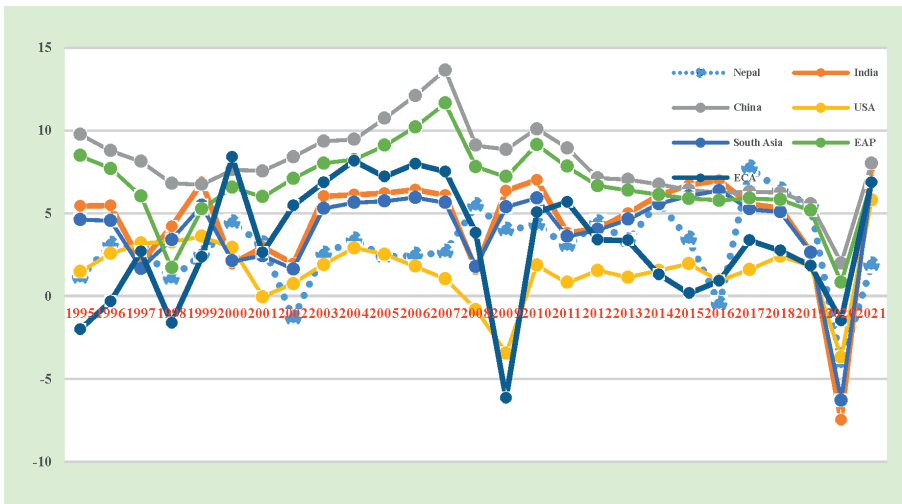


Figure 4.7: Per Capita Income Growth (in percentage)

Source: Estimation based on data available at <https://data.worldbank.org>

Figure 4.7 shows the trends in per capita income growth in several South Asian countries including China, India, and Nepal from 1995 to 2021. It's an average measure of income without consideration or adjustment of inequality in income. Per capita income appears to have increased the most in China followed by India and Nepal over the period. However, the level of per capita income of Nepal is smaller than other countries implicating weaker economic-political performance.

Table 4.12 shows correlations between the per capita GDP growth of various regions and countries. The correlation between Nepal and India is 0.43, however, the correlation between Nepal and China is only 0.15. The correlation coefficient indicates that Nepal has a relatively stronger positive correlation in per capita GDP growth with India and the USA than China. Further to be noted that correlation does not equal causation, there could be other factors influencing macroeconomic performance. The possible reasons could be the flow of merchandise trade, trade links, and easy travel of people between the countries.

Production Possibility Frontier

Based on annual per capita GDP growth in Table 4.12, the productivity possibility frontier has been drawn. It measures the highest level of productivity that can be achieved by a country given its current resources and technology. It is often estimated by using a benchmark country which is considered as the most productive in the world. The USA has the lowest GDP gap, so it has been used as a benchmark country. For PPF, the state of technology is taken to be constant. The study of productivity convergence among nations investigates whether knowledge spillovers, technological advancements, and learning drive productivity toward the global frontier country. Studies conducted within nations examine convergence to the national border using the wide variation in productivity between enterprises. Using the annual per capita GDP growth rate presented in Annexure 6, Table 4.11, Figure 4.8 and Figure 4.9 show that assuming the PPF of the USA as a benchmark frontier concerning the USA, the productivity of Nepal lags far behind that of China and India.

The gap between the productivity frontier of Nepal and India was narrower by 2002 and widening afterwards indicating the scope for improvement in productivity for Nepal as shown in Figure 4.8. Similarly, the gap between the productivity frontier of Nepal and China was narrower by 2005 and sharply widened afterwards indicating the scope for massive improvement in productivity for Nepal to meet the path of China as shown in Figure 4.9. The PPF of Nepal seems almost flat compared to China. These PPFs measure the geo-economic strengths of Nepal, India, China and the USA (WB, 2023).

Nepali firms might lag far behind technologically. So they can learn more from the global frontier and adapt accordingly. Nepali firms are still able to benefit from domestic knowledge and skills inherited by raising the

level of existing capacity utilisation by three-fourths of installed capacity. The development of science and technology at the maximum level is the prerequisite for lifting the PPF of Nepal to the level of global standards. The weaker public policy implementation shall also be responsible for the lower PPF of Nepal.



Figure 4.8: Productivity Frontier of Nepal and India concerning the USA

Source: Estimation based on Per capita GDP growth (annual Percentage) data by using the method of benchmark country which is considered as the most productive in the world.

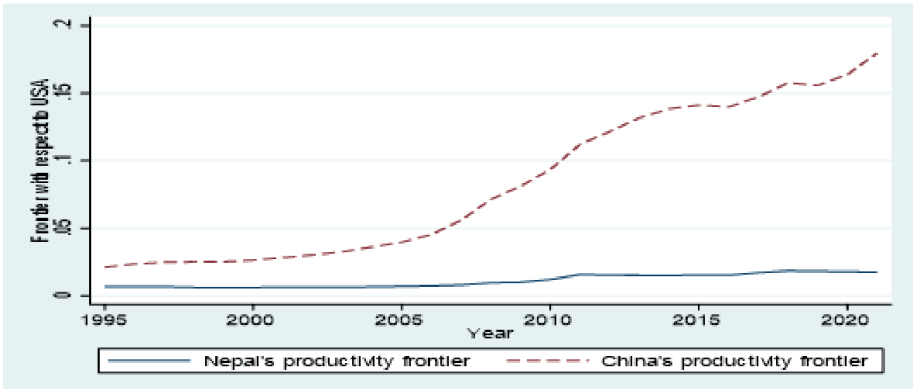


Figure 4.9: Productivity Frontier of Nepal and China concerning the USA

Source: Estimation based on Per capita GDP growth (annual Percentage) data.

Results of Hypothesis Testing

The study enlists the geo-economic variables of Nepal that comprise: the Gross Fixed Capital Formation to GDP, Remittance to GDP Ratio, External debt

to GDP Ratio, Foreign Direct Investment to GDP Ratio, Current Account Balance to GDP Ratio, Annual GDP Growth Rate, and Annual Per capita GDP growth. The acceptance or rejection decision has been made based on probability value derived from calculation at a 5% level of significance.

Table 4.13 shows the results of hypothesis testing on whether there are differences in the mean values of the given variables. The first column states the null hypothesis, which is that there is no significant correlation between the two countries on the variables under study including Gross Fixed Capital Formation to GDP, Remittance to GDP ratio, external debt to GDP ratio, foreign direct investment to GDP ratio, current account balance to GDP ratio, annual GDP growth rate and annual per capita GDP growth in the compared countries or regions. The second column shows mean differences with significance at a 5% level of significance for each comparison. The third column simplifies the result of accepted or rejected to explain whether there are differences between the mean. The rejection of the null hypothesis depicts there is no correlation between the two means and they are significantly different to each other.

The outcomes of the Hypothesis testing presented in Table 4.13 indicate that there is a significant difference between Nepal and other economies in the given geo-economic variables as the null hypothesis has been rejected. The significant difference in values of Nepal with all the best-performing economies and global power blocs under consideration in this research signifies the vulnerable geo-economics of Nepal. Gross fixed capital formation to GDP, remittance to GDP ratio, external debt to GDP ratio, foreign direct investment to GDP ratio, and annual GDP growth rate related null hypothesis have been rejected. It implies that there is a significant difference between the compared economies and Nepal. Nepal has not followed suit as India, China, East Asia, the USA and Europe. It indicates the geo-economic weakness of Nepal as these all have well-positioned than Nepal on geo-economic indicators.

The current account balance to GDP ratio between Nepal and India as well as Nepal and the USA is not significantly different. The imports and exports of goods and services are not in their favour. They are similar in nature and trend. Similarly, the growth rate of annual per capita GDP of Nepal and Europe & Central Asia (excluding high income) is not significantly different as the null hypothesis has been accepted. The absolute level of per capita is different in

these economies but the relative pattern of growth is not different. Nepal's geo-economic strengths seem inferior and subordinate to other economies as reflected in all variables considered above. The significant difference between Nepal and other economies in each geo-economic variable indicates the scope of the requirement for historical progress on geo-economic performance.

5. IMPLICATIONS AND DISCUSSIONS OF THE FINDINGS

Geopolitics to Geo-economics in Nepal

Nepal's geopolitical stance has shifted toward geo-economic dynamics in recent decades, moving from managing political conflicts with global powers to dealing with economic challenges. Over the past 40 years, geo-economic tools like economic blockades have been used more frequently, reflecting global shifts. The dominance of the US dollar continues, even as other currencies rise. However, global economic structures, such as the World Trade Organisation (WTO) and the International Monetary Fund (IMF), face challenges. For instance, the IMF's limited ability to reduce national debt post-COVID has led to a debt crisis in many poor countries. Global economic fragmentation, trade protectionism, and rising inequality are growing concerns, and Nepal is no exception. The economic system today is marked by increased competition, security threats, unemployment, and inequality. Globalisation has worsened financial crises, climate risks, and economic tensions. Geo-economics, the application of economics to achieve political objectives, is a growing trend worldwide. Theories such as neorealism, which prioritise state survival in an anarchic global system, underpin geo-economics. This approach focuses on states' use of economic power to gain control over others and emphasises the importance of economic security.

Geo-economic Implications for Nepal

Nepal has a rich history of state-building without colonial oppression, which provides distinct geo-economic opportunities. Remittances, largely from foreign employment, have long been crucial to Nepal's economy for over a century, allowing it to build a degree of economic resilience. This trend dates back to Nepalese involvement in global conflicts, where Nepali youths served as soldiers abroad. In recent decades, many Nepali labourers have worked in the construction and development sectors, especially in Gulf countries, sending

remittances back home. These relationships have geo-economic significance for Nepal, as the remittance flows foster interdependence. The same holds true for remittance exchanges with India, as the two countries share open borders and a significant labour migration pattern (Baru, 2013). Nepal's geographic position between two emerging powers, India and China, offers potential economic benefits. The trickle-down effects of their economic prosperity could help Nepal build a strong foundation. By leveraging the large markets of its neighbours, Nepal can bolster its own exports and imports, strengthening its geo-economics. However, this also demands strategic responses to the geo-economic impacts of these nations' actions.

Economic Growth and Investment Potential

Nepal has the potential to achieve double-digit economic growth, but this requires substantial investment in both human and physical infrastructure. With domestic savings low, foreign investments in technology and innovation could be a boon for Nepal. Foreign Direct Investment (FDI) can be particularly attractive to investors, as developing countries like Nepal offer higher returns. The example of rapid economic growth in India and China, partly fueled by foreign investment, could serve as a model for Nepal.

Additionally, borrowing from bilateral and multilateral sources at low interest rates can support long-term strategic projects. If these resources are used effectively, they could boost employment and production, enhancing national economic security. Growth in per capita income, along with reduced inequality, would further strengthen Nepal's economic foundation. Investment in strategic infrastructure is crucial for fostering production, employment, and stability. This would also help Nepal maintain its economic security, which in turn safeguards national sovereignty.

Geo-economics as a Tool of Statecraft

As global powers increasingly use geo-economics as a tool of statecraft, Nepal must adapt. Economic methods, such as market penetration and civilian innovation, are replacing traditional military strategies. This trend favours economic security and power over military dominance. However, powerful nations will still resort to war when other methods fail to sway global trade flows in their favour (Abbott, 1989).

For Nepal, the shift toward economic diplomacy offers new opportunities. Participation in the liberal world order can boost Nepal's access to global markets, as demonstrated by the contribution of remittances to the country's foreign exchange reserves. Nepal can also benefit from alternative financial institutions like the Asian Infrastructure Investment Bank (AIIB) and the New Development Bank (NDB), gaining access to diverse sources of development financing. Nepal's adherence to the principles of Panchasheel—mutual respect and non-interference in the affairs of neighbouring countries—has allowed it to avoid entanglement in military alliances. Moreover, its significant contributions to UN peacekeeping missions have provided the country with a global platform, enhancing its geo-economic influence.

Challenges Facing Nepal's Geo-economics

Despite the prospects, Nepal faces significant challenges. As a landlocked nation situated between two rising powers, Nepal is often caught in the rivalry between India and China. This political-economic-military competition creates a proxy conflict within Nepal. Moreover, the presence of Western interests, especially from the US and Europe, complicates Nepal's balancing act between these regional and global powers. Weak governance and a sluggish pace of improvement in public services further hinder Nepal's geo-economic growth. The country's weak domestic production system exacerbates its trade deficit with many of its trading partners, an indicator of its economic vulnerability. High sovereign debt and the inefficient use of borrowed resources also pose long-term risks.

Additionally, global financial crises and economic shocks have direct repercussions on Nepal, given its interconnectedness with the global economy. The mismanagement of resources by private financial institutions also threatens to destabilise the national economy. The competitive international environment, characterised by power blocs, places further strain on Nepal's diplomatic and economic strategies. The global shift toward a zero-sum mindset in trade and investment often injects conflict into these areas, undermining cooperation and trust.

Nepal's Strategic Response

To navigate these challenges, Nepal must cultivate a strategic mindset that integrates economic and political considerations. Strengthening governance,

fostering domestic production, and securing foreign investments will be critical for building economic resilience. The country must also carefully manage its debt and focus on projects that yield long-term benefits. Nepal must also work on improving trust with global and regional powers, ensuring that its geo-economic strategy promotes cooperation rather than conflict (Guterres, 2023). As a relatively small state with limited global influence, Nepal must maintain diplomatic flexibility, balancing relationships with China, India, and the broader international community.

Nepal's shift from geopolitics to geo-economics reflects broader global trends. By leveraging its geographic position and strategic opportunities, Nepal can enhance its economic security and national sovereignty. However, this requires careful management of domestic and international challenges, as well as a forward-thinking approach to governance and economic policy. Geo-economics presents both opportunities and risks for Nepal, and its ability to adapt will determine its future prosperity (Silwal, 2021).

6. CONCLUSION

Considered all variables jointly and individually, and from qualitative and quantitative analyses as well as from ground experience, geo-economic indicators have revealed the weaker situation of geo-economics in Nepal. The concentration of economic transactions to India indicates that Nepal is India-locked for all practical reasons and purpose. It has to make important breakthrough to transform a remittance-dependent and consumption-based economy for competitive standing. It has been concluded that to solve multidimensional challenges, the dynamics of the geo-economics of Nepal shall be strengthened for national economic security and sustained equitable prosperity. The area of geo-economics is linked to military, political, technological innovations as well as socio-economic capabilities of a nation-state. If a nation is not economically strong internally, it cannot protect itself well from all aspects of threats to the nation. It is vulnerable to exposure to risks and has less confidence in the public. Geography, politics, and economics complement each other rather than compete in the process of consolidation of multi-dimensions of geo-economics in Nepal. The complementary relations with cooperative rivalry have been proven true in this study.

Economic capability underpins the robustness of geo-economic power, foreign policy and international relations. Different economic indicators have cross-border relations directly and indirectly influencing the political, economic, military, diplomatic and security strength of Nepal. Nepal should strive for quality capital formation to reduce economic dependency on the countries from where remittances and imports flow to Nepal. The most productive use of external debt is important for economic freedom, sovereignty and prevention of the cycle of a debt trap. Lower foreign direct investment flows into Nepal indicate that Nepal does not have a favourable environment to attract foreign investment. Nepali firms lag far behind technologically hence requiring them to learn more from the global frontier, domestically inherited skills and adapt to global innovation accordingly.

Geo-economic security is the base for economic security, national security and sovereignty of Nepal. Intervened sovereignty eventually challenges the robustness of overall national security. A sovereign nation can follow its choice of policies to develop the national economy, politics, and international relations on the desired path, without which other dimensions of national security cannot be well guaranteed and managed. Economic strength largely determines growth, defence capability, law and order. Thus, economic security directly influences national security. The weaker economic performance of the nation makes people frustrated and ensues political changes in any direction.

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APPENDICES

Table 4.1: Correlation: Gross Fixed Capital Formation to GDP

Countries	Nepal	India	China	USA	South Asia	EAP	ECA
Nepal	1.00						
India	-0.16	1.00					
China	0.57	0.57	1.00				
USA	-0.36	-0.30	-0.67	1.00			
South Asia	-0.07	0.99	0.61	-0.31	1.00		
EAP	0.70	0.43	0.96	-0.73	0.48	1.00	
ECA	0.56	0.53	0.76	-0.52	0.58	0.82	1.00

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.2: Gross Fixed Capital Formation to GDP

Countries	Obs	Mean1	Mean2	Diff
Nepal - India	27.0	23.9	29.7	-5.9**
Nepal - USA	27.0	23.9	21.1	2.7**
Nepal - China	27.0	23.9	39.0	-15.2**
Nepal - Europe	27.0	23.9	22.0	1.9**
Nepal - East Asia	27.0	23.9	36.2	-12.4**

Note: **: Significant at 5 percent

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.3: Correlation: Remittance to GDP Ratio and GFCF to GDP Ratio

GFCF to GDP Ratio	Remittance to GDP Ratio		
	Countries	Nepal	India
	India	0.50	
	China	0.94	0.65
	USA	-0.58	-0.50
	South Asia	0.55	0.69
	EAP	0.94	0.55
	ECA	0.83	0.47

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.4: Comparison of Remittances to GDP ratio of Nepal with other economies

Countries	Obs	Mean1	Mean2	Diff
Nepal - India	27.0	15.8	3.0	12.8**
Nepal - USA	27.0	15.8	0.0	15.8**
Nepal - China	27.0	15.8	0.2	15.6**
Nepal - Europe	27.0	15.8	1.3	14.5**
Nepal - East Asia	27.0	15.8	0.7	15.1**

Note: **: Significant at 5 percent

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.5: Correlation: External Debt to GDP

<i>Countries</i>	<i>Nepal</i>	<i>India</i>	<i>China</i>	<i>South Asia</i>	<i>ECA</i>
Nepal	1				
India	0.24	1			
China	-0.04	0.54	1		
South Asia	0.62	0.90	0.61	1	
ECA	0.12	0.07	0.76	0.11	1

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.6: External debt to GDP ratio

<i>Countries</i>	<i>Obs</i>	<i>Mean1</i>	<i>Mean2</i>	<i>Diff</i>
Nepal - India	27.0	34.0	20.3	13.7**
Nepal - China	27.0	34.0	13.3	20.6**
Nepal - Europe	27.0	34.0	42.9	-8.9**

Note: **: Significant at 5 percent

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.7

<i>Countries</i>	<i>Nepal</i>	<i>India</i>	<i>China</i>	<i>USA</i>	<i>South Asia</i>	<i>EAP</i>	<i>ECA</i>
Nepal	1						
India	0.06	1					
China	-0.46	-0.37	1				
USA	-0.16	0.04	0.01	1			
South Asia	-0.02	0.99	-0.26	0.07	1		
EAP	-0.43	-0.27	0.98	0.05	-0.15	1	
ECA	-0.19	0.63	0.11	0.19	0.72	0.22	1

Correlation: FDI to GDP Ratio

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.8: Foreign Direct Investment to GDP Ratio

<i>Countries</i>	<i>Obs</i>	<i>Mean1</i>	<i>Mean2</i>	<i>Diff</i>
Nepal - India	27.0	0.3	1.5	-1.2**
Nepal - USA	27.0	0.3	1.8	-1.5**
Nepal - China	27.0	0.3	3.2	-3.0**
Nepal - Europe	27.0	0.3	2.4	-2.2**
Nepal - East Asia	27.0	0.3	3.0	-2.7**

Note: **: Significant at 5 percent

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.9: Current Account Balance to GDP Ratio

<i>Countries</i>	<i>Obs</i>	<i>Mean1</i>	<i>Mean2</i>	<i>Diff</i>
Nepal - India	27.0	-1.0	-1.2	0.3
Nepal - USA	27.0	-1.0	-3.2	2.2
Nepal - China	27.0	-1.0	3.0	-4.0**

Note: **: Significant at 5 percent
Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.10: Annual GDP Growth Rate

<i>Countries</i>	<i>Obs</i>	<i>Mean1</i>	<i>Mean2</i>	<i>Diff</i>
Nepal - India	27.0	4.2	6.1	-1.9**
Nepal - USA	27.0	4.2	2.4	1.8**
Nepal - China	27.0	4.2	8.8	-4.5**
Nepal - Europe	27.0	4.2	3.5	0.7
Nepal - East Asia	27.0	4.2	7.7	-3.5**

Note: **: Significant at 5 percent

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.11: Annual Per capita GDP growth

<i>Countries</i>	<i>Obs</i>	<i>Mean1</i>	<i>Mean2</i>	<i>Diff</i>
Nepal - India	27.0	3.0	4.6	-1.6**
Nepal - USA	27.0	3.0	1.5	1.5**
Nepal - China	27.0	3.0	8.1	-5.1**
Nepal - Europe	27.0	3.0	3.2	-0.2
Nepal - East Asia	27.0	3.0	6.8	-3.8**

Note: **: Significant at 5 percent
Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.12: Correlation: Per Capita GDP Growth

<i>Countries</i>	<i>Nepal</i>	<i>India</i>	<i>China</i>	<i>USA</i>	<i>South Asia</i>	<i>EAP</i>	<i>ECA</i>
Nepal	1.00						
India	0.43	1.00					
China	0.15	0.53	1.00				
USA	0.24	0.54	0.20	1.00			
South Asia	0.46	0.99	0.53	0.53	1.00		
EAP	0.28	0.56	0.92	0.16	0.58	1.00	
ECA	0.14	0.17	0.48	0.47	0.22	0.54	1.00

Source: Calculation based on data available at <https://data.worldbank.org>

Table 4.13: Results of Hypothesis Testing

<i>Variables Tested</i>	<i>Mean Difference (t-test)</i>	<i>Null Hypothesis</i>
Gross Fixed Capital Formation to GDP		
Nepal - India	-5.9**	Rejected
Nepal - USA	2.7**	Rejected
Nepal - China	-15.2**	Rejected
Nepal - Europe	1.9**	Rejected
Nepal - East Asia	-12.4**	Rejected
Remittance to GDP Ratio		
Nepal - India	12.8**	Rejected
Nepal - USA	15.8**	Rejected
Nepal - China	15.6**	Rejected
Nepal - Europe	14.5**	Rejected
Nepal - East Asia	15.1**	Rejected
External debt to GDP Ratio		
Nepal - India	13.7**	Rejected
Nepal - China	20.6**	Rejected
Nepal - Europe	-8.9**	Rejected
Foreign Direct Investment to GDP Ratio		
Nepal - India	-1.2**	Rejected
Nepal - USA	-1.5**	Rejected
Nepal - China	-3.0**	Rejected
Nepal - Europe	-2.2**	Rejected
Nepal - East Asia	-2.7**	Rejected
Current Account Balance to GDP Ratio		
Nepal - India	0.3	Failed to Reject
Nepal - USA	2.2	Failed to Reject
Nepal - China	-4.0**	Rejected
Annual GDP Growth Rate		
Nepal - India	-1.9**	Rejected
Nepal - USA	1.8**	Rejected
Nepal - China	-4.5**	Rejected
Nepal - East Asia	-3.5**	Rejected
Annual Per capita GDP growth		
Nepal - India	-1.6**	Rejected
Nepal - USA	1.5**	Rejected
Nepal - China	-5.1**	Rejected
Nepal - Europe	-0.2	Failed to Reject
Nepal - East Asia	-3.8**	Rejected

Source: Calculation based on Appendix 1 to Appendix 7 data.

Note: The value of t-statistics is neutral of sign. Asterisk sign *, **, and *** represents 10%, 5% and 1% level of significance respectively.