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An analysis of income inequality between BRICS and G7 countries

Sookroo, Sashin

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An analysis of income inequality between BRICS and G7 countries

Sashin Sookroo

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

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ABSTRACT

Studies on income inequality have largely focused on deriving Concept 3 inequality, focusing on global studies. This paper analyses Concept 1 inequality between BRICS and G7 countries and Concept 2 inequality between BRICS and G7 groups, from 1993-2003.

The paper used secondary data obtained from the World Bank databases and tracked year-on-year changes, over the 20 year period. The paper found that USA, Canada, the UK and Germany increased the most in terms of dollar value of GDP per capita. In terms of GDP percentage change, China, India, Russia and Brazil increased the most. The USA, Canada, Germany and the UK increased the most in terms of dollar value of GNI per capita and in percentage change in GNI per capita China, India, Russia and Brazil increased the most. In addition, the paper also found that there is a convergence of income that was observed between BRICS and G7 and even when China or China and India where excluded from the BRICS definition, Brazil, Russia and South Africa's income per capita increased faster than G7's income per capita; although G7's real dollar value growth is larger than BRICS, BRICS excluding China and BRICS excluding China and India.

It was recommended that governments need to monitor changes in income inequality, understand drivers of income per capita and adopt approaches used by high income per capita growth countries. In addition, although a convergence is observed between BRICS and G7; more work needs to be done to reduce income inequality by governments, international regulatory bodies and policy makers. Further, economic modelling needs to be revisited to understand how income inequality has changed and will change in future between countries and/or groups of interest. Lastly, organisations with global interests must understand the benefits of increasing income in foreign operations and the impact on productivity and organisation value.

DECLARATION

I, Sashin Sookroo, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Signed at ……

On the …….. day of …… 20…..

DEDICATION

This research paper is dedicated to:

My parents, Meera and Raj Sookroo, your sacrifices and guidance have enabled me to realise my dreams.

My late grandmother, Mrs Luckrajee Sookroo, your unconditional affection and support has, and will always be, a pillar in my life.

My sister, brother-in-law and niece; Tricia, Udhir and Larishka Hunsraj, your encouragement and assistance have helped fuel the fire for my desire to succeed during the toughest times.

God, for the blessings bestowed upon me.

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CHAPTER 1: INTRODUCTION

1.1 Purpose of the study

The purpose of this research is to compare income inequality over time and to discuss key factors influencing the average income difference between BRICS and G7 countries and BRICS and G7 groups from 1993-2013. Milanovic (2006), in his studies on global income inequality, defines three types of inequality concepts. (1) Inequality based on countries' mean incomes (Concept 1 inequality), (2) inequality based countries' mean incomes weighted by the countries' population size (Concept 2 inequality) and (3) Inequality amongst the world's individuals (Concept 3 inequality or Global Inequality); which ranks each individual's income on a continuum irrespective of nationality. This paper focused on, applying Milanovic's definitions of inequality by using Concept 1 inequality to analyse changes in income inequality between countries and Concept 2 inequality to analyse changes in income inequality between BRICS and G7, based on Gross National Income (GNI) and Gross Domestic Product (GDP) as a measure of country income over time, from 1993-2013, using data gathered from a single data source, the World Bank's open data repository. The paper then described the nature of changes using academic literature.

The majority of studies published within the income inequality domain, focus on global income inequality (Concept 3 inequality), which is a ranking of the world's individuals, irrespective of nationality. This paper examines how income has flowed between BRICS and G7 groups and not individuals within BRICS and G7, therefore this paper only analyses Concept 1 and Concept 2 inequality. This paper uses Concept 1 inequality's definition to analyse changes in income between countries over time and Concept 2 inequality to examine changes in income between the BRICS and G7 groups, as depicted in table 1. In addition, most studies either use

GDP or GNI as a measure of income; whereas this paper analyses both GNI and GDP for each country, BRICS and G7. Further the paper also went on to describe the nature of differences in countries, groups and measures across time.

Table 1 Definitions, explanations and examples of income inequality, as applied in the research paper.

Methodology	Defintion	Fields used in this research paper	Comparison based on	Example
Concept 1 inequality	Concept 1 inequality - Un-weighted inequality: refers to a rank of world income	GNI, PPP (constant 2011 international $) GDP, PPP (constant 2011 international $)	United States, Japan, Germany, France, United Kingdom, Italy, Canada, Brazil, Russia, India, China and South	Concept 1 inequality for South Africa is = GNI, PPP (constant 2011 international $)/ Population
Concept 2 inequality	Concept 2 inequality – Population weighted inequality: refers to a rank world inequality between mean incomes per country, weighted by population size.	GNI, PPP (constant 2011 international $) GDP, PPP (constant 2011 international $) Population	BRICS and G7	Concept 2 inequality for BRICS is = GNI, PPP (constant 2011 international $) of South Africa / Population of South Africa * Population of South Africa/(Population of China+Population of Russia+Population of Brazil+Population of India+Population of South Africa) + GNI, PPP (constant 2011 international $) of China / Population of China * Population of South Africa/(Population of China+Population of Russia+Population of Brazil+Population of India+Population of South Africa) + GNI, PPP (constant 2011 international $) of Brazil / Population of Brazil * Population of South Africa/(Population of China+Population of Russia+Population of Brazil+Population of India+Population of South Africa) + GNI, PPP (constant 2011 international $) of India / Population of India * Population of South Africa/(Population of China+Population of Russia+Population of Brazil+Population of India+Population of South Africa) + GNI, PPP (constant 2011 international $) of Russia / Population of Russia * Population of South Africa/(Population of China+Population of Russia+Population of Brazil+Population of India+Population of South Africa)

Concept 1 and Concept 2 inequality both measure income inequality; and GNI and GDP are both measures of country income. Concept 1 and Concept 2 inequality were computed using GDP and GNI adjusted for purchasing power parity (PPP) which enabled comparisons between countries and groups respectively. In addition, a benchmark year and currency for the PPP was used to enable an analysis from 1993 to 2013 to be conducted, therefore all income data is stated in terms constant 2011 international $. Gross Domestic Product refers to the total market value of goods and services produced within a country (Van Rensburg, 2011); World Bank (2014). Gross National Income refers to the total market value of goods and services produced by a country's citizens or a business registered in a country (Van Rensburg, 2011; WorldBank, 2014). GDP and GNI was compared across countries and BRICS and G7 groupings over 1993 to 2013; the differences in GNI and GDP, countries and BRICS and G7 were described based on academic literature and supporting data from the World Bank's data repository.

1.2 Context of the study

Studies on global income inequality (concept 3 inequality) have been performed by using concept 2 inequality as the basis to derive concept 3 inequality, by applying a country's income distribution percentiles to concept 2 inequality information. Global income inequality is a fairly recent topic for two main reasons. Firstly, access to data is limited on a global scale. Global income inequality data needs to be collected by household surveys and only started becoming available for many countries in the 1980's. Secondly, the available inequality data is not collected using consistent research methodologies across countries (Milanovic, 2006). Concept 1 and concept 2 inequality, in global income inequality studies measure the mean income of a person in the relevant country.

Concept 1 inequality simply compares average incomes across countries. GNI and GDP can be used to measure income. However, when using this method for comparing inequality impact on a group, such as BRICS or G7; changes in population sizes create a bias in comparisons over time. For example, a 10% increase in China's average income per capita has a greater impact on BRICS's average income, compared to a 10% increase in South Africa's income per capita.

Concept 2 inequality solves for population size bias, when comparing groups, by weighting income per capita by a country's population. Concept 2 inequality studies have been done before by Kuznets in 1954 and Kravis, Heston and Summers in 1978 (Milanovic, 2006), however this data is now outdated. Bourguignon and Morrisson (2002) calculated a concept 2 inequality based on Gross Domestic Product (GDP) per capita as a measure of income; however they only used GDP as measure of income. GDP contains economic value created within a country, which includes foreign owned operations within a country and does not take into account economic value obtained from other countries, by local residents. GNI determines economic value which is generated by countries' residents, locally and internationally.

Given the data constraints and discrepancies in household survey methodologies, it is difficult to administer global income inequality (concept 3 inequality) studies. In addition, population size bias distorts results when making comparisons across groups such as BRICS and G7, when using concept 1 inequality. Milanovic (2006) therefore states that concept 2 inequality is a simple, yet effective manner to measure global income equality. This report has used concept 1 inequality for comparisons between countries and concept 2 inequality for comparisons between BRICS and G7 groups. Davies, Shorrocks, Sandstrom, and Wolff (2007) and Bourguignon and Morrisson (2002) suggest that although research on economic inequality is usually developed based on income or consumption; other variables of

well-being, such as wealth and education are also being increasingly being recognised. This report acknowledged the impact of these variables, however due to data constraints and simplicity; the report focused on income. Income is equal to consumption, which is equal to GDP (R. Cooper & John, 2015; Van Rensburg, 2011); as income from one entity (for example, government) is consumption for other entities (for example, firms and households paying tax) according to the circular flow model. Income is a leading indicator for changes in wealth and education, and health and understanding how a country's average income is changed can be used to determine how a country's overall well-being will change.

1.3 Problem statement

1.3.1 *Main problem*

The intention of the research is further develop research in income inequality and explore two areas which have received little attention: (1) cross-country income differences, for example, South Africa compared to the United States of America; and (2) Income differences between BRICS and G7 economies. Specifically the research analyses differences across GDP and GNI as measures of income, which can be readily obtained from a reputable comparable public source; to determine income differences from 1993-2013 between (1) BRICS and G7 countries; (2) BRICS and G7 groups (3) which countries are benefiting by obtaining the larger share of income; (4) which countries are lagging by receiving a smaller share of global income; and lastly, (5) if the income inequality between BRICS countries and G7 groups is widening.

1.3.2 *Sub-problems*

The first sub problem is to determine the changes in average income across BRICS and G7 countries from 1993 to 2013, using GDP per capita and GNI per capita. For

example, average income in South Africa has increased by 20% from $523 to $628 between 1993 and 2003.

The second sub problem is to determine changes in income inequality across BRICS and G7 groups, using GDP per capita and GNI per capita. For example, the BRICS average income is up 12% from $ 453 to $ 507.

1.4 Significance of the study

Tracking income per capita across countries enables comparisons to determine relative changes in (1) income per capita, (2) rate of change of income per capita, (3) change in income per capita amongst BRICS and G7 countries, (4) rate of change of income per capita amongst BRICS and G7. In addition, GDP and GNI are both measures of income however they differ in composition, which enable comparisons between the different measures and helped describe the changes in income.

Concept 1 inequality is used to determine how income per capita has changed across BRICS and G7 economies from 1993 and 2013 and Concept 2 inequality is used to determine how income per capita has changed across BRICS and G7 groups. Concept 1 inequality enables comparisons to be made on income per capita levels and growth across each of the individual BRICS and G7 economies from 1993 to 2003, relative to each other.

Concept 2 inequality is a simple method deriving inequality, as only mean income per capita and a population size is required (Milanovic, 2006). Concept 2 inequality can be used to measure and to track global inequality, if it is assumed that all citizens in a country have the country's mean income (Milanovic, 2006) and it is a good macro indicator based on the average person in a country, given data constraints from sourcing inter-country income distributions obtained from

inconsistent household surveys. In the study, Concept 2 inequality is not used to compare global income inequality; rather it is used to compare income inequality across G7 and BRICS countries; as the purpose of the research is to examine how average income per capita has changed across countries and groups of interest, and not to track global income inequality.

Income is a determinant of wealth, without income wealth cannot be accumulated. Wealth protects against the adverse effects of old age or other loss of income, however income is a critical measure of a country's short to medium term prospects which can be impacted by economic factors such as increased unemployment and decreased foreign direct investment.

This study was performed in an attempt to develop an understanding of income changes between G7 and BRICS economies and groups and also to describe changes in income inequality using academic literature and the World Bank's databases.

The study may provide guidance to governments, organisations with global interests and international governing bodies, interest groups and policy makers, who are concerned with redistributing income from richer to poorer economies, to improve global well-being, balance political control and minimise the endowment and snowball impact of richer countries, which have greater access to resources.

1.5 Delimitations of the study

- Income was used as a proxy for economic well-being and was measured by GDP and GNI, although other factors impact economic well-being, such as education and health care.

- Income distributions of the population across all countries was not analysed due to data availability and accuracy of the data.

- National accounts data was used purely and household survey data was not used to infer inter-country income inequality, as the focus on the study was not on global income inequality.

- Only BRICS and G7 countries were analysed, not the all the countries in World.

1.6 Definition of terms

Concept 1 inequality - Un-weighted inequality: refers to a rank of world income (for example, GDP per capita) and is un-weighted by population size.
Concept 2 inequality – Population weighted inequality: refers to a rank world inequality between mean incomes per country, weighted by population size.
Concept 3 inequality – Global inequality: refers to rank of all citizens income, irrespective of their citizenship country and is compared in a continuous scale.

GDP - Gross Domestic Product is the economic output produced within a country (World Bank, 2014).

GNI – Gross National Income is the sum of (1) economic value added by local producers, adjusted for taxes and (2) income from abroad (WorldBank, 2014).

PPP – Purchasing Power Parity equalises exchange rate differences to ensure similar goods and services cost the same between countries.

Gini Coefficient – is a classification of income distribution within a country. Perfect inequality has a value of zero (“0”), in which all income is allocated to the population with the highest income. Perfect equality has a value of one (“1”), in which all income is distributed equally across the population.

1.7 Assumptions

- A countries gross domestic product and gross national income is representative of the entire population’s income.

- The World Bank data is currently the best available information for the study

- The World Bank’s GDP, GNI and population data follows a consistent methodology across countries

2. LITERATURE REVIEW

2.1 Introduction

In this chapter, the concept of income inequality is reviewed. The chapter begins with section 2.2 providing a background on the origins of income inequality research; Section 2.2.1 defining income inequality and Section 2.2.2 explaining how income can be compared across countries and time. Section 2.3 defines BRICS and G7 economies used in the remainder of this paper. Section 2.4 explores literature on income inequality across BRICS and G7 countries, with section 2.4.1 detailing changes in concept 1 inequality. Section 2.5 explores literature on income inequality across BRICS and G7 groups, with section 2.5.1 detailing changes in concept 2 inequality. Section 2.6 discusses the nature of differences between changes in BRICS and G7 income. Lastly, Section 2.7 concludes the literature review.

2.2 Background to Income inequality

In 1969, the Pearson Commission Report proposed that a decrease in the currently "widening gap" of income between developed and developing economies was a key objective for global collaboration, which resulted in several economic papers stating rich countries were increasingly becoming richer and poor countries were becoming increasingly poorer, however due to deficiencies in past studies, which include the limited time period analysed and the exclusion of multiple countries, Berry, Bourguignon, and Morrison (1983) conducted early empirical research to find out if there actually was a widening income gap between developed and developing economies. Since then, many authors have written on income inequality, including Concept 1 and Concept 2 inequality concerning which, authors disagree about certain movements in inequality. Concept 1 inequality refers to a rank of world income (for example, GDP per capita) and is un-weighted by population size.

Concept 2 refers to inequality based countries mean incomes weighted by the countries' population size.

As seen in Table 2, many income inequality studies have been performed which have used different sources of information and yielded some conflicting findings. All the studies listed below, refer to studies that have been performed to estimate Concept 3 inequality. Concept 3 inequality refers to inequality amongst the world's individuals, irrespective of nationality. The Gini co-efficient refers to classification of income distribution within a country. Perfect inequality has a value of zero ("0"), in which all income is allocated to the population with the highest income. Perfect equality has a value of one ("1"), in which all income is distributed equally across the population.

Table 2 Global inequality (in Gini points) in 1990s by various authors (Milanovic, 2006)

Author	Year	Gini value	National mean incomes from:	National income distributions from:
Milanovic (2005)	1993	66	Household surveys	Household surveys
Milanovic (2005)	1998	65	Household surveys	Household surveys
Bourguignon and Morrison (2002)	1990s	66	GDI (Maddison)	Household survey estimates
Sala-i-Martin (2002)	1998	61	GDI (Penn World Tables)	Ginis and quintiles from HS
Bhalla (2002)	2000	65	GDI (Penn World Tables and WDI)	Ginis and quintiles from HS
Dikhanov and Ward (2001)	1999	68	National consumption (WDI)	Ginis and quintiles from HS
Dowrick and Akmal (2001)	1993	71	GDI	Ginis and quintiles from HS
Sutcliffe (2003)	2000	63	GDI (Maddison)	Ginis and quintiles from HS
Chotikapanich *et al.* (1997)	1990	65	GDI (Penn World Tables)	Ginis for HS

Note: HS = household survey; GDI = Gross Domestic Income; WDI = World Development Indicators (World Bank).

2.2.1 *What is income inequality?*

The OECD (2011) defines income inequality as an indicator which shows the distribution of resources across society. For the purposes of this study, income

inequality is an indicator which measures the magnitude of income differences between BRICS and G7 countries and BRICS and G7 groups, as per Concept 1 and Concept 2 inequality definitions. Milanovic (2006), a leading author on global income inequality, states that global inequality can be categorised into three categories.

1. Concept 1 inequality - Un-weighted inequality: refers to a rank of world income (for example, GDP per capita) and is un-weighted by population size.
2. Concept 2 inequality – Population weighted inequality: refers to a rank world inequality between mean incomes per country, weighted by population size.
3. Concept 3 inequality – Global inequality: refers to rank of all citizens income, irrespective of their citizenship country and is compared in a continuous scale.

Concept 1 inequality has been researched thoroughly (Milanovic, 2006) however, it is not a good measurement of income inequality between multiple groups, due to the impact of population size on income, as countries with bigger populations or faster economic growth rates will impact inequality calculations and trends (Capéau & Decoster, 2004; Milanovic, 2006). For example, a 10% increase in GDP or GNI per capita in China instead of South Africa will benefit many more people, and therefore have a greater impact on BRICS, due to China's population size.

Concept 2 inequality addresses the limitation of Concept 1 inequality by weighting a country's mean income by the country's population size. It is therefore a more accurate measure of inequality when analysing groups; however it assumes that each person in a country has the same mean income (Capéau & Decoster, 2004; Melchior, Telle, & Wiig, 2000; Milanovic, 2006; Schultz, 1998). (Milanovic, 2006; Schultz, 1998) have established that Concept 2 inequality represents the largest proportion of global income inequality (Concept 3 inequality), as inequality differences between countries represents approximately 66%-75% of Concept 3 inequality, depending on the inequality measure analysed. Further, Milanovic (2006)

states that concept 2 inequality is a suitable proxy for global inequality and movements of inequality over time. In addition, Milanovic (2002a) also concludes that the use of broad assumptions, will impact the precision of Concept 2 inequality, but it indicatively indicates direction and movement changes. Although this study focuses on relative differences between countries, the results of the study can also be used as proxy for global income inequality differences, if every individual in the country is assumed to have the same mean income (Milanovic, 2006). This assumption results in less accuracy, when comparing countries which have higher Gini coefficients (higher inter-country inequality).

The advantage of performing research on Concept 2 inequality is data is readily available from publicly accessible and trusted sources, such as the World Bank. Milanovic (2006) further states that Concept 2 inequality is a cost-effective means of calculating global income inequality because two data variables are required; mean income and population size. Further, global income inequality consists of inter-country inequality and inequality differences between countries.

Concept 3 inequality is the most ideal measure of global inequality as it ranks each individual in the world on a single scale relative to each other, however income information required to calculate concept 3 inequality needs to be obtained from household surveys across the World (Capéau & Decoster, 2004; Milanovic, 2006).

Household survey data across countries in the World are currently insufficient either because these surveys (1) do not exist, (2) are unreliable (Melchior et al., 2000), or (3) countries are opposed to releasing this information to researchers. Further, most household data has only become available since 1982 (Milanovic, 2002a).

Melchior et al. (2000); Milanovic (2006) state that concept 3 inequality calculations are increasingly more complicated than Concept 2 inequality due to the household

survey data collection prerequisite and data assumptions applied to derive data for missing or incomplete available data, which lead to skewed results. One of the major limitations of inequality research is the availability of data for the countries of study; in the 1980's data from Asia, the Soviet Union and Africa started to become available (Milanovic, 2006). Concept 3 inequality requires significant amounts of additional survey data, which should ideally collected in a manner which could generate comparisons. This report used Concept 2 inequality, as each country is a unit of measure and was analysed with the main purpose of understanding changes in income inequality between BRICS and G7 countries and BRICS and G7 groups. Concept 2 inequality has been used by Berry et al. (1983) and Schultz (1998) to track changed in income inequality over time, however it was used to understand global income inequality.

2.2.2 *Comparing Income inequality between countries over time*

GDP and GNI are measured based on a country's base currency and need to be converted into a common currency to enable comparisons, however simply applying an exchange rate to GDP or GNI will not suffice due to relative prices of goods and services of a country and exchange rate volatility. GDP and GNI will need to be adjusted using PPP as exchange rate fluctuations do not factor in living standard changes if consumption does not consist of imported goods and services (Melchior et al., 2000). PPP isolates price movements from exchange rate fluctuations, to determine relative price level (Dornbusch, 1985; OECD, 2005). Milanovic (2006) cautions that PPP may not accurately represent an entire country's population as PPP may vary by region and income distribution. However, because the focus of the study is on income differences between countries, PPP will be ideally suited for analysis. In support of this argument Dowrick and Akmal (2005) advocate PPP, as currency markets undervalue purchasing power of low income or low production countries, because real wages are low, resulting in cheap labour-intensive goods and services. The World Bank uses the International comparison program (ICP) to

compare economic activity across countries and time using a common currency and benchmark year (The_World_Bank_Group, 2015). Many authors (Bhalla, 2002; Dowrick & Akmal, 2005; Melchior et al., 2000; Milanovic, 2002b, 2005, 2012; Sala-i-Martin, 2002) have used PPP to make comparisons across countries. PPP ensure that a unit of currency in one country can buy the same amount of goods in another country. This paper used GDP PPP (constant 2011 international $) and GNI PPP (constant 2011 international $) as measures of country income.

2.3 BRICS and G7 countries definitions

Bhalla (2002) has performed an income inequality study comparing the developed and developing world; however this classification includes many countries, and loses emphasis on specific countries. This report focuses specifically on income inequality between BRICS and G7 countries and BRICS and G7 groups.

The Group (G8) countries consist of the United States, Japan, Russia, Germany, France, United Kingdom, Italy and Canada (BBC, 2013; Kokotsis & Daniels, 1999; Laub, 2014) and consist of some of the largest industrialised nations in the world which constitutes 50% of the World's GDP (Laub, 2014).

The BRICS consist of Brazil, Russia India and China and South Africa (Bildirici & Bakirtas, 2014; Padmanabhan, Sinha, Venkataraman, Ravi, & Joshi, 2015) and constitute almost 50% of the world's population (Marten et al., 2014).

Russia is included in both classifications and for the purpose of this study, Russia will be classified as part of BRICS, therefore the analysis is conducted against G7 and BRICS countries.

Goldman Sachs coined the term BRIC in 2001, in a paper which forecast global economic trends, as BRIC represented rapidly developing countries, which would by 2015, be as large as the richest economies in the world (BRICS, 2016a; Koba, 2011). South Africa was included in BRIC to form BRICS, because of its mineral wealth, being situated on the African continent, strong financial systems and markets and its historical transformation process BRICS (2016a; (BRICS, 2016b; Koba, 2011). Koba (2011) states that BRICS represents movement of economic power away from developed, G7 countries, to the developing countries.

The twelve countries examined in this paper represent a large portion of the World's population and income. In addition, the limited scope of countries selected, enable a more in-depth analysis of country movements and inequality movements of Brazil and South Africa, which will not be diluted in Latin American and African groupings respectively.

2.4 Changes in average income across BRICS and G7 countries

The first sub problem is to determine the changes in average income across BRICS and G7 countries from 1993 to 2013, using GDP per capita and GNI per capita.

2.4.1 *Changes in Concept 1 inequality*

The trends in income inequality vary by measure, if GDP per capita (Concept 1 inequality) is observed in isolation, a divergence in inequality is observed, however population weighted GDP per capita (Concept 2 inequality) displays a convergence of inequality (Dowrick & Akmal, 2005; Melchior et al., 2000; Milanovic, 2002a).

Milanovic (2012), in his most recent paper on income inequality, found that debt problems and rising interests rates caused a divergence in income between countries, using Concept 1 inequality. The main regions which caused the

divergence were Eastern Europe, Latin America and Africa. From 2001 to 2006, the income inequality divergence changed to a convergence however, Milanovic (2012) observed that income inequality is worse at the present time (2011), compared to the 1960's and 1970's.

Bhalla (2002) found that Africa and Latin America have been losing share of global income. As seen in table 3, from 1980 to 2000 Africa's Income per capita growth rate has decreased by 0.6 PPP dollars (1993) and Latin America' only increased by 0.1 PPP dollars (1993) while the world income growth rate increased by 2.7 PPP dollars (1993), the industrialised world income growth rate increased by 1.6 PPP dollars (1993), and China and India's income growth rates increased by 5.8 PPP dollars (1993).

Sala-i-Martin (2002) also observed low to negative growth rates of African countries, while Melchior et al. (2000) observed stagnant growth in Sub-Saharan Africa and Dowrick and Akmal (2005) observed stagnant income growth for Africa as a whole. In addition, to Sub-Sahara, inequality has also increased in Eastern Europe after 1980 (Melchior et al., 2000).

This research paper uncovers more BRICS and G7 country specific changes in income inequality.

Table 3 Per Capita Income Growth Rate by Region (Bhalla, 2002)

The direction and magnitude of inequality movements has major policy implications, it is hoped that this income inequality study between G7 and BRICS countries can introduce a new perspective into the on-going debate, on whether income inequality is increasing or decreasing.

	1960-1980	1980-2000	Change in Annual Growth Rate*
East Asia	2.9	6.1	3.27
South Asia	0.6	3.0	2.45
Asia	2.0	4.9	2.88
China & India	1.7	5.8	4.01
Sub-Saharan Africa	1.3	-0.6	-1.87
Middle East & North Africa	3.2	0.2	-3.06
Latin America	3.1	0.1	-3.05
Developing World	2.1	3.1	0.99
Developing World Excluding China & India	2.5	0.7	-1.82
Eastern Europe	4.0	-1.9	-5.91
Non-Industrialized World	2.3	2.8	0.52
Industrialized World	3.3	1.6	-1.72
World	**2.5**	**2.7**	**0.15**

*Arithmetic change in annual growth rates between the pre-globalization and globalization periods

Source: World Development Indicators, CD-ROMs, 1998, 2001; Maddison (2001); Penn World Tables, different years.

Notes:

1. For classification of regions, see Appendix III.
2. Nominal PPP data, 1993 base, has been converted into constant PPP, 1993 base, using the US GDP deflator, a practice followed in WDI, 1998.
3. Growth rates are in logarithmic terms. Regional averages are population-weighted means of individual country growth rates.

2.5 Changes in average income across BRICS and G7 groups

The second sub problem is to determine changes in income inequality across BRICS and G7 groups, using GDP per capita and GNI per capita. For example, the BRICS average income is up 12% from $ 453 to $ 507.

2.5.1 *Changes in Concept 2 inequality*

Although, Global income inequality has been studied over years, literature on income inequality of BRICS and G7 groups has been limited.

However, amongst population weighted GDP per capita studies, leading authors reach conflicting conclusions. Sala-i-Martin (2002) and Milanovic (2002a, 2002b) reach different conclusions on whether global income inequality is increasing or decreasing, as seen in Table 4.

Table 4 Gini and Theil indices for global inequality (Capéau & Decoster, 2004)

	Sala-i-Martin (2002a: 60-61, tables 1 and 2)			Milanovic (2002a: 78, table 19)		
	1988	1993	change	1988	1993	change
Gini						
Overall	0.627	0.615	↓	0.628	0.660	↑
Between (sub)countries	0.507	0.496	↓	0.551	0.578	↑
Within			↓	0.013	0.013	-
Overlap				0.064	0.068	↑
Theil						
Overall	0.767	0.729	↓	0.765	0.873	↑
Between (sub)countries	0.574	0.533	↓	0.571	0.649	↑
Within	0.193	0.196	↑	0.194	0.224	↑

Capéau and Decoster (2004) also confirmed the disparate conclusions and suggested that dataset differences between the two studies are the likely cause of differences, as Sala-i-Martin (2002) uses aggregate county data, while (Milanovic, 2002a, 2002b) breaks countries into urban and rural categories. Table 5, below examines key differences in the Sala-i-Martin (2002) and (Milanovic, 2002a, 2002b) research.

Table 5 Comparison between Sala-i-Martin (2002) and (Milanovic, 2002a, 2002b) research (Capéau & Decoster, 2004)

Data sources and coverage of Sala-i-Martin (2002a, b) and Milanovic (2002a, b)

	Sala-i-Martin	Milanovic
Time period	1970-1998	1988 and 1993
Observation unit	countries	countries, but rural/urban split up for – China, India, Bangladesh, and Indonesia in 1988 and 1993 – Pakistan in 1988
Number of units	125	91
% of world population	88% in 1998	84% in 1988 and 1993
Distributional information	Deininger and Squire (1996) and extension with World Development Indicators of the World Bank	household surveys
Number of datapoints	quintiles	varying, but ≥ 10; on average 10.8 in 1988 and 11.4 in 1993; 12 exceptions in 1988 (only quintiles)
Welfare concept	GDP per capita	income or expenditures (depending on the source)
Source	Penn World Tables of Heston, Summers and Aten (2001)	national household surveys collected by the author
Currency	real, 1996 PPP$	nominal PPP$

Capéau and Decoster (2004), in a study on global income inequality conclude that Sala-i-Martin (2002) and Milanovic (2002a, 2002b) agree that economic growth in China and India, has helped reduce Concept 2 inequality and state that differences in the direction of the movement of inequality, misses the burning issue that inequality levels are so high.

Schultz (1998) found that income inequality increased from 1960 to 1968 due to growing inter-country increases, in other words increasing Gini coefficients of countries; while global income inequality decreased in the mid 1970's to 1989. Dowrick and Akmal (2005) found that a decrease in income inequality is prevalent;

however a dramatic decrease is not evident. They further state that the world is getting richer, poverty is being reduced and the middle class is growing. In addition, they find that people living below the poverty line have decreased from 20% to 5% from 1970 to 1998 and given current trends, global income inequality will decrease over the next 20 years.

Using concept 2 inequality, Milanovic (2012) found that income inequality, excluding China, increased from 1952 to the year 2000 and then begun to decrease, mainly due to India's high growth rate. He also found the Concept 2 inequality (including China) decreased from 1952 to 2009.

Bhalla (2002) in his studies on income and consumption; examined changes in poor (bottom 30^{th} percentile), middle class (30^{th} to 80^{th} percentile) and rich segments (top 20^{th} percentile), of industrialised and developing nations. Bhalla (2002) categorised the developing world as a group and found that between 1980 and 2000, the poor had benefited significantly more from globalisation, in terms of income and consumption per capita than the non-poor, even if China and India were excluded from the developing world countries, globalisation was pro-poor and not just pro-poor for China and India, although China and India have been the largest beneficiaries.

Dowrick and Akmal (2005) found that inter-country inequality has increased marginally, but this does not impact global inequality significantly, while cross country income inequality has decreased, mainly due to China. Contrary to Bhalla (2002), they conclude that global income inequality declined over the last 20 years due to China's rapid GDP per capita growth, removing China reveals an slight increase in inequality.

Similarly to Dowrick and Akmal (2005) findings related to China's rapid growth, Bhalla (2002) found that the developing world, especially top 10^{th} percentile of Asia,

have significantly benefited relative to the industrialised middle class. Further, the developing world was growing faster between 1980 and 2002, compared to 1960 – 1980, while the industrialised world growth had decreased during the same period.

(Sala-i-Martin 2002; Schultz, 1998) found that Japan, regions in Europe and the United States of America have also been benefiting from a larger share of global income. Cornia and Kiiski (2001) cite Japan's relaxation of competition rules, to further increase inequality.

Jorgenson and Vu (2013) found that G20 economies (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, South Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States and the European Union) grow much faster than the global economy in total and face different challenges to economic growth.

O'Neill and Goldman (2001) predicted that BRIC (South Africa excluded) would continue to grow and contribute a larger share of output, relative to the rest of the world and become more important to international policy makers. Further, O'Neill and Goldman (2001) also predicted that BRIC countries would outgrow G7 countries.

Schultz (1998) concludes that the income growth in China skews world income inequality significantly, and if removed, world income inequality does not decrease and inequality has increased in Eastern Europe and Sub-Saharan African, especially since 1980.

Ogrean and Herciu (2000) conducted a study which examined changes in the global economy. The study compared BRICs (South Africa was excluded from the study) and G6 countries (Canada was excluded from the study). Ogrean and Herciu (2000) found that BRICs countries spanned large geographical areas, consisted of large

populations, low income levels and fast economic growth, which lead to a rapidly growing middle class. However, beside these factors, all the countries were heterogeneous and faced unique opportunities and challenges.

Jorgenson and Vu (2013) found that the G7 countries' recovery from the 2008-2009 recession was slow and severely impacted global trade, however by 2013 trade had increased again. Further, total factor productivity growth, which arises from capital and labour improvements, for G7 economies was negative during 2005–2010, except for Japan and Germany. China and India's capital input contributed highly to total factor productivity growth during the same period.

Further, Jorgenson and Vu (2013) predict that there will be a shift of contribution from G7 economies to China and India. China and India's growth will outpace the global economy and China's growth will be slower than the past 20 years, while India's growth will accelerate.

Pogge (2008) states the China's growth has mainly been driven by exports at the expense of other poorer countries.

2.6 Nature of differences between BRICS and G7 Economies

2.6.1 *Composition of GDP, GNI and Population*

GDP is measured by a country's income or expenditure and both methods of measurement lead to the same result, as income is one party's expenditure and vice versa, according to the circular flow diagram, as seen in Figure 1; as a result GDP is equal to income, which is equal to production, which is equal to spending (R. Cooper & John, 2015; Van Rensburg 2011). For example, if a person (household, in economic terms) buys a television, the household will have purchased a television which is household expenditure which contributes to GDP in the expenditure view. If

the income view is used, the firms which sold the television would receive an income from selling the television, which contributes to GDP in the income view.

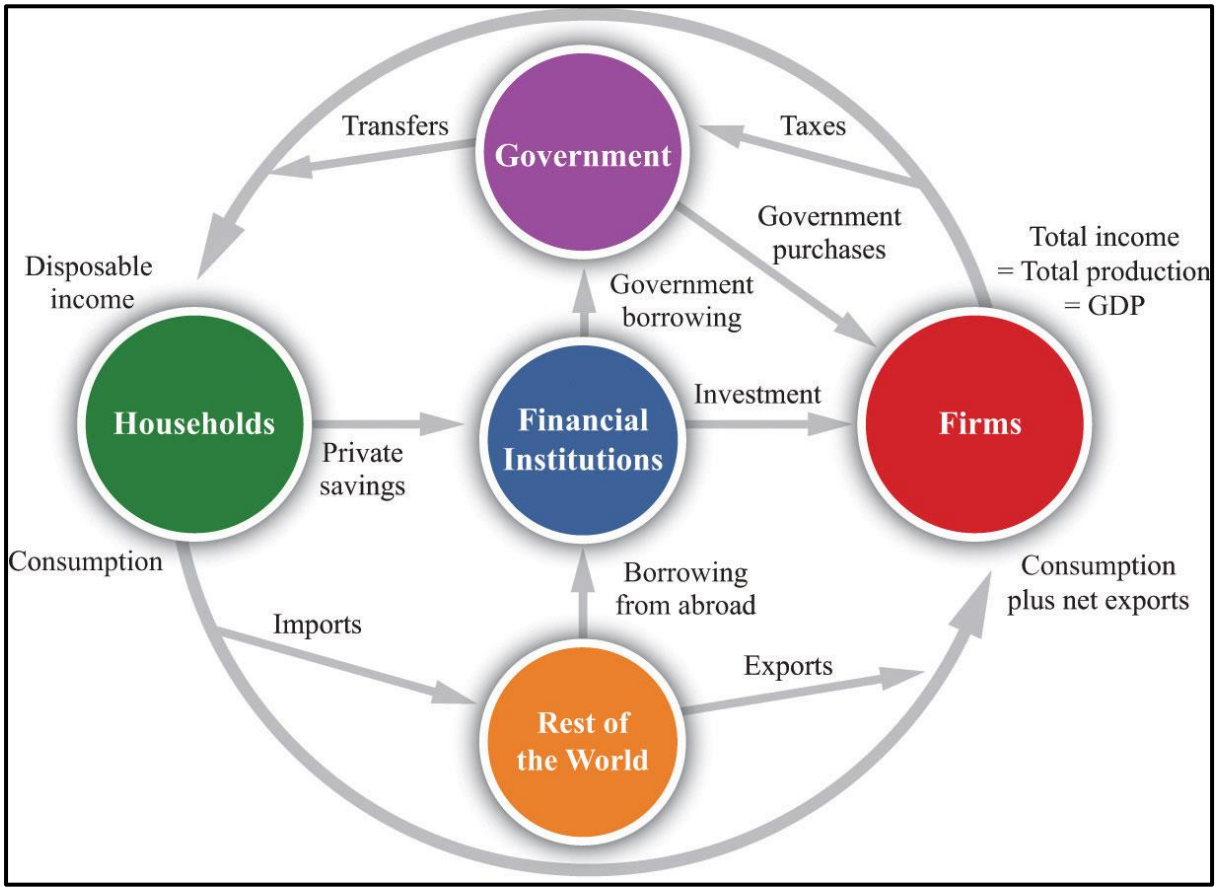


Figure 1: Circular flow diagram (R. Cooper & John, 2015)

Household spending is funded by earnings from firms, which receive income from goods and services sold to households. In addition, households ultimately own firms, thus profits which firms make are ultimately transferred back to households. The complete circular flow diagram contains financial institutions and foreign sector (rest of the world, in the diagram above) and government; and all inflows match all the outflows, similarly to the example provided above with households and firms (R. Cooper & John, 2015; Van Rensburg, 2011).

R. Cooper and John (2015) defines the circular flows from the diagram above as follows:

1. Consumption is all expenditure of final goods and services by households.
2. Investment is all expenditure of final goods and services that are used to increase output.
3. Government purchases are all expenditure of final goods and services by Government.
4. Net exports are all exports less imports by a country and the rest of the world.

R. Cooper and John (2015) states the circular flow diagram can be summarised as follows: The flows of the

1. Households

Income + transfers from government − taxes = consumption + savings

2. Government

Government purchases = tax revenues – transfers to households + government borrowing from financial institutions

3. Financial Services

Investments in firms + government borrowing = private savings + borrowing from other countries.

4. Foreign Sector

Borrowing from abroad = imports − exports.

If we export more than we import, then—on net—we are lending to the rest of the world, and there is a flow of dollars from the financial markets to the rest of the world.

5. Firms

Production = consumption + investment + government purchases + net exports.

A country's income can be measured in two main ways: Gross Domestic Product (GDP) and Gross National Income (GNI). The World Bank (2014) defines GDP as the gross value created by a country including product taxes, less any subsidies. Depreciation and depletion of natural resources are omitted from GDP calculations. PPP adjusts for currency differences between countries.

GNI (Gross National Income) consists of (1) economic value added local producers adjusted for taxes and (2) income from abroad (WorldBank, 2014). PPP adjusts for currency differences between countries.

The main difference between GDP and GNI is that GNI also consists of income earned from abroad, less income earned by foreigners, therefore income earned by foreigners is counted as part of their citizenship country's income. For cross country comparisons of income, Pogge (2008) recommends using GNI over GDP, for a more accurate reflection of a country's income.

GDP and GNI per capita will also vary depending on the population. The population growth rate, death rate specifically impacts the population over time. In addition, the unemployment rate determines the economically active population who contribute to GNI and GDP.

Jorgenson and Vu (2013) state that the economic growth can increase either because of: (1) Replication through labour or capital investment increases which results in growth in total factor productivity; or (2) Innovation through changes in technology which results in growth in total factor productivity.

2.7 Conclusion of the Literature Review

There are three main concepts of income inequality. Concept 1 inequality is used to compare income inequality across countries and the authors agree that there has been a divergence in income inequality over time. Concept 2 inequality is used widely by researchers to approximate Concept 3 inequality, because of the cost and difficulty in obtaining household data to perform studies on Concept 3 inequality. Concept 2 inequality is largely acknowledged and used as a basis for Concept 3 inequality calculations; however it is used in this paper to determine income inequality differences between BRICS and G7 groups. The direction of inequality movement is largely contended amongst authors, with methodological differences being cited as the cause of disparity. Further, a country's income is determined by the circular flow in an economy, and GNI is different to GDP, as it is the actual income flowing to a country's citizens. Lastly, geographical areas, population size, income levels, economic growth, recession, percentage differences in labour and capital expenditure and percentage differences in exports are major factors attributed to changes in income across countries.

2.7.1 *Research Question 1:*

How has average income across BRICS and G7 countries changed from 1993 to 2013?

2.7.2 *Research Question 2:*

How has population-weighted average income across BRICS and G7 groups changed from 1993 to 2013?

3. RESEARCH METHODOLOGY

This chapter outlines the research methodology that was used to answer questions in Chapter 2. The chapter begins with section 3.1 which provides an explanation of the research methodology used for the research. Thereafter, section 3.2 explores the research design, followed by Section 3.3 which defines the population, sample and the sampling methodology used in the research. Section 3.4 provides a short overview of the research instrument utilised, and Section 3.5 and 3.6 explain the procedure for data collection and how the data was analysed and interpreted respectively. The chapter is concluded with a discussion on validity and reliability of the study. **Research methodology**

Quantitative research is the accurate calculation of opinion, information or behaviour and used is used to describe, explain or forecast (D. R. Cooper & Schindler, 2006). The objective of quantitative research is to quantify data and frequently uses statistical analysis (Malhotra, 2010).

Qualitative research relies on techniques that are used to describe, interpret and decipher certain phenomena (D. R. Cooper & Schindler, 2006). The qualitative research is used in exploratory studies (Creswell, 2013), which will help explain some of the factors influencing income changes per capita.

Quantitative research was used to answer research question 1 and research question 2, therefore quantitative methodology is used for the research.

3.2 Research Design

Data for the research was accessed from the World Bank's free and open data repository. The World Bank is a credible data source for country income and has

been used by Bhalla (2002) for mean country income in research examining income inequality differences. The use of a reputable data sources is required for the credibility of results.

The World Bank's data repository contains data on G7 and BRICS economies for the period of the study, 1993-2013. In addition, because the data was obtained from a single source, data collection biases are mitigated and comparisons can be made across different countries and over time. In addition, the income data (GDP and GNI) from the world has already been adjusted for PPP, which further supports cross country comparisons and time based comparisons, which are recommended by various researchers (Dornbusch, 1985; Dowrick & Akmal, 2005; Melchior et al., 2000; Milanovic, 2006).

One limitation of the World Bank data is that GNI per capita data for Russia is only available from 1991, however as the research paper's focus was from 1993 to 2013, this did not impact the results of the research.

Descriptive research design aims to describe characteristics or functions of the subject analysed and requires prior formulation of specific hypotheses, while a longitudinal research design involves analysing a constant sample over multiple repetitions over time, which when viewed together illustrate a situation's developments over time (Malhotra, 2010).

The research design for the study was therefore descriptive as it described income inequality changes across G7 and BRICS countries and BRICS and G7 groups. It was also longitudinal as it was used to analyse the income inequality changes over a twenty year period.

3.3 Population and sample

3.3.1 *Population*

The population was from the 195 countries listed in the World Bank's database from 1993-2013, which have GDP, GNI and population data in PPP (constant 2011 international $).

3.3.2 *Sample and sampling method*

The sample included G7 and BRICS economies, from 1993 – 2013; a total of 12 data points was analysed. Each data point consisted of GNI per Capita in PPP U.S Dollar and Population size. Malhotra (2010) states that non-probability sampling refers to sampling which uses a researcher's judgement, rather than using probability to determine sample, in addition, there are four types of non-probability sampling: (1) Convenience sampling, (2) Judgmental sampling, (3) Quota Sampling and Snowball sampling; judgemental sampling occurs when the research selects the sample of use, based on their judgement.

Judgement sampling was used to select countries of interest, specifically G7 and BRICS economies, due to the limited objectives of the research to focus on G7 and BRICS economies. In addition, although the sample consists of countries which make up over 50% of GDP and 50% (Laub, 2014; Marten et al., 2014) of the world's population, generalisations to the developed and developing world were not made as BRICS and G7 do not represent the developing and developed world respectively, as, although the countries are part of their respective groups, the countries experienced above average economic growth within the groups and in addition, the intention of the research is not to generalise the findings to the developed and developing world.

The time period selected, 1993 – 2013, for analysis, represents a 20 year time period. In addition, the World Bank only captures Russian GNI data from 1991 onwards and GDP data from 1989 onwards. Based on the minimum of 5 years benchmark set by Milanovic (2002b), the 20 year horizon provided sufficient information to observe changes over time. Table 6 summaries the profile of countries used in the study.

Table 6: Profile of countries (by size of GNI per Capita)

Country	Country classification	Period sampled
United States of America	G7	1993-2013
United Kingdom	G7	1993-2013
Japan	G7	1993-2013
Canada	G7	1993-2013
Germany	G7	1993-2013
France	G7	1993-2013
Italy	G7	1993-2013
Brazil	BRICS	1993-2013
Russia	BRICS	1993-2013
India	BRICS	1993-2013
China	BRICS	1993-2013
South Africa	BRICS	1993-2013

3.4 The research instrument

The GDP and GNI per capita in PPP U.S Dollars and population size was used to derive GDP per Capita and GNI per capita to compare changes in average income per capita across countries over time, as per approaches used by several authors (Bhalla, 2002; Bourguignon & Morrisson, 2002; Dowrick & Akmal, 2005; Sala-i-Martin, 2002). This enabled a quantitative analysis to be performed using frequency distributions, percentage distributions and descriptive statistics. In addition, academic literature helped describe the changes in income across BRICS and G7 countries and BRICS and G7 groups.

3.5 Procedure for data collection

Data was extracted from the World Bank's GDP PPP (constant 2011 international $), GNI PPP (constant 2011 international $) and Population databases. In addition, data on household consumption breakdowns, government expenditure, firm expenditure, net exports and foreign sector expenditure is available from the World Bank's data repository. The dataset contained data for other countries and periods which was not in scope for this study. These records were removed from the dataset to obtain information relevant for G7 and BRICS economies from 1993 to 2013. The GDP per capita, GNI per capita and population database each had 12 data points over a 20 year period. These databases were combined by linking on country and year to obtain the final dataset for analysis.

3.6 Data analysis and interpretation

The Concept 2 inequality methodology is the simplest and most cost effective method of capturing income inequality (Milanovic, 2006) and has been used as a basis for inequality studies by authors (Berry et al., 1983; Bhalla, 2002; Milanovic, 2006; Sala-i-Martin, 2002; Schultz, 1998).

Academic literature describing the nature of differences helps explain the reasons for changes in income across BRICS and G7 countries and BRICS and G7 groups.

3.6.1 Descriptive Statistics

Descriptive statistics of each country's *GDP per Capita, GNI per Capita* and *Population* for the years 1993 to 2013 was performed to determine percentage distributions.

3.6.1.1. Deriving income per capita

3.6.1.1.1. Equation 1:

Income per capita of country *iy* = Income of country *iy* / Population of country *iy*

Where:

Income of country *i* = GDP PPP (constant 2011 international $) or GNI PPP (constant 2011 international $) in a year

Population of country *i* = Population in a year

3.6.1.2. Percentage Changes:

The rate of change for *GNI per Capita* and *Population* was calculated using the following formula:

3.6.1.2.1. Equation 2:

% Change GNIi = (GNIy2 – GNI1y1)/GNIy2

Where:

GNIi = GNI per capita of country *i*

GNIi-y1 = GNI per capita of country *i* in year 1

GNIi-y2 = GNI per capita of country *i* in year 2

3.6.1.2.2. Equation 3:

% Change GDPi = (GDPy2 – GDP1y1)/GDPy2

Where:

GDPi = GDP per capita of country *i*

GDPi-y1 = GDP per capita of country *i* in year 1

GDPi-y2 = GDP per capita of country *i* in year 2

3.6.1.2.3. Equation 4:

% Change Pi = (Py2 – Py1)/Py2

Where:

Pi = Population of country *i*

Pi-y1 = Population of country *i* in year y1

Pi-y2 = Population of country *i* in year y2

3.6.1.2.4. Equation 5:

% Change GNIj = (GNIy2 – GNI1y1)/GNIy2

Where:

GNIj = GNI per capita of BRICS and G7

$GNI_{j\text{-}y1}$ = GNI per capita BRICS and G7 in year 1

$GNI_{j\text{-}y2}$ = GNI per capita BRICS and G7 in year 2

3.6.1.2.5. Equation 6:

% Change GDPj = $(GDP_{y2} – GDP_{1y1})/GDP_{y2}$

Where:

GDPj = GDP per capita of country *i*

$GDP_{j\text{-}y1}$ = GDP per capita BRICS and G7 in year 1

$GDP_{j\text{-}y2}$ = GDP per capita BRICS and G7 in year 2

3.6.1.2.6. Equation 7:

% Change Pj = $(P_{y2} – P_{y1})/P_{y2}$

Where:

Pj = Population of BRICS and G7

$P_{j\text{-}y1}$ = Population of BRICS and G7 in year y1

$P_{j\text{-}y2}$ = Population of BRICS and G7 in year y2

The results from Equation 2, Equation 3 and Equation 4 were then tabulated to indicate changes in *GDP per Capita, GDP per Capita* and *Population* sizes over time. In Chapter 5, the results of Equation 2, Equation 3 and Equation 4 were compared to Equation 5, Equation 6 and Equation 7 respectively to compare individual countries with BRICS and G7, as a group.

3.6.1.3. b.Percentage change of GNI per capita and GDP per capita per group

To examine percentage changes in the *GNI per capita and GDP per capita for BRICS and G7 groups,* the following steps were used:

Step 1: Obtain *a Population weighting for each group (BRICS or G7) per year*. This was obtained using the following formula:

3.6.1.3.1. Equation 8:

Y_i = X_i/X

Where:

Y_i = Population weight per year for country *i*

X_i = Country Population Size in a year

X= Total Group Population in a year

Step 2: Derive the *GNI per capita and GDP per capita for each group (BRICS or G7)*. This was obtained using the following formula:

3.6.1.3.2. Equation 9:

$$\mathbf{Zi} = Yi^{*} GNIi + Yi_{2}^{*} GNIi_{2} + Yi_{3}^{*} GNIi_{3....}$$

Where:

Zi = Population weighted GNI per Capita for group *i*

Yi = Population weighting per year for country *i*

GNIi = GNI per capita of country *i*

3.6.1.3.3. Equation 10:

$$\mathbf{Vi} = Yi^{*} GDPi + Yi_{2}^{*} GDPi_{2} + Yi_{3}^{*} GDPi_{3....}$$

Where:

Vi = Population weighted GDP per Capita for group *i*

Yi = Population weighting per year for country *i*

GDPi = GDP per capita of country *i*

Step 4: The *Population weighted* GDP and *GDP per capita per year* was then populated into a table by group and year.

3.7 Limitations of the study

Concept 2 inequality represents income inequality between countries and accounts for approximately 66%-75% of global income inequality (Concept 3 inequality, income inequality amongst the world's individuals), while inter-country inequality makes up the remaining 25-34%. Concept 2 inequality cannot accurately be generalised into Concept 3 inequality, however Milanovic (2006) suggests, that Concept 2 inequality can be used as a proxy for concept 3 inequality, although this is not the intention of the research.

Judgemental sampling was used to select BRICS and G7 groups for this study. BRICS and G7 are not representative samples of the developing and developed groups of countries, and therefore generalisations regarding the developing and developed World cannot be made. Judgemental sampling was used to limit the scope and focus on the researcher's countries of interest, as in many studies, the inequality changes of South Africa and Brazil are diluted and skewed, as these countries are usually observed under a regional classification, such as Africa or Latin America (Brazil) and not on a country basis.

Following the Five Capitals Framework from ForumOfTheFuture (2015), there are five capitals, namely, natural, human, social, manufactured and financial capital. Inequality can represent any unequal allocation of capital. Inequality amongst the other capitals; such as natural, human, social and manufactured capital is not covered in this study. In addition, income inequality is only one aspect of financial inequality; other types of financial inequality, such as access to credit exist.

Income is a means to access resources and knowledge therefore income inequality is a leading indicator for other inequality measures and a proxy for inequality (Inequality across the five capitals); however it is important to be cognisant of the complex and multivariate nature of inequality.

3.8 Validity and reliability

Validity is an indicator to determine whether a measure sufficiently represents the underlying construct, or does it measure what it was intended to quantify (Bhattacherjee, 2012). This section discusses the reliability and validity of the study.

3.8.1 *External validity*

External validity occurs when a underlying association can be generalised across time, people or situations (D. R. Cooper & Schindler, 2006).

For this paper, the research was gathered from the World Bank databases for BRICS and G7 countries, therefore the findings cannot be generalised to the rest of the countries in the world. In addition, BRICS and G7 countries are not representative of developing and developed nations respectively, again generalisations cannot be made.

Due to economic cycles and the multivariate nature of GDP and GDI data, generalisations of the paper over time for BRICS and G7 countries and BRICS and G7 groups must be used with caution.

Concept 1 and Concept 2 inequality can be generalised to other countries and groups; however Concept 1 inequality is preferred when comparing individual countries and Concept 2 inequality is preferred when comparing groups, due to

population size bias, which can skew the group results (Berry et al., 1983; Bhalla, 2002; Milanovic, 2006; Sala-i-Martin, 2002; Schultz, 1998).

3.8.2 *Internal validity*

The data is internally valid as GDP per capita and GNI per capita are widely generic metrics used globally. In addition, the data was obtained from a reputable, transparent public source.

3.8.3 *Reliability*

Reliability refers to the consistency and dependability of a measure and high reliability occurs when a measure is used multiple times and a consistent outcome is produced (Bhattacherjee, 2012). The data is reliable research methodology and has been utilised by many authors in similar studies (Berry et al., 1983; Bhalla, 2002; Milanovic, 2006; Sala-i-Martin, 2002; Schultz, 1998); data has been sourced from a reputable single database, which had previously been used for published journals by reputable authors in income inequality studies (Bhalla, 2002; Milanovic, 2006). If the same methodology is applied to the data, consistent result is obtained.

4. PRESENTATION OF RESULTS

4.1 Introduction

This section presents the results of the methodologies explained in chapter 3. Firstly the changes in GNI per capita and GDP per capita (Concept 1 inequality), are presented for each BRICS and G7 country; followed by population weighted GDP and GNI per capita (Concept 2 inequality) for BRICS and G7 groups.

4.2 Results pertaining to Research Question 1

Figure 2 to Figure 13, show GDP per capita, percentage change in GDP per capita, GNI per capita and percentage change in GNI per capita from 1993 to 2013. The data supporting these graphs are Table 51 to Table 62 in Appendix A.

4.2.1 *Brazil*

As seen in Figure 2 from 1993 to 2013, GDP per capita increased 47% from 10 360 to 15 222. GNI per capita increased by 48% from 10 115 to 14 996.

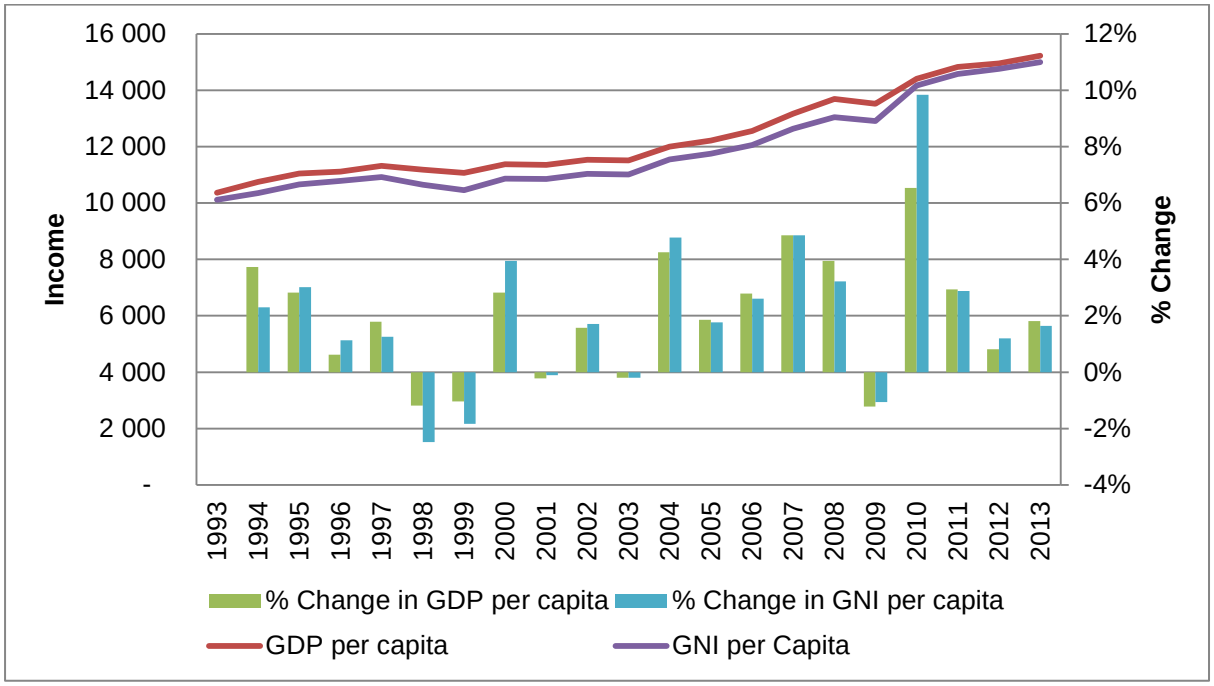


Figure 2: Brazil GDP and GNI and growth year on year.

4.2.2 *Canada*

As seen in Figure 3, from 1993 to 2013, GDP per capita increased 39% from 30 424 to 42 213. GNI per capita increased by 41% from 29 432 to 41 605.

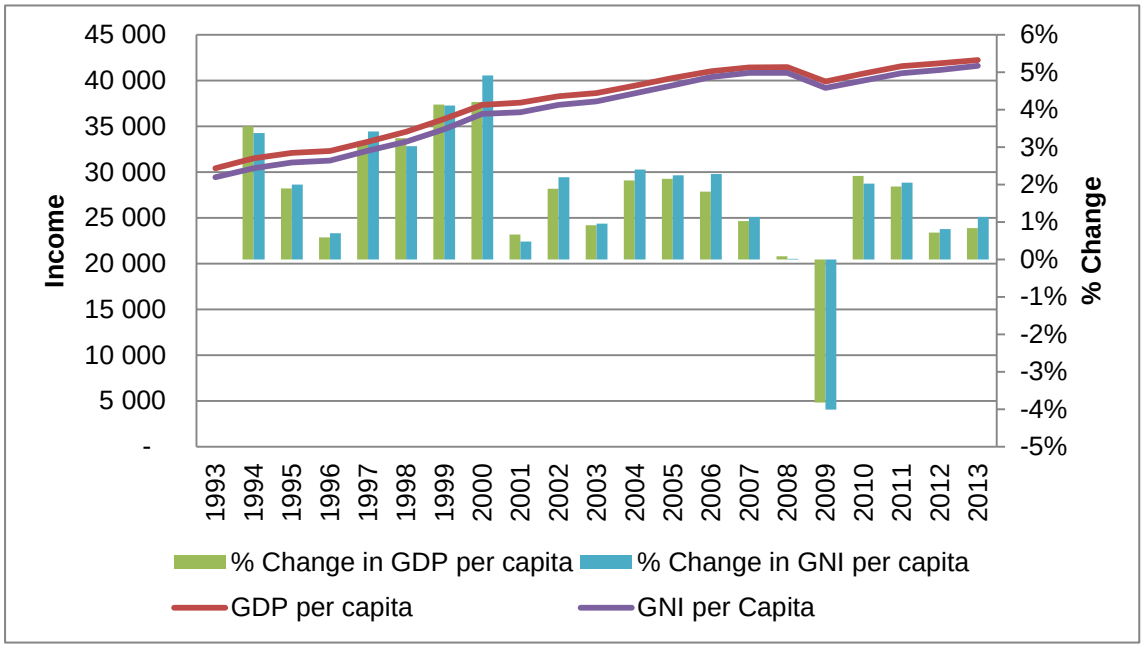


Figure 3: Canada GDP and GNI per Capita and growth year on year.

4.2.3 *China*

As seen in Figure 4, from 1993 to 2013, GDP per capita increased 468% from 2 078 to 11 805. GNI per capita increased by 465% from 2 073 to 11 706.

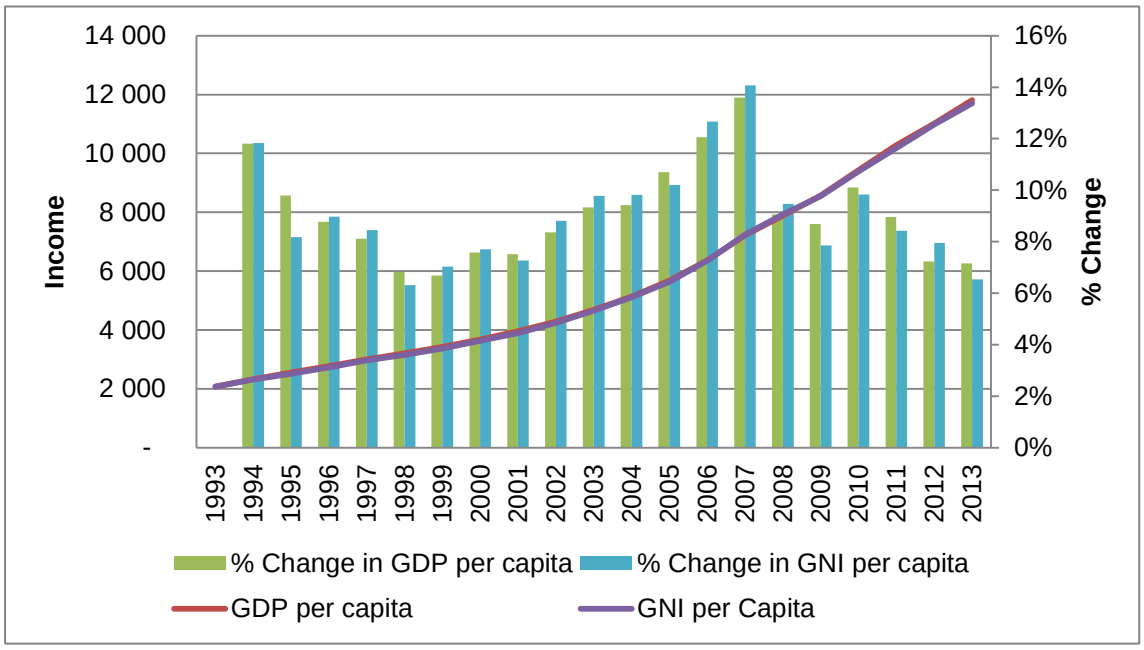


Figure 4: China GDP and GNI per Capita and growth year on year.

4.2.4 *France*

As seen in Figure 5, from 1993 to 2013, GDP per capita increased 26% from 29 719 to 37 306. GNI per capita increased by 27% from 29 933 to 37 893.

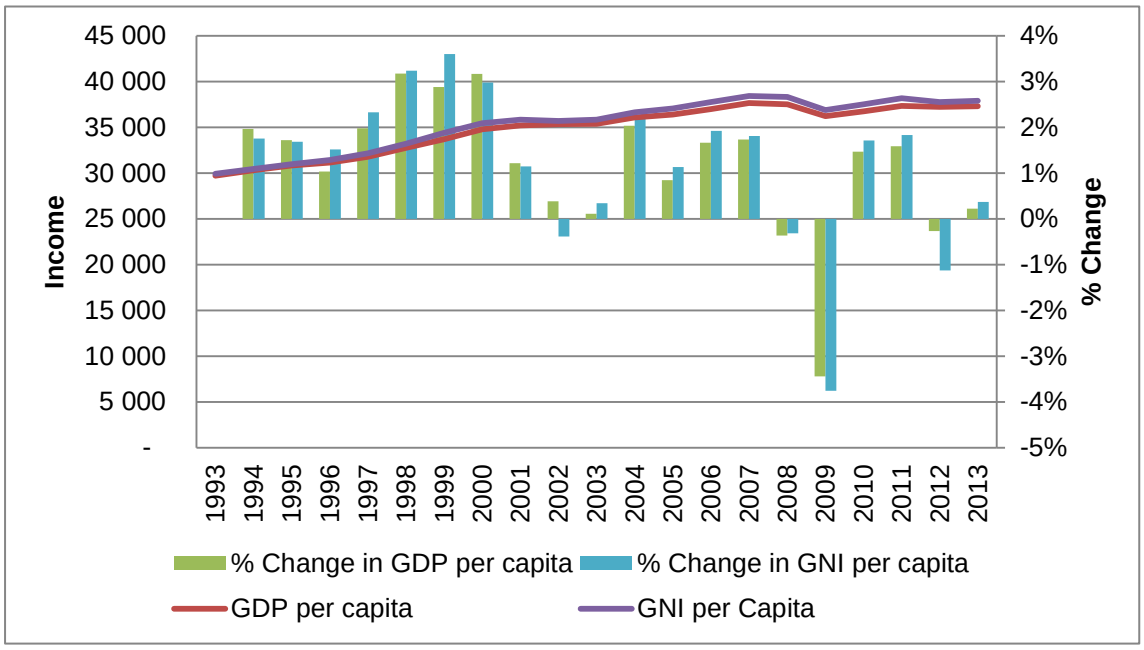


Figure 5: France GDP and GNI per Capita and growth year on year.

4.2.5 *Germany*

As seen in Figure 6, from 1993 to 2013, GDP per capita increased 32% from 32 682 to 43 046. GNI per capita increased by 34% from 32 922 to 43 984.

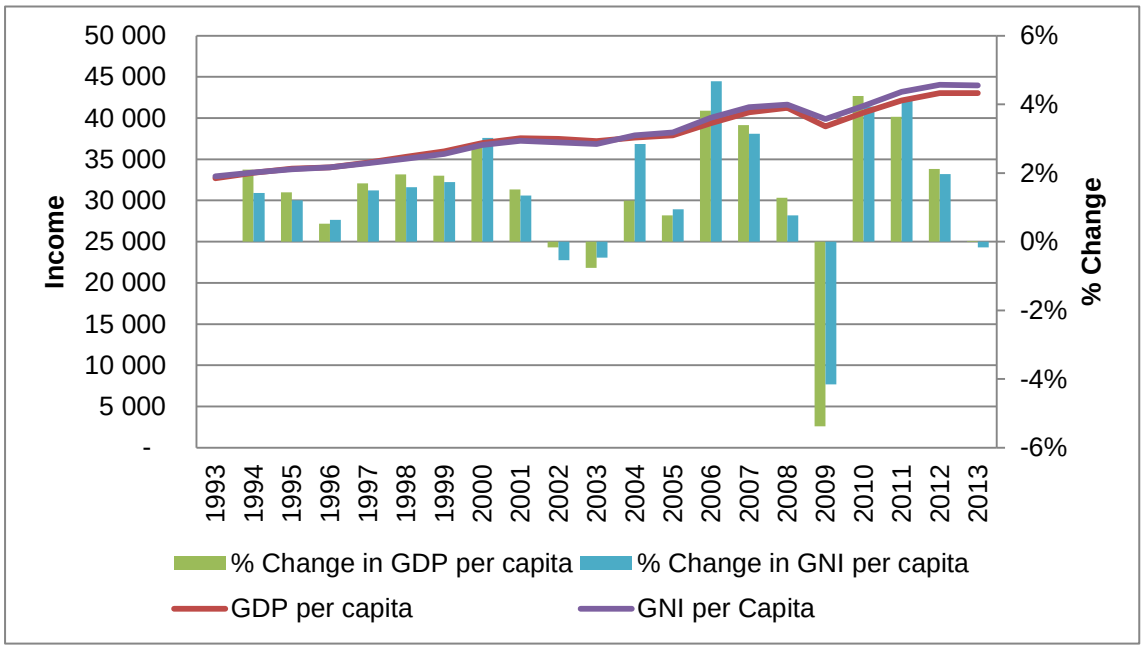


Figure 6: Germany GDP and GNI per Capita and growth year on year.

4.2.6 *India*

As seen in Figure 7, from 1993 to 2013, GDP per capita increased 175% from 1 865 to 5 132. GNI per capita increased by 176% from 1 839 to 5 069.

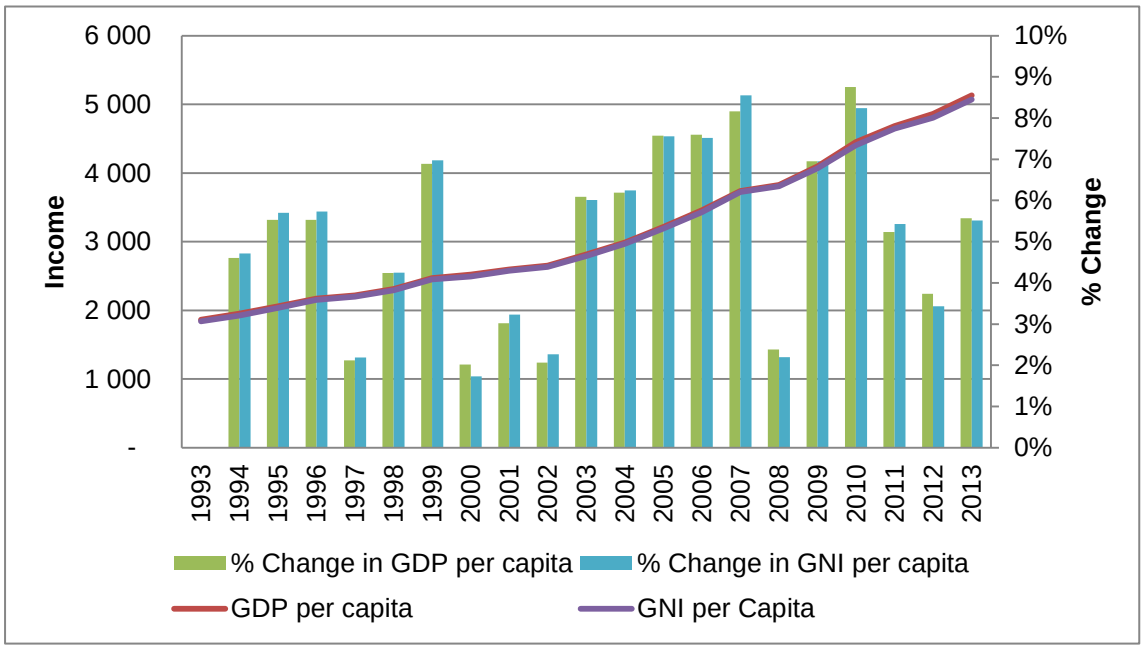


Figure 7: India GDP and GNI per Capita and growth year on year.

4.2.7 *Italy*

As seen in Figure 8, from 1993 to 2013, GDP per capita increased 8% from 31 149 to 33 794. GNI per capita increased by 10% from 30 712 to 33 706.

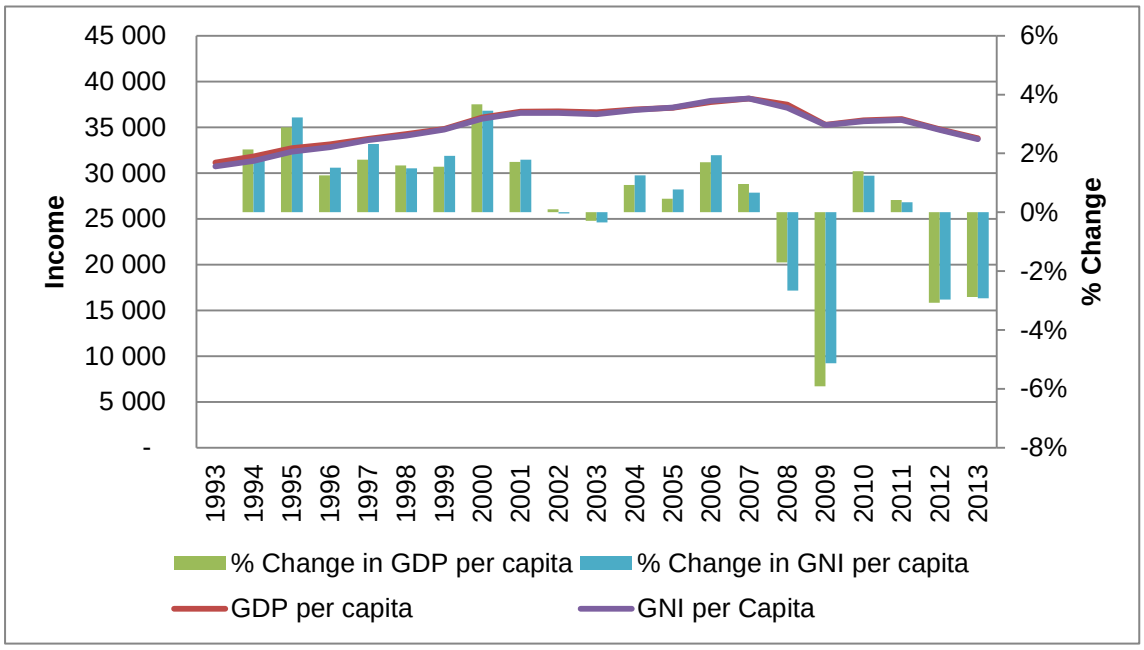


Figure 8: Italy GDP and GNI per Capita and growth year on year.

4.2.8 *Japan*

As seen in Figure 9, from 1993 to 2013, GDP per capita increased 16% from 30 587 to 35 614. GNI per capita increased by 20% from 30 875 to 36 910.

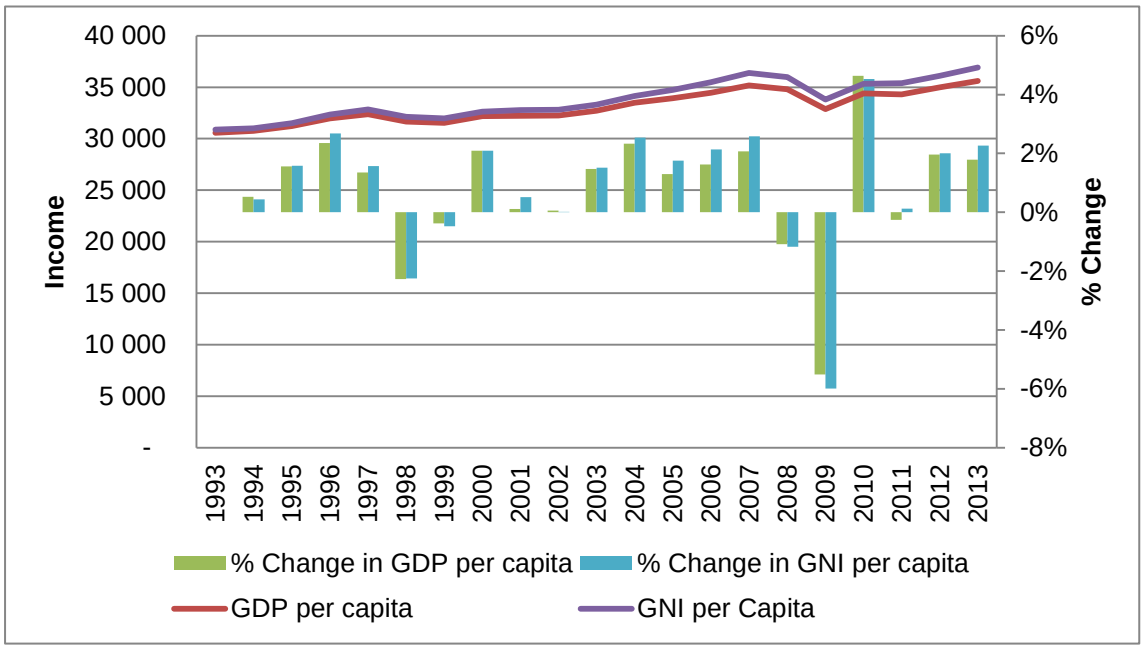


Figure 9: Japan GDP and GNI per Capita and growth year on year.

4.2.9 *Russia*

As seen in Figure 10, from 1993 to 2013, GDP per capita increased 65% from 14 320 to 23 561. GNI per capita increased by 58% from 14 282 to 22 611.

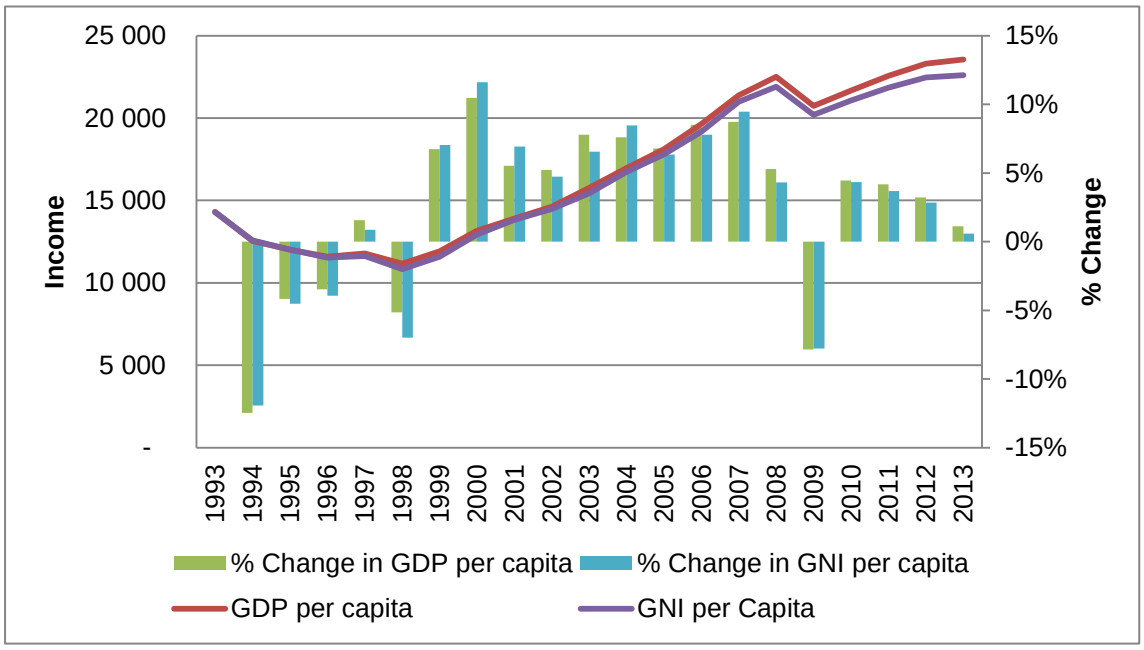


Figure 10: Russia GDP and GNI per Capita and growth year on year.

4.2.10 *South Africa*

As seen in Figure 11, from 1993 to 2013, GDP per capita increased 30% from 9 546 to 12 454. GNI per capita increased by 29% from 9 372 to 12 134..

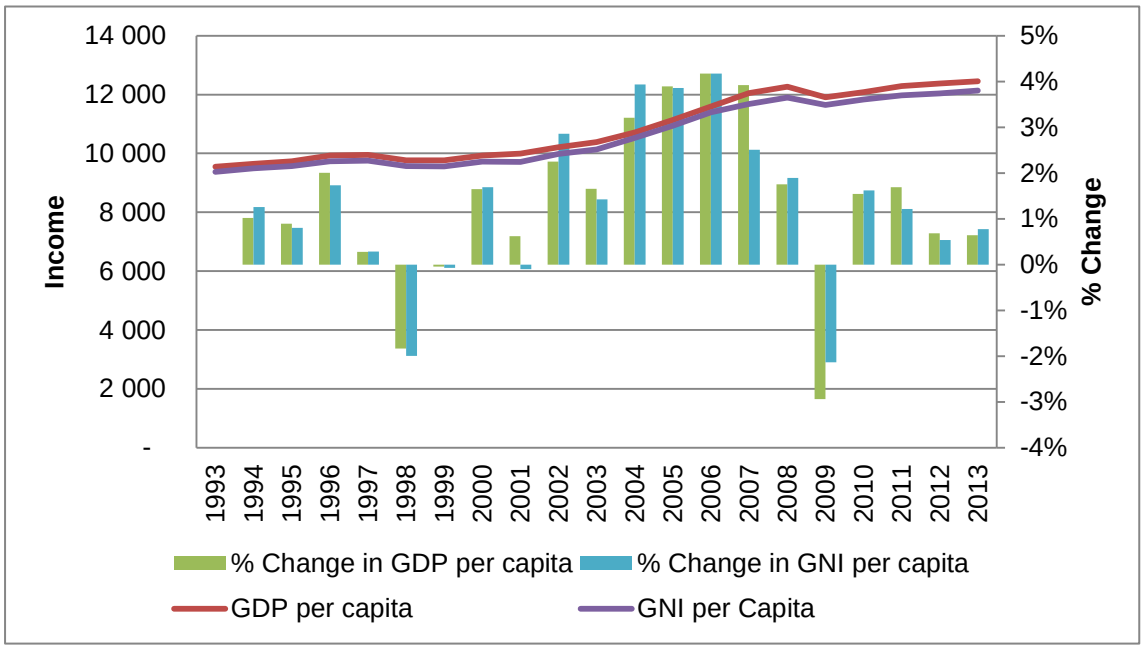


Figure 11: South Africa GDP and GNI per Capita and growth year on year.

4.2.11 *United Kingdom*

As seen in Figure 12, from 1993 to 2013, GDP per capita increased 42% from 26 261 to 37 321. GNI per capita increased by 41% from 26 237 to 36 959.

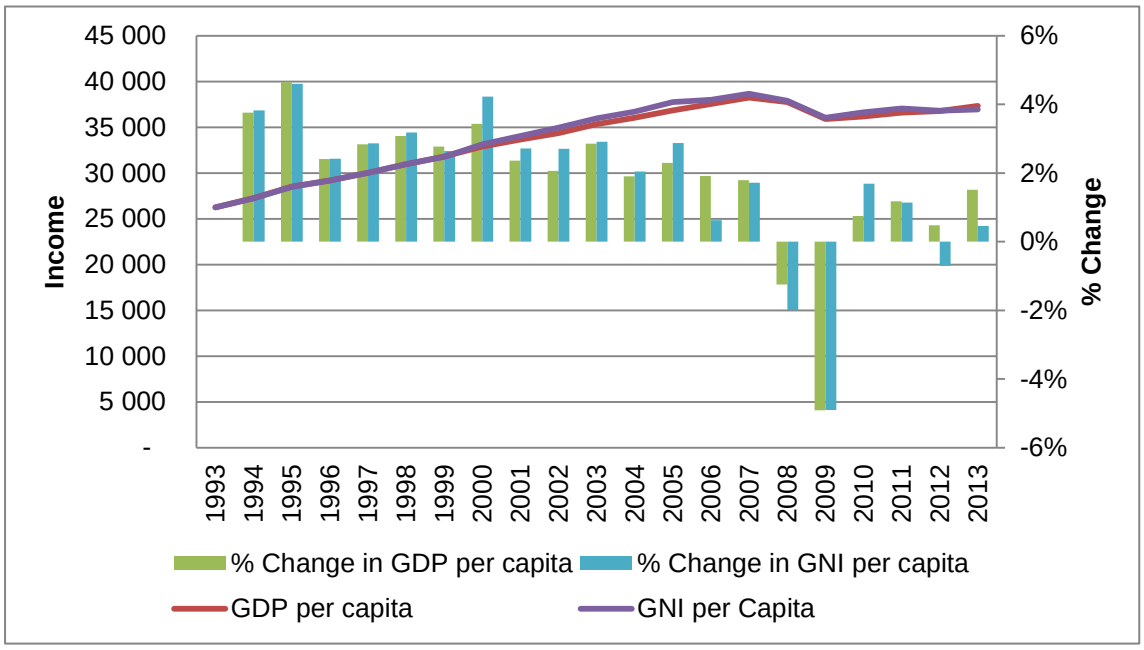


Figure 12: UK GDP and GNI per Capita and growth year on year.

4.2.12 *United States*

As seen in Figure 13, from 1993 to 2013, GDP per capita increased 36% from 37 844 to 51 282. GNI per capita increased by 37% from 38 114 to 52 176.

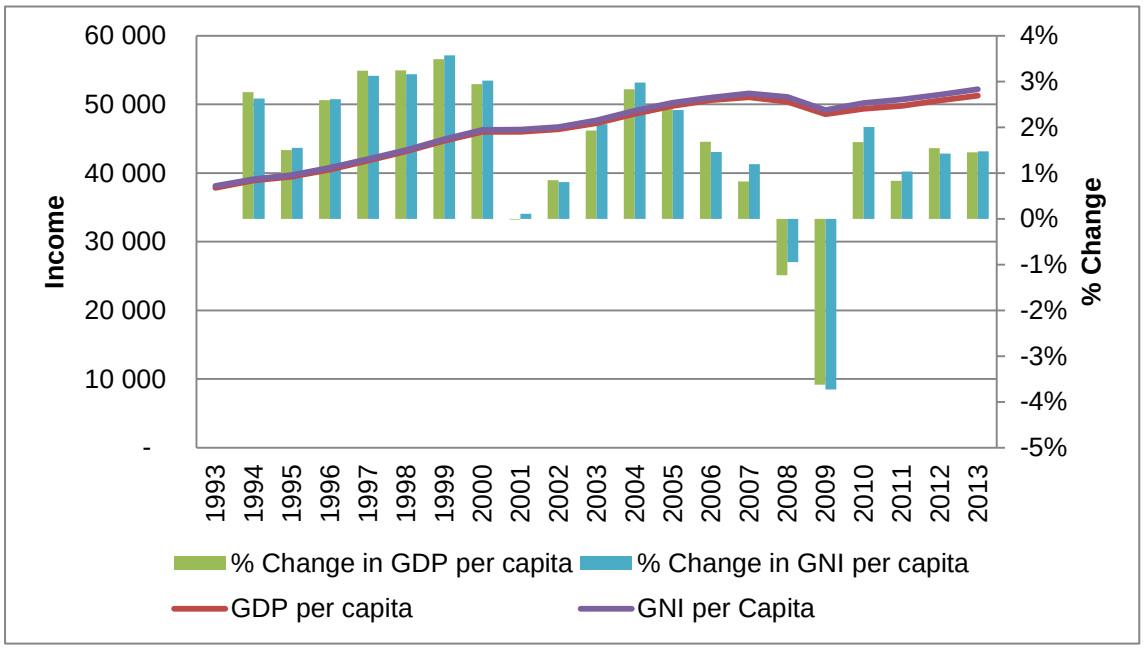


Figure 13: USA GDP and GNI per Capita and growth year on year.

4.3 Results pertaining to Research Question 2

In this section, GDP and GNI are categorised in groups, namely BRICS and G7 and each country's GDP and GNI is population weighted by the respective country's population size. Table 7 and Table 8 as well as Figure 14 and Figure 15; display the population weighted: GDP per capita, percentage change in GDP per capita, GNI per capita and percentage change in GNI per capita from 1993 to 2013 for BRICS and G7 groups, ranked in alphabetical order. The population weighted GDP per capita and GNI per capita for the year 1993 is 0%, as 1993 is the based year and growth from the previous year cannot be calculated. Under each table, the values

from the table are then represented in a graph, with the year in the horizontal axis and income (GNI per capita and GDP capita) in the primary vertical axis and the percentage change income represented in the secondary axis.

Table 7: BRICS and G7 GDP per Capita and growth year on year.

Year	GDP per capita C2		% Change in GDP per capita	
	BRICS	G7	BRICS	G7
1993	3 389	33 255	0%	0%
1994	3 449	34 033	9%	17%
1995	3 582	34 683	15%	16%
1996	3 709	35 390	13%	11%
1997	3 851	36 296	14%	16%
1998	3 932	37 060	3%	14%
1999	4 124	38 006	19%	16%
2000	4 350	39 152	25%	22%
2001	4 540	39 403	16%	8%
2002	4 761	39 677	19%	5%
2003	5 062	40 200	25%	6%
2004	5 425	41 136	31%	13%
2005	5 838	41 891	31%	10%
2006	6 347	42 717	35%	14%
2007	6 978	43 346	39%	12%
2008	7 394	42 994	22%	-4%
2009	7 697	41 151	4%	-33%
2010	8 330	42 106	31%	16%
2011	8 869	42 579	23%	9%
2012	9 307	43 064	16%	3%
2013	9 791	43 484	16%	3%
Change 1993-2013	6 402	10 229	189%	31%

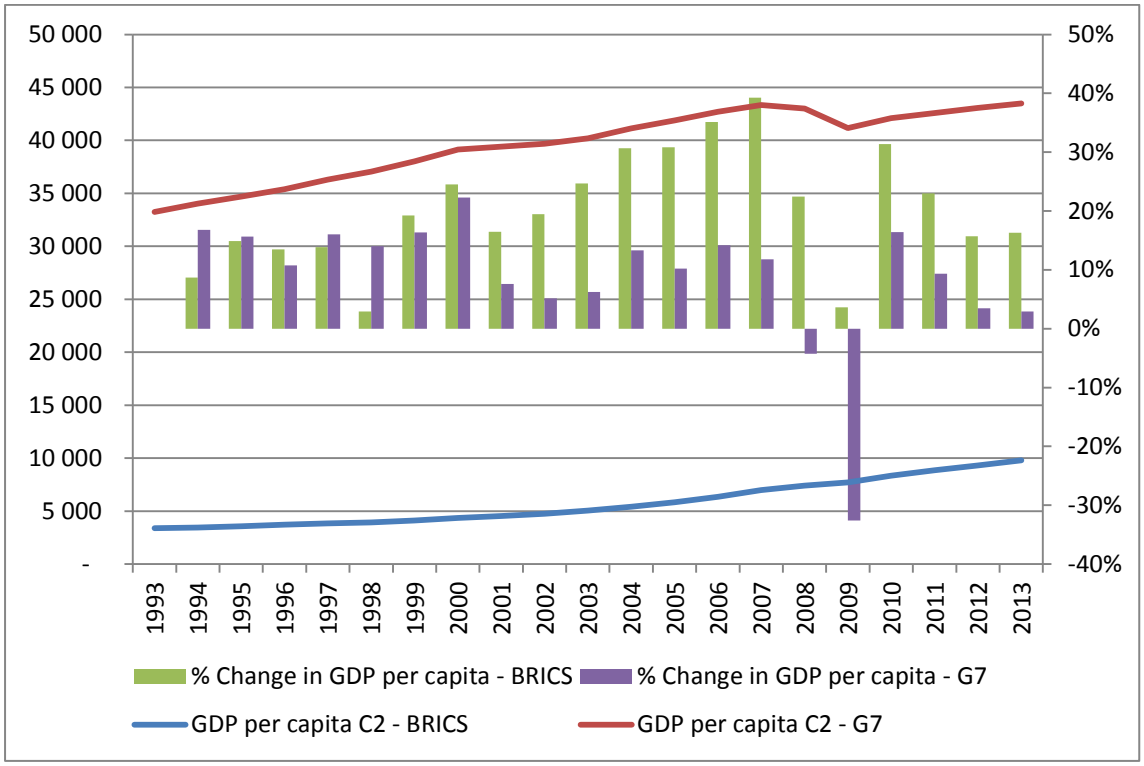


Figure 14: BRICS and G7 GDP per Capita and growth year on year.

Table 8: BRICS and G7 GNI per Capita and growth year on year.

Year	GNI per capita C2		% Change in GNI	
	BRICS	G7	BRICS	G7
1993	3 356	33 380	0%	0%
1994	3 412	34 097	15%	19%
1995	3 525	34 755	20%	19%
1996	3 653	35 513	21%	16%
1997	3 789	36 436	20%	21%
1998	3 841	37 172	6%	17%
1999	4 032	38 147	26%	20%
2000	4 267	39 340	33%	27%
2001	4 462	39 638	23%	12%
2002	4 688	39 882	25%	8%
2003	4 984	40 461	28%	11%
2004	5 364	41 540	38%	20%
2005	5 758	42 373	34%	16%
2006	6 268	43 212	39%	19%
2007	6 917	43 943	44%	16%
2008	7 325	43 564	26%	-2%
2009	7 607	41 710	8%	-28%
2010	8 243	42 757	39%	21%
2011	8 753	43 333	26%	14%
2012	9 211	43 739	21%	3%
2013	9 655	44 167	20%	7%
Change 1993-2013	6 299	10 787	188%	32%

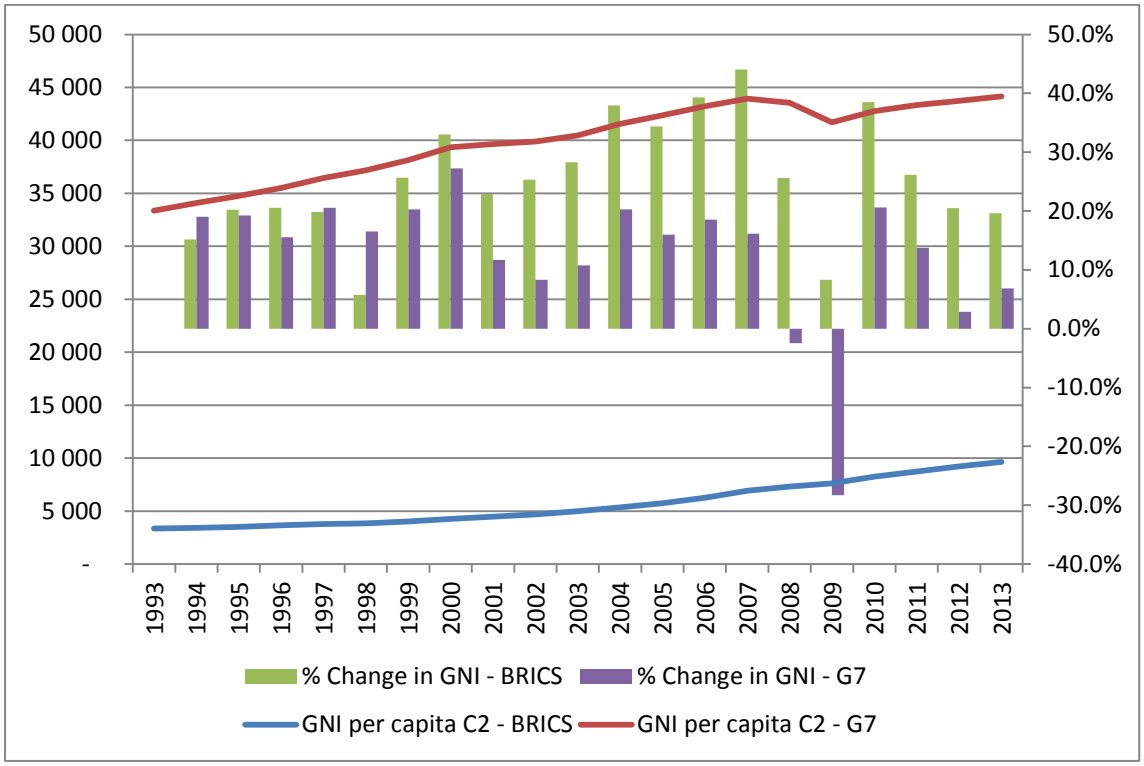


Figure 15: BRICS and G7 GNI per Capita and growth year on year.

5. DISCUSSION OF THE RESULTS

In this section the following is discussed using the data summarised in chapter four: (1) the demographic profile of respondents, (2) the changes in Concept 1 inequality between BRICS and G7 countries and (3) the changes in Concept 2 inequality between BRICS and G7 groups.

5.1 Demographic profile of respondents

5.1.1 *Percentage of Total GDP*

The following observations can be made with reference to periods displayed in Table 9.

Brazil's percentage of BRICS and G7s GDP has decreased from 5.4% in 1993 to 5.0% in 2013. Brazil's percentage of GDP increased from 5.4% to 5.5% but decreased till 2009, from when it has remained constant till 2013.

Canada's percentage of BRICS and G7s GDP has decreased from 2.9% in 1993 to 2.4% in 2013. Canada's percentage of GDP has not exceeded 2.9%.

China's percentage of BRICS and G7s GDP has increased from 8.0% in 1993 to 25.7% in 2013. China's percentage of GDP increased for each year.

France's percentage of BRICS and G7s GDP has decreased from 5.8% in 1993 to 3.9% in 2013. France's percentage of GDP has not exceeded 5.8%.

Germany's percentage of BRICS and G7s GDP has decreased from 8.7% in 1993 to 5.6% in 2013. Germany's percentage of GDP has not exceeded 8.7%.

India's percentage of BRICS and G7s GDP has increased from 5.6% in 1993 to 10.5% in 2013. India's percentage of GDP increased for each year.

Italy's percentage of BRICS and G7s GDP has decreased from 5.8% in 1993 to 3.3% in 2013. Italy's percentage of GDP has not exceeded 5.8.

Japan's percentage of BRICS and G7s GDP has decreased from 12.5% in 1993 to 7.3% in 2013. Japan's percentage of GDP has not exceeded 12.5%.

Russia's percentage of BRICS and G7s GDP has decreased from 7.0% in 1993 to 5.4% in 2013. Russia's percentage of GDP has not exceeded 7.0%.

South Africa's percentage of BRICS and G7s GDP has decreased from 1.2% in 1993 to 1.1% in 2013. South Africa's percentage of GDP has not exceeded 1.2%.

The United Kingdom's percentage of BRICS and G7s GDP has decreased from 5.0% in 1993 to 3.8% in 2013. The United Kingdom's percentage of GDP has not exceeded 5.0%.

The United State of America's percentage of BRICS and G7s GDP has decreased from 32.2% in 1993 to 26.0% in 2013. The United State of America's percentage of GDP increased from 32.2% to 32.7% up to 2001, but then decreased till 2013.

Due to China's and India's rapid GDP growth, BRICS percentage of GDP increased from 27.2% in 1993 to 47.7% in 2013. BRICS's percentage of GDP has not decreased, since 1993.

Table 9: Percentage of GDP relative to sample

	Group	Country	Year					
			1993	1997	2001	2005	2009	2013
GDP %	BRICS	Brazil	5.4%	5.5%	5.1%	4.9%	5.0%	5.0%
		China	8.0%	10.6%	12.6%	15.9%	21.6%	25.7%
		India	5.6%	6.4%	7.0%	7.9%	9.4%	10.5%
		Russia	7.0%	5.0%	5.1%	5.6%	5.6%	5.4%
		RSA	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%
	G7	Canada	2.9%	2.9%	2.9%	2.8%	2.5%	2.4%
		France	5.8%	5.5%	5.4%	4.9%	4.4%	3.9%
		Germany	8.7%	8.1%	7.7%	6.7%	6.0%	5.6%
		Italy	5.8%	5.5%	5.2%	4.6%	3.9%	3.3%
		Japan	12.5%	11.7%	10.2%	9.3%	8.0%	7.3%
		UK	5.0%	5.0%	5.0%	4.8%	4.2%	3.8%
		USA	32.2%	32.7%	32.7%	31.5%	28.2%	26.0%
	BRICS		27.2%	28.6%	30.8%	35.4%	42.7%	47.7%
	G7		72.8%	71.4%	69.2%	64.6%	57.3%	52.3%

5.1.1 *Percentage of Total GNI*

The following observations can be made with reference to periods displayed in Table 10

Brazil's percentage of BRICS and G7s GNI has decreased from 5.2% in 1993 to 4.9% in 2013. Brazil's percentage of GNI increased from 5.2% to 5.3% in 1997 but decreased till 2013.

Canada's percentage of BRICS and G7s GNI has decreased from 2.8% in 1993 to 2.3% in 2013. Canada's percentage of GNI has not exceeded 2.8%.

China’s percentage of BRICS and G7s GNI has increased from 8.0% in 1993 to 25.4% in 2013. China’s percentage of GNI increased for each year.

France’s percentage of BRICS and G7s GNI has decreased from 5.8% in 1993 to 4.0% in 2013. France’s percentage of GNI has not exceeded 5.8%.

Germany’s percentage of BRICS and G7s GNI has decreased from 8.8% in 1993 to 5.7% in 2013. Germany’s percentage of GNI has not exceeded 8.7%.

India’s percentage of BRICS and G7s GNI has increased from 5.6% in 1993 to 10.4% in 2013. India’s percentage of GNI increased for each year

Italy’s percentage of BRICS and G7s GNI has decreased from 5.7% in 1993 to 3.3% in 2013. Italy’s percentage of GNI has not exceeded 5.8%.

Japan’s percentage of BRICS and G7s GNI has decreased from 12.6% in 1993 to 7.5% in 2013. Japan’s percentage of GNI has not exceeded 12.5%.

Russia’s percentage of BRICS and G7s GNI has decreased from 7.0% in 1993 to 5.2% in 2013. Russia’s percentage of GNI has not exceeded 7.0%.

South Africa’s percentage of BRICS and G7s GNI has decreased from 1.2% in 1993 to 1.0% in 2013. South Africa’s percentage of GNI has not exceeded 1.2%.

The United Kingdom’s percentage of BRICS and G7s GNI has decreased from 5.0% in 1993 to 3.8% in 2013. The United Kingdom’s percentage of GNI has not exceeded 5.0%.

The United State of America's percentage of BRICS and G7s GNI has decreased from 32.5% in 1993 to 26.4% in 2013. The United State of America's percentage of GNI increased from 32.5% to 33.3% up to 2001 but then decreased till 2013.

Due to China's and India's rapid GNI growth, BRICS percentage of GNI increased from 26.9% in 1993 to 47.0% in 2013. BRICS's percentage of GNI has not decreased in any period.

Table 10: Percentage of GNI relative to sample

	Group	Country	Year					
			1993	1997	2001	2005	2009	2013
GNI %	BRICS	Brazil	5.2%	5.3%	4.8%	4.7%	4.8%	4.9%
		China	8.0%	10.5%	12.4%	15.7%	21.5%	25.4%
		India	5.6%	6.3%	6.9%	7.8%	9.3%	10.4%
		Russia	7.0%	4.9%	5.0%	5.5%	5.4%	5.2%
		RSA	1.2%	1.1%	1.1%	1.1%	1.1%	1.0%
	G7	Canada	2.8%	2.8%	2.8%	2.7%	2.5%	2.3%
		France	5.8%	5.5%	5.5%	5.0%	4.5%	4.0%
		Germany	8.8%	8.1%	7.7%	6.7%	6.2%	5.7%
		Italy	5.7%	5.5%	5.2%	4.6%	3.9%	3.3%
		Japan	12.6%	11.9%	10.4%	9.5%	8.2%	7.5%
		UK	5.0%	5.0%	5.0%	4.9%	4.2%	3.8%
		USA	32.5%	32.9%	33.0%	31.7%	28.4%	26.4%
	BRICS		26.9%	28.2%	30.3%	34.8%	42.1%	47.0%
	G7		73.1%	71.8%	69.7%	65.2%	57.9%	53.0%

5.1.1 *Percentage of Total Population*

The following observations can be made with reference to periods displayed in Table 11.

Brazil's percentage of BRICS and G7s population has increased from 5.1% in 1993 to 5.4% in 2013. Brazil's percentage of population has not fallen lower than 5.1%.

Canada's percentage of BRICS and G7s population has remained constant at 0.9% from 1993 to 2013.

China's percentage of BRICS and G7s population has decreased from 37.8% in 1993 to 35.8% in 2013. China's percentage of population decreased for each year.

France's percentage of BRICS and G7s population has decreased from 1.9% in 1993 to 1.7% in 2013. France's percentage of population has not exceeded 1.9%.

Germany's percentage of BRICS and G7s population has decreased from 2.6% in 1993 to 2.1% in 2013. Germany's percentage of population has not exceeded 2.1.

India's percentage of BRICS and G7s population has increased from 29.7% in 1993 to 33.8% in 2013. India's percentage of population increased for each year.

Italy's percentage of BRICS and G7s population has decreased from 1.8% in 1993 to 1.6% in 2013. Italy's percentage of population has not exceeded 1.8%.

Japan's percentage of BRICS and G7s population has decreased from 4.0% in 1993 to 3.4% in 2013. Japan's percentage of population has not exceeded 4.0%.

Russia's percentage of BRICS and G7s population has decreased from 4.8% in 1993 to 3.8 % in 2013. Russia's percentage of population has not exceeded 4.8%.

South Africa's percentage of BRICS and G7s population has increased from 1.2% in 1993 to 1.4% in 2013. South Africa's percentage of population has not fallen lower than 1.2%.

The United Kingdom's percentage of BRICS and G7s population has decreased from 1.9% in 1993 to 1.7% in 2013. The United Kingdom's percentage of population has not exceeded 1.9%.

The United State of America's percentage of BRICS and G7s population has increased from 8.3% in 1993 to 8.4% in 2013. The United State of America's percentage of population has not fallen lower than 8.3%.

Due to high population growth experienced by Brazil, India and South Africa, BRICS percentage of population increased from 76.8% in 1993 to 80.2% in 2013. BRICS's percentage of population has not decreased in any period.

Table 11: Percentage of Population relative to sample

	Group	Country	Year					
			1993	1997	2001	2005	2009	2013
Population %	BRICS	Brazil	5.1%	5.1%	5.2%	5.3%	5.4%	5.4%
		China	37.8%	37.6%	37.2%	36.8%	36.3%	35.8%
		India	29.7%	30.5%	31.4%	32.3%	33.1%	33.8%
		Russia	4.8%	4.5%	4.3%	4.0%	3.9%	3.8%
		RSA	1.2%	1.3%	1.3%	1.3%	1.4%	1.4%
	G7	Canada	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
		France	1.9%	1.8%	1.8%	1.8%	1.8%	1.7%
		Germany	2.6%	2.5%	2.4%	2.3%	2.2%	2.1%
		Italy	1.8%	1.7%	1.7%	1.6%	1.6%	1.6%
		Japan	4.0%	3.9%	3.7%	3.6%	3.5%	3.4%
		UK	1.9%	1.8%	1.7%	1.7%	1.7%	1.7%
		USA	8.3%	8.3%	8.3%	8.3%	8.4%	8.4%
	BRICS		78.6%	79.0%	79.4%	79.7%	79.9%	80.2%
	G7		21.4%	21.0%	20.6%	20.3%	20.1%	19.8%

5.2 Discussion pertaining to Research Question 1

5.2.1 *BRICS and G7*

As seen in Table 12, from 1993 to 2013, GDP per capita increased 68% from 9 795 to 16 461. GNI per capita also increased by 68% from 9 796 to 16 487. GDP and GNI have grown at an increasing rate from 1993 to 2007, with the exception of 1998, 2001, and 2005. In 2008 and 2009, both GDP per capita and GNI per capita grew at a decreasing rate, although GDP per capita and GNI per capita grew in 2008. In 2009, for the first time during the period of the study, GDP per capita and GNI per capita decreased amongst BRICS and G7 countries. In 2010 and 2013, GDP per capita grew at an increasing rate following a two year slowdown in subsequent year growth. Since 2010, GNI per capita has grown at a decreasing rate subsequent to previous years.

5.2.2 *Brazil*

As seen in Table 12, GDP per capita grew faster than BRICS and G7 from 1994 to 1997, 2000, 2002 and from 2007 to 2011, however on average growth in GDP per capita lagged BRICS and G7 growth by 21%. GNI per capita grew faster than BRICS and G7 in 1994, 1995, 2004, 2006, 2007 and 2010, however on average growth in GNI per capita lagged BRICS and G7 growth by 20%.

From 1993 to 2013, GDP increased 90% from 1.6 trillion to 3.1 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 92% from 1.5 trillion to 3.0 trillion; this growth rate is less than BRICS and G7 at 105%. Brazil's population grew by 46.4 million people (29%), which is more than the BRICS and G7 average of 22%. Compared to the BRICS and G7 countries, Brazil's population grew faster from 2003 to 2013, however growth in GDP and GNI grew more slowly of most of the BRICS countries in this period. The increase in population growth in Brazil was

higher than BRICS, combined with an increase in income growth which was less than BRICS resulted in Brazil's income per capita deteriorating relative to BRICS and G7 countries.

Table 12: Summary of Results BRICS and G7 compared to Brazil

Year	BRICS and G7					Brazil				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	5.3%	3.9%	1.6%	4.6%	3.7%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	4.4%	4.6%	1.6%	4.5%	2.8%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	2.2%	2.7%	1.6%	2.4%	0.6%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	3.4%	2.8%	1.6%	3.1%	1.8%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	0.4%	-1.0%	1.6%	-0.3%	-1.2%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	0.5%	-0.3%	1.6%	0.1%	-1.0%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	4.4%	5.5%	1.5%	4.9%	2.8%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	1.3%	1.4%	1.5%	1.3%	-0.2%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	3.1%	3.2%	1.6%	3.1%	1.6%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	1.2%	1.2%	1.6%	1.2%	-0.2%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	5.7%	6.2%	1.4%	5.9%	4.2%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	3.1%	3.1%	1.3%	3.1%	1.9%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	4.0%	3.8%	1.2%	3.9%	2.8%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	6.0%	6.0%	1.1%	6.0%	4.9%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	5.0%	4.3%	1.0%	4.7%	3.9%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-0.2%	-0.1%	0.9%	-0.2%	-1.2%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	7.6%	10.9%	0.9%	9.2%	6.5%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	3.9%	3.9%	0.9%	3.9%	2.9%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	1.8%	2.1%	0.9%	2.0%	0.8%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	2.7%	2.6%	0.9%	2.7%	1.8%
1993	30 509 529	30 512 257	3 115	9 795	9 796	1 634 941	1 596 267	158	10 360	10 115
2013	62 351 347	62 449 759	3 788	16 461	16 487	3 109 302	3 063 099	204	15 222	14 996
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	90.2%	91.9%	29.4%	46.9%	48.3%

5.2.3 *Canada*

As seen in Table 13, from 1993 to 2013, GDP increased 69% from 877 billion to 1.5 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 72% from 848 billion to 1.5 trillion; this growth rate is less than BRICS and G7 at 105%. Canada's population grew by 6.3 million people (21.9%), which is slightly more than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average, Canada's GDP, GNI and Population grew slightly faster from 1993 to 2013. In 1994, 1997-2000 and 2002, GNI and GDP grew faster than BRICS and G7 with the change in population growing more slowly than BRICS and G7. This resulted in GDP per capita and GNI per capita growth which was stronger than BRICS and G7 in 1994, 1997-2000 and 2002. With the exception of 2006, from 2003, Canada's population grew faster, while GDP and GNI grew more slowly, resulting in a GDP and GNI significantly lagging behind BRICS and G7. The increase in population growth in Canada was higher than BRICS, combined with an increase in income growth which was less than BRICS resulted in Canada's income per capita deteriorating relative to BRICS and G7 countries.

Table 13: Summary of Results BRICS and G7 compared to Canada

Year	BRICS and G7					Canada				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	4.6%	4.4%	0.97%	4.5%	3.6%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	2.7%	2.8%	0.83%	2.8%	1.9%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	1.7%	1.8%	1.08%	1.7%	0.6%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	4.3%	4.5%	1.06%	4.4%	3.2%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	4.1%	3.9%	0.87%	4.0%	3.2%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	5.0%	5.0%	0.83%	5.0%	4.1%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	5.1%	5.8%	0.89%	5.5%	4.2%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	1.7%	1.5%	1.01%	1.6%	0.7%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	2.8%	3.1%	0.90%	3.0%	1.9%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	1.9%	2.0%	1.00%	1.9%	0.9%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	3.1%	3.4%	1.01%	3.3%	2.1%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	3.2%	3.3%	0.99%	3.2%	2.2%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	2.6%	3.1%	0.80%	2.9%	1.8%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	2.0%	2.1%	0.97%	2.1%	1.0%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	1.2%	1.1%	1.09%	1.1%	0.1%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-2.7%	-2.9%	1.15%	-2.8%	-3.8%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	3.4%	3.2%	1.12%	3.3%	2.2%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	3.0%	3.1%	0.99%	3.0%	1.9%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	1.9%	2.0%	1.20%	2.0%	0.7%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	2.0%	2.3%	1.16%	2.2%	0.8%
1993	30 509 529	30 512 257	3 115	9 795	9 796	877 224	848 635	29	30 424	29 432
2013	62 351 347	62 449 759	3 788	16 461	16 487	1 484 142	1 462 752	35	42 213	41 605
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	69.2%	72.4%	21.9%	38.7%	41.4%

5.2.4 *China*

As seen in Table 14, compared to the BRICS and G7 countries, on average, China's GDP and GNI grew over five times faster, while the population growth lagged BRICS and G7 resulting in significantly larger GDP per capita and GNI per capita growth. From 1993 to 2013, GDP increased 554% from 2.4 trillion to 16.0 trillion; this growth rate is more than BRICS and G7 at 104%. GNI increased 551% from 2.4 trillion to 15.8 trillion; this growth rate is more than BRICS and G7 at 105%. China's population grew by 178 million people (15.2%), which is less than the BRICS and G7 average of 21.6%.

As seen in Table 9 and Table 10 China's GDP GNI constituted 8% of the samples GDP and GNI in 1993 and increased to 25% and 26% respectively in 2013. In addition, as seen in Table 11, since China population represented 38% of the sample in 1993 and 36% of the sample in 2013, China's rapid growth in income dramatically changed the distribution of income across the sample. China's population growth has been steadily decreasing year on year from 1993 to 2013. From 1993 to 2013, China's year on year growth has been in excess of 7% per annum. In addition, each year China's growth of GNI per capita and GDP per capita outstripped GDP per capita and GNI per capita of BRICS and G7, while China's population growth grew more slowly than BRICS and G7.

Table 14: Summary of Results BRICS and G7 compared to China

Year	BRICS and G7					China				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	13.1%	13.1%	1.14%	13.1%	11.8%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	11.0%	9.4%	1.09%	10.2%	9.8%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	9.9%	10.1%	1.05%	10.0%	8.8%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	9.2%	9.6%	1.03%	9.4%	8.1%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	7.9%	7.3%	0.96%	7.6%	6.8%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	7.6%	8.0%	0.87%	7.8%	6.7%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	8.4%	8.6%	0.79%	8.5%	7.6%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	8.3%	8.1%	0.73%	8.2%	7.5%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	9.1%	9.5%	0.67%	9.3%	8.4%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	10.0%	10.5%	0.62%	10.2%	9.3%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	10.1%	10.5%	0.60%	10.3%	9.4%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	11.4%	10.8%	0.59%	11.1%	10.7%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	12.7%	13.3%	0.56%	13.0%	12.1%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	14.2%	14.7%	0.52%	14.4%	13.6%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	9.6%	10.0%	0.51%	9.8%	9.1%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	9.2%	8.4%	0.50%	8.8%	8.7%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	10.6%	10.4%	0.48%	10.5%	10.1%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	9.5%	9.0%	0.48%	9.2%	9.0%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	7.8%	8.5%	0.49%	8.1%	7.2%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	7.7%	7.1%	0.49%	7.4%	7.2%
1993	30 509 529	30 512 257	3 115	9 795	9 796	2 448 744	2 442 542	1 178	2 078	2 073
2013	62 351 347	62 449 759	3 788	16 461	16 487	16 023 988	15 889 478	1 357	11 805	11 706
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	554.4%	550.5%	15.2%	468.1%	464.8%

5.2.5 *France*

As seen in Table 15, from 1993 to 2013, GDP increased 40% from 1.7 trillion to 2.5 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 41% from 1.7 trillion to 2.4 trillion; this growth rate is less than BRICS and G7 at 105%. France’s population grew by 6.8 million people (11.5%), which is less than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries France's GDP per capita and GNI per capita grew slower than BRICS and G7. France's GDP has grown slower than BRICS and G7, with the exception of 1998 and France's GNI has also grown slower with the exception 1998 and 1999; due to slower population growth compared to BRICS and G7, France's GDP per capita grew faster during 1994-1995 and 1998-2001. In addition, GNI grew faster in 1994 and 1998.

Table 15: Summary of Results BRICS and G7 compared to France

Year	BRICS and G7					France				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	2.3%	2.1%	0.37%	2.2%	2.0%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	2.1%	2.1%	0.36%	2.1%	1.7%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	1.4%	1.9%	0.35%	1.6%	1.0%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	2.3%	2.7%	0.35%	2.5%	2.0%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	3.6%	3.6%	0.37%	3.6%	3.2%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	3.4%	4.1%	0.52%	3.8%	2.9%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	3.9%	3.7%	0.69%	3.8%	3.2%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	2.0%	1.9%	0.73%	1.9%	1.2%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	1.1%	0.3%	0.73%	0.7%	0.4%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	0.8%	1.1%	0.71%	0.9%	0.1%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	2.8%	3.0%	0.74%	2.9%	2.0%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	1.6%	1.9%	0.76%	1.8%	0.8%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	2.4%	2.6%	0.70%	2.5%	1.7%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	2.4%	2.4%	0.62%	2.4%	1.7%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	0.2%	0.2%	0.56%	0.2%	-0.4%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-2.9%	-3.3%	0.52%	-3.1%	-3.4%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	2.0%	2.2%	0.50%	2.1%	1.5%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	2.1%	2.3%	0.48%	2.2%	1.6%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	0.2%	-0.7%	0.45%	-0.3%	-0.3%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	0.7%	0.8%	0.43%	0.7%	0.2%
1993	30 509 529	30 512 257	3 115	9 795	9 796	1 756 566	1 769 237	59	29 719	29 933
2013	62 351 347	62 449 759	3 788	16 461	16 487	2 459 435	2 498 117	66	37 306	37 893
% Change 1993-2013	**104.4%**	**104.7%**	**21.6%**	**68.1%**	**68.3%**	**40.0%**	**41.2%**	**11.5%**	**25.5%**	**26.6%**

5.2.6 *Germany*

As seen in Table 16, from 1993 to 2013, GDP increased 31% from 2.6 trillion to 3.4 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 33% from 2.6 trillion to 3.5 trillion; this growth rate is less than BRICS and G7 at 105%. France's population shrank by 510 thousand people (-0.6%), which is less than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average Germany's GDP per capita, GNI per capita and population grew slower than BRICS and G7. Germany's GDP and GNI have grown slower than BRICS and G7 from 1993 to 2013, with exception of 2011, in which GNI grew faster than BRICS and G7. GDP per capita growth has outstripped BRICS and G7 in 1994, 1998, 2001 and 2011; and GNI per capita growth has been faster in 1994, 2001 and 2011.

Table 16: Summary of Results BRICS and G7 compared to Germany

Year	BRICS and G7					Germany				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	2.5%	1.8%	0.35%	2.1%	2.1%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	1.7%	1.5%	0.29%	1.6%	1.4%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	0.8%	0.9%	0.29%	0.9%	0.5%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	1.8%	1.6%	0.15%	1.7%	1.7%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	2.0%	1.6%	0.02%	1.8%	2.0%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	2.0%	1.8%	0.06%	1.9%	1.9%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	3.0%	3.2%	0.14%	3.1%	2.8%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	1.7%	1.5%	0.17%	1.6%	1.5%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	0.0%	-0.4%	0.17%	-0.2%	-0.2%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	-0.7%	-0.4%	0.06%	-0.6%	-0.8%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	1.2%	2.8%	-0.02%	2.0%	1.2%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	0.7%	0.9%	-0.06%	0.8%	0.8%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	3.7%	4.6%	-0.11%	4.1%	3.8%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	3.3%	3.0%	-0.13%	3.1%	3.4%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	1.1%	0.6%	-0.19%	0.8%	1.3%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-5.6%	-4.4%	-0.25%	-5.0%	-5.4%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	4.1%	3.8%	-0.15%	3.9%	4.2%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	3.7%	4.2%	0.03%	3.9%	3.6%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	0.4%	0.3%	-1.68%	0.3%	2.1%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	0.3%	0.1%	0.27%	0.2%	0.0%
1993	30 509 529	30 512 257	3 115	9 795	9 796	2 652 380	2 671 795	81	32 682	32 922
2013	62 351 347	62 449 759	3 788	16 461	16 487	3 471 438	3 547 103	81	43 046	43 984
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	30.9%	32.8%	-0.6%	31.7%	33.6%

5.2.7 *India*

As seen in Table 17, from 1993 to 2013, GDP increased 281% from 1.7 trillion to 6.5 trillion; this growth rate is more than BRICS and G7 at 104%. GNI increased 282% from 1.7 trillion to 6.4 trillion; this growth rate is more than BRICS and G7 at 105%. India’s population grew by 355 million people (38%), which is more than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average India's GDP per capita, GNI per capita and population grew faster than BRICS and G7, with the exception of the year 2000. India's population has outgrown BRICS and G7 from 1993 to 2013. GDP per capita has constantly grown faster than BRICS and G7, while GNI per capita has grown faster for 18 years, with only 1997 and the year 2000 growing at a slower rate.

Table 17: Summary of Results BRICS and G7 compared to India

Year	BRICS and G7					India				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	6.7%	6.8%	1.96%	6.7%	4.6%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	7.6%	7.8%	1.94%	7.7%	5.5%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	7.5%	7.8%	1.92%	7.7%	5.5%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	4.0%	4.1%	1.89%	4.1%	2.1%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	6.2%	6.2%	1.86%	6.2%	4.2%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	8.8%	8.9%	1.83%	8.9%	6.9%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	3.8%	3.5%	1.79%	3.7%	2.0%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	4.8%	5.0%	1.75%	4.9%	3.0%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	3.8%	4.0%	1.71%	3.9%	2.1%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	7.9%	7.8%	1.67%	7.8%	6.1%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	7.9%	8.0%	1.63%	7.9%	6.2%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	9.3%	9.3%	1.59%	9.3%	7.6%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	9.3%	9.2%	1.55%	9.2%	7.6%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	9.8%	10.2%	1.51%	10.0%	8.2%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	3.9%	3.7%	1.47%	3.8%	2.4%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	8.5%	8.5%	1.43%	8.5%	7.0%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	10.3%	9.7%	1.38%	10.0%	8.8%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	6.6%	6.8%	1.34%	6.7%	5.2%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	5.1%	4.8%	1.29%	4.9%	3.7%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	6.9%	6.8%	1.26%	6.9%	5.6%
1993	30 509 529	30 512 257	3 115	9 795	9 796	1 723 699	1 700 004	924	1 865	1 839
2013	62 351 347	62 449 759	3 788	16 461	16 487	6 566 166	6 486 077	1 279	5 132	5 069
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	280.9%	281.5%	38.4%	175.2%	175.7%

5.2.8 *Italy*

As seen in Table 18, from 1993 to 2013, GDP increased 15% from 1.7 trillion to 2.0 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 16% from 1.7 trillion to 2.0 trillion; this growth rate is less than BRICS and G7 at 105%. Italy's population grew by 3.4 million people (6%), which is less than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average Italy's GDP per capita, GNI per capita and population grew slower than BRICS and G7. Italy's population growth has outgrown BRICS and G7 in 2013 and its GNI has outgrown BRICS and G7 in 1995. GDP per capita and GNI per capita have grown faster than BRICS and G7 in 1994, 1995, 2001 and 2002; and GNI per capita also grew faster in 1998.

Table 18: Summary of Results BRICS and G7 compared to Italy

Year	BRICS and G7					Italy				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	2.2%	2.0%	0.02%	2.1%	2.1%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	2.9%	3.2%	0.00%	3.1%	2.9%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	1.3%	1.5%	0.03%	1.4%	1.3%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	1.8%	2.4%	0.05%	2.1%	1.8%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	1.6%	1.5%	0.03%	1.6%	1.6%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	1.6%	1.9%	0.02%	1.7%	1.5%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	3.7%	3.5%	0.05%	3.6%	3.7%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	1.8%	1.8%	0.06%	1.8%	1.7%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	0.3%	0.1%	0.15%	0.2%	0.1%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	0.2%	0.1%	0.45%	0.1%	-0.3%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	1.6%	1.9%	0.65%	1.7%	0.9%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	0.9%	1.3%	0.49%	1.1%	0.5%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	2.0%	2.2%	0.30%	2.1%	1.7%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	1.5%	1.2%	0.51%	1.3%	1.0%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	-1.0%	-2.0%	0.66%	-1.5%	-1.7%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-5.5%	-4.7%	0.46%	-5.1%	-5.9%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	1.7%	1.6%	0.31%	1.6%	1.4%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	0.6%	0.5%	0.17%	0.6%	0.4%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	-2.8%	-2.7%	0.27%	-2.8%	-3.1%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	-1.7%	-1.8%	1.17%	-1.8%	-2.9%
1993	30 509 529	30 512 257	3 115	9 795	9 796	1 770 276	1 745 406	57	31 149	30 712
2013	62 351 347	62 449 759	3 788	16 461	16 487	2 035 523	2 030 251	60	33 794	33 706
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	15.0%	16.3%	6.0%	8.5%	9.7%

5.2.9 *Japan*

As seen in Table 19, from 1993 to 2013, GDP increased 19% from 3.8 trillion to 4.5 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 22% from 3.8 trillion to 4.7 trillion; this growth rate is less than BRICS and G7 at 105%. Japan's population grew by 2.8 million people (2.3%), which is less than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average Japan's GDP per capita, GNI per capita and population grew slower than BRICS and G7.GDP per capita and GNI per capita have grown faster than BRICS and G7 in 1996.

Table 19: Summary of Results BRICS and G7 compared to Japan

Year	BRICS and G7					Japan				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	0.9%	0.8%	0.34%	0.8%	0.5%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	1.9%	2.0%	0.38%	2.0%	1.6%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	2.6%	2.9%	0.25%	2.8%	2.4%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	1.6%	1.8%	0.24%	1.7%	1.4%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	-2.0%	-2.0%	0.27%	-2.0%	-2.3%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	-0.2%	-0.3%	0.18%	-0.2%	-0.4%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	2.3%	2.3%	0.17%	2.3%	2.1%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	0.4%	0.8%	0.24%	0.6%	0.1%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	0.3%	0.2%	0.23%	0.3%	0.1%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	1.7%	1.7%	0.21%	1.7%	1.5%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	2.4%	2.6%	0.03%	2.5%	2.3%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	1.3%	1.8%	0.01%	1.5%	1.3%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	1.7%	2.2%	0.06%	1.9%	1.6%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	2.2%	2.7%	0.11%	2.5%	2.1%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	-1.0%	-1.1%	0.05%	-1.1%	-1.1%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-5.5%	-6.0%	-0.01%	-5.8%	-5.5%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	4.7%	4.5%	0.02%	4.6%	4.6%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	-0.5%	-0.1%	-0.20%	-0.3%	-0.3%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	1.8%	1.8%	-0.20%	1.8%	2.0%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	1.6%	2.1%	-0.17%	1.9%	1.8%
1993	30 509 529	30 512 257	3 115	9 795	9 796	3 809 209	3 845 003	125	30 587	30 875
2013	62 351 347	62 449 759	3 788	16 461	16 487	4 535 077	4 700 046	127	35 614	36 910
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	19.1%	22.2%	2.3%	16.4%	19.5%

5.2.10 *Russia*

As seen in Table 20, from 1993 to 2013, GDP increased 59% from 2.1 trillion to 3.3 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 53% from 2.1 trillion to 3.2 trillion; this growth rate is less than BRICS and G7 at 105%. Russia’s population shrunk by 5 million people (-3.4%), which is less than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average Russia's GDP per capita, GNI per capita and population grew slower than BRICS and G7.GDP and GNI growth grew faster than BRICS and G7 from 1999 to 2008. Russia's population growth has been slower than BRICS and G7 from 1993 to 2013. GDP per capita and GNI per capita have grown faster than BRICS and G7 from 1999 to 2008, 2011 and 2012.

Table 20: Summary of Results BRICS and G7 compared to Russia

Year	BRICS and G7					Russian Federation				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	-12.6%	-12.0%	-0.12%	-12.3%	-12.5%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	-4.1%	-4.5%	0.03%	-4.3%	-4.2%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	-3.6%	-4.1%	-0.15%	-3.8%	-3.5%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	1.4%	0.7%	-0.17%	1.1%	1.6%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	-5.3%	-7.1%	-0.17%	-6.2%	-5.1%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	6.4%	6.7%	-0.31%	6.6%	6.7%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	10.0%	11.1%	-0.42%	10.6%	10.5%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	5.1%	6.5%	-0.42%	5.8%	5.5%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	4.7%	4.2%	-0.46%	4.5%	5.2%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	7.3%	6.1%	-0.45%	6.7%	7.8%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	7.2%	8.0%	-0.40%	7.6%	7.6%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	6.4%	5.9%	-0.38%	6.2%	6.8%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	8.2%	7.4%	-0.33%	7.8%	8.5%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	8.5%	9.3%	-0.17%	8.9%	8.7%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	5.2%	4.3%	-0.04%	4.8%	5.3%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-7.8%	-7.7%	0.03%	-7.8%	-7.8%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	4.5%	4.4%	0.04%	4.4%	4.5%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	4.3%	3.8%	0.08%	4.0%	4.2%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	3.4%	3.0%	0.17%	3.2%	3.2%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	1.3%	0.8%	0.21%	1.1%	1.1%
1993	30 509 529	30 512 257	3 115	9 795	9 796	2 126 753	2 121 225	149	14 320	14 282
2013	62 351 347	62 449 759	3 788	16 461	16 487	3 381 219	3 244 853	144	23 561	22 611
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	59.0%	53.0%	-3.4%	64.5%	58.3%

5.2.11 *South Africa*

As seen in Table 21, from 1993 to 2013, GDP increased 85% from 357 billion to 662 billion; this growth rate is less than BRICS and G7 at 104%. GNI increased 84% from 351 billion to 645 billion; this growth rate is less than BRICS and G7 at 105%. South Africa's population grew by 15 million people (41.9%), which is more than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average South Africa's GDP per capita, GNI per capita grew slower and population grew faster than BRICS and G7. GDP grew faster in 1994, 1996, 2001, 2002, 2005, 2006 and 2008; while GNI growth grew faster than BRICS and G7 in 1994, 1996, 2002, 2005, 2006 and 2008. South Africa's population growth has been faster than BRICS and G7 from 1993 to 2013. GDP per capita has grown faster than BRICS and G7 from 1994 to 1997 and 2000 to 2008; while GNI per Capita growth has only been faster than BRICS and G7 in 2002, 2005 and 2008. The increase in population growth in South Africa was higher than BRICS, combined with an increase in income growth which was less than BRICS resulted in South Africa's income per capita deteriorating relative to BRICS and G7 countries.

Table 21: Summary of Results BRICS and G7 compared to South Africa

Year	BRICS and G7					South Africa				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	3.2%	3.4%	2.16%	3.3%	1.0%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	3.1%	3.0%	2.19%	3.1%	0.9%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	4.3%	4.0%	2.25%	4.2%	2.0%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	2.6%	2.6%	2.31%	2.6%	0.3%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	0.5%	0.3%	2.38%	0.4%	-1.8%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	2.4%	2.4%	2.44%	2.4%	0.0%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	4.2%	4.2%	2.51%	4.2%	1.7%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	2.7%	2.0%	2.07%	2.3%	0.6%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	3.7%	4.3%	1.42%	4.0%	2.3%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	2.9%	2.7%	1.27%	2.8%	1.7%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	4.6%	5.3%	1.30%	4.9%	3.2%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	5.3%	5.2%	1.33%	5.3%	3.9%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	5.6%	5.6%	1.36%	5.6%	4.2%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	5.4%	3.9%	1.39%	4.7%	3.9%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	3.2%	3.3%	1.41%	3.3%	1.8%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-1.5%	-0.7%	1.44%	-1.1%	-2.9%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	3.0%	3.1%	1.47%	3.1%	1.5%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	3.2%	2.7%	1.50%	3.0%	1.7%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	2.2%	2.1%	1.53%	2.1%	0.7%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	2.2%	2.3%	1.56%	2.3%	0.6%
1993	30 509 529	30 512 257	3 115	9 795	9 796	357 734	351 202	37	9 546	9 372
2013	62 351 347	62 449 759	3 788	16 461	16 487	662 034	645 031	53	12 454	12 134
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	85.1%	83.7%	41.9%	30.5%	29.5%

5.2.12 *United Kingdom*

As seen in Table 22, from 1993 to 2013, GDP increased 58% from 1.5 trillion to 2.3 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 56% from 1.5 trillion to 2.3 trillion; this growth rate is less than BRICS and G7 at 105%. The United Kingdom's population grew by 6 million people (11.1%), which is less than the BRICS and G7 average of 21.6%.

Table 22: Summary of Results BRICS and G7 compared to United Kingdom

Year`	BRICS and G7					United Kingdom				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	4.0%	4.1%	0.25%	4.1%	3.8%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	4.9%	4.9%	0.26%	4.9%	4.6%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	2.7%	2.7%	0.25%	2.7%	2.4%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	3.1%	3.1%	0.26%	3.1%	2.8%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	3.4%	3.5%	0.29%	3.4%	3.1%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	3.1%	3.0%	0.33%	3.0%	2.8%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	3.8%	4.6%	0.36%	4.2%	3.4%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	2.8%	3.1%	0.39%	2.9%	2.4%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	2.5%	3.1%	0.42%	2.8%	2.1%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	3.3%	3.4%	0.47%	3.4%	2.9%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	2.5%	2.6%	0.57%	2.6%	1.9%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	3.0%	3.6%	0.69%	3.3%	2.3%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	2.7%	1.4%	0.74%	2.0%	1.9%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	2.6%	2.5%	0.78%	2.6%	1.8%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	-0.5%	-1.2%	0.79%	-0.8%	-1.2%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-4.2%	-4.2%	0.76%	-4.2%	-4.9%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	1.5%	2.5%	0.79%	2.0%	0.7%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	2.0%	1.9%	0.78%	2.0%	1.2%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	1.2%	0.0%	0.70%	0.6%	0.5%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	2.2%	1.1%	0.64%	1.6%	1.5%
1993	30 509 529	30 512 257	3 115	9 795	9 796	1 515 739	1 514 357	58	26 261	26 237
2013	62 351 347	62 449 759	3 788	16 461	16 487	2 392 529	2 369 339	64	37 321	36 959
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	57.8%	56.5%	11.1%	42.1%	40.9%

5.2.13 *United States*

As seen in Table 23, from 1993 to 2013, GDP increased 65% from 9.8 trillion to 16.2 trillion; this growth rate is less than BRICS and G7 at 104%. GNI increased 67% from 9.9 trillion to 16.5 trillion; this growth rate is less than BRICS and G7 at 105%. Japan's population grew by 56 million people (21.8%), which is slightly more than the BRICS and G7 average of 21.6%. Compared to the BRICS and G7 countries, on average the United States's GDP per capita, GNI per capita and population slower than BRICS and G7. GDP grew faster in 1994, 1995, 1998 and 2001; while GNI growth grew faster than BRICS and G7 in 1994, 1995, 1998, 2001 and 2002. The United States's population growth has been slower than BRICS and G7 from 1993 to 2013.

As seen in Table 9, Table 10 and Table 11, the United States of America's constituted 8% of the population in the sample in 1993 and 2013, however both the proportion of GDP and GNI decreased from 32% to 26%.

GDP per capita has grown faster than BRICS and G7 from 1994 to 2003; while GNI per capita has grown faster from 1994 to 1998 and 2001 to 2003. Compared to the BRICS and G7 countries, on average the United States of America's GDP per capita, GNI per capita grew slower and population grew faster than BRICS and G7. The United States of America's GDP and GNI grew faster in 1994 and 1996 to 1999; while population growth has been faster than BRICS and G7 from 1997 to 2000, 2005 to 2010 and 2012. GDP per capita has grown faster than BRICS and G7 from 1994 to 2000 and 2002 to 2004; while GNI per Capita growth has grown faster than BRICS and G7 in 1994 and 1996 to 1999.

Table 23: Summary of Results BRICS and G7 compared to United States of America

Year	BRICS and G7					United States				
	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI	GDP (in millions)	GNI (in millions)	Population (in millions)	Concept 1 GDP	Concept 1 GNI
1994	3.1%	2.9%	1.3%	1.8%	1.6%	4.0%	3.9%	1.23%	4.0%	2.8%
1995	3.3%	3.2%	1.2%	2.1%	1.9%	2.7%	2.8%	1.20%	2.7%	1.5%
1996	3.3%	3.4%	1.2%	2.1%	2.2%	3.8%	3.8%	1.17%	3.8%	2.6%
1997	3.8%	3.8%	1.2%	2.6%	2.6%	4.5%	4.4%	1.21%	4.4%	3.2%
1998	2.9%	2.7%	1.2%	1.8%	1.5%	4.4%	4.4%	1.17%	4.4%	3.2%
1999	4.0%	4.1%	1.1%	2.9%	3.0%	4.7%	4.8%	1.15%	4.7%	3.5%
2000	4.6%	4.7%	1.1%	3.5%	3.6%	4.1%	4.2%	1.12%	4.1%	2.9%
2001	2.5%	2.7%	1.0%	1.5%	1.6%	1.0%	1.1%	0.99%	1.0%	0.0%
2002	2.7%	2.7%	1.0%	1.7%	1.7%	1.8%	1.7%	0.93%	1.8%	0.8%
2003	3.7%	3.7%	0.9%	2.7%	2.8%	2.8%	3.0%	0.86%	2.9%	1.9%
2004	4.7%	5.0%	0.9%	3.7%	4.1%	3.8%	3.9%	0.93%	3.9%	2.8%
2005	4.6%	4.5%	0.9%	3.6%	3.6%	3.3%	3.3%	0.93%	3.3%	2.4%
2006	5.1%	5.1%	0.9%	4.2%	4.2%	2.7%	2.4%	0.97%	2.6%	1.7%
2007	5.4%	5.6%	0.9%	4.5%	4.7%	1.8%	2.2%	0.96%	2.0%	0.8%
2008	2.6%	2.5%	0.9%	1.7%	1.6%	-0.3%	0.0%	0.95%	-0.1%	-1.2%
2009	-0.2%	-0.3%	0.8%	-1.0%	-1.2%	-2.8%	-2.9%	0.88%	-2.8%	-3.6%
2010	5.6%	5.7%	0.8%	4.7%	4.8%	2.5%	2.9%	0.84%	2.7%	1.7%
2011	4.2%	4.1%	0.8%	3.3%	3.3%	1.6%	1.8%	0.77%	1.7%	0.8%
2012	3.4%	3.4%	0.7%	2.7%	2.7%	2.3%	2.2%	0.77%	2.3%	1.5%
2013	3.7%	3.5%	0.8%	2.8%	2.6%	2.2%	2.2%	0.76%	2.2%	1.4%
1993	30 509 529	30 512 257	3 115	9 795	9 796	9 836 264	9 906 585	260	37 844	38 114
2013	62 351 347	62 449 759	3 788	16 461	16 487	16 230 494	16 513 613	316	51 282	52 176
% Change 1993-2013	104.4%	104.7%	21.6%	68.1%	68.3%	65.0%	66.7%	21.8%	35.5%	36.9%

5.2.14 *Comparison between BRICS and G7 countries*

As seen in Table 24, the USA, Canada and the UK and Germany increased the most in terms of dollar value of GDP per capita. China, India, Russia and Brazil increased the most in terms of GDP percentage change. The USA, Canada, Germany and the UK increased the most in terms of dollar value of GNI per capita and China, India, Russia and Brazil increased the most in percentage change in GNI per capita.

Italy, South Africa, India and Brazil increased the least in terms of dollar value of GDP per capita. Italy, Japan, France and South Africa increased the least in terms of GDP percentage change. South Africa, India, Italy and Brazil increased the least in terms of dollar value of GNI per capita and Italy, Japan, France and South Africa increased the most in terms of percentage change in GNI per capita.

China's growth income per capita growth rate has been extremely high compared to other BRICS and G7 countries and it has grown two and a half times faster than India, the second highest country in terms of GDP per capita growth and GNI per capita growth. India has grown more than twice as faster as Russia and more than three times as fast as Brazil. South Africa is the only BRICS country, in which G7 countries are growing faster. China has grown forty eight times faster than South Africa.

Sala-i-Martin (2002), Melchior et al. (2000) and Dowrick and Akmal (2005) in their global income inequality studies observed low to negative income growth rates in African countries. In this study, South Africa was the only African country in the sample consisting of BRICS and G7 countries and has experienced the lowest growth rates compared to BRICS countries and is ranked 9^{th} in terms of GDP and GNI growth rates when analysing the twelve BRICS and G7.

Sala-i-Martin (2002); (Schultz, 1998) found that Japan and the United States of America have also been benefiting from a larger share of global income; however this paper has found that relative to BRICS and G7 countries, from 1993-2013, Japan's GDP per capita growth increased less than BRICS and G7 growth; and GNI growth increased less than BRICS and G7 growth. In addition, United States GDP growth increased less than BRICS and G7 growth; and GNI growth increased less than BRICS and G7 growth.

Although, the top four gainers in terms of GDP per capita growth and GNI per capita growth are BRICS countries, the top four gainers in terms of dollar value changes in GDP per capita and GNI per capita are G7 countries.

All G7 countries, with the exception of the United Kingdom have higher GNI per capita compared to GDP per capita suggesting that the organisations in G7 countries own operations in other countries. In addition, China, India, Russia, South Africa and the United Kingdom are producers of output which belongs to other countries as their GDP per capita exceeds their GNI per capita.

Further, from 1993 to 2013, all G7 countries, with the exception of the United Kingdom, have GNI per capita growing faster than GDP per capita, suggesting that there is an increase in the number of local-owned operations in foreign countries; while China, India, Russia, South Africa and the United Kingdom have increasingly become a destination for foreign companies to own local operations.

The research paper also found that during the 2008-2009 recession, all BRICS and G7 countries experience negative growth except China and India.

Table 24 Rank of BRICS and G7 changes from 1993 to 2013

Rank	Group	Country	Change in GDP per capita	Group	Country	% Change in GDP per capita	Group	Country	Change in GNI per capita	BRICS	Country	% Change in GNI per capita
1	**G7**	**USA**	13 438	**BRICS**	**China**	468%	**G7**	**USA**	14 062	**BRICS**	**China**	465%
2	**G7**	**Canada**	11 789	**BRICS**	**India**	175%	**G7**	**Canada**	12 172	**BRICS**	**India**	176%
3	**G7**	**UK**	11 060	**BRICS**	**Russia**	65%	**G7**	**Germany**	11 062	**BRICS**	**Russia**	58%
4	**G7**	**Germany**	10 363	**BRICS**	**Brazil**	47%	**G7**	**UK**	10 722	**BRICS**	**Brazil**	48%
5	**BRICS**	**China**	9 727	**G7**	**UK**	42%	**BRICS**	**China**	9 633	**G7**	**Canada**	41%
6	**BRICS**	**Russia**	9 242	**G7**	**Canada**	39%	**BRICS**	**Russia**	8 329	**G7**	**UK**	41%
7	**G7**	**France**	7 588	**G7**	**USA**	36%	**G7**	**France**	7 960	**G7**	**USA**	37%
8	**G7**	**Japan**	5 027	**G7**	**Germany**	32%	**G7**	**Japan**	6 035	**G7**	**Germany**	34%
9	**BRICS**	**Brazil**	4 862	**BRICS**	**RSA**	30%	**BRICS**	**Brazil**	4 881	**BRICS**	**RSA**	29%
10	**BRICS**	**India**	3 267	**G7**	**France**	26%	**BRICS**	**India**	3 230	**G7**	**France**	27%
11	**BRICS**	**RSA**	2 908	**G7**	**Japan**	16%	**G7**	**Italy**	2 994	**G7**	**Japan**	20%
12	**G7**	**Italy**	2 644	**G7**	**Italy**	8%	**BRICS**	**RSA**	2 762	**G7**	**Italy**	10%

5.3 Discussion pertaining to Research Question 2

As seen in Table 7 and Table 8, From 1993 to 2013, BRICS's GDP per capita increased 189% from 3 389 to 9 791; while G7's GDP per capita increased 31% from 33 255 to 43 484. GNI per capita increased by 189% from 3 356 to 33 380; while G7's GNI per capita increased 32% from 33 380 to 44 167. Compared to the G7, on average BRICS's GDP per capita and GNI per capita grew faster than G7. G7's GDP per capita only grew faster during 1995, 1995, 1997 and 1998 and G7's GNI per capita only grew faster during 1995, 1997 and 1998.

In real terms, using 2011 international dollars PPP, BRICS GDP increase by 6 402 compared to 6 299 of G7 and BRICS GNI increase 10 227 compared to 10 787.

As seen in Table 7, G7 increased the most in terms of dollar value of GDP per capita, 10 229 compared 6 402 of BRICS. BRICS increased the most in terms of GDP percentage change 189% compared to 31% of G7. As seen in Table 8, G7 increased the most in terms of GNI $10 787 compared to $6 299 of BRICS. BRICS increased the most in percentage change in GNI per capita 188% compared to 32% of G7.

G7 has a higher GNI per capita compared to GDP per capita suggesting that the organisations in G7 countries own operations in other countries. In addition, BRICS is a producer of output which belongs to other countries as their GDP per capita exceeds their GNI per capita.

Further, from 1993 to 2013, G7 countries have GNI per capita growing faster than GDP per capita, suggesting that there is an increase in the number of local-owned operations in foreign countries; while BRICS has increasingly become a destination for foreign companies to own local operations.

Jorgenson and Vu (2013) found that the G7 countries' recovery from the 2008-2009 recession was slow and by 2013 trade had increased again. The concept 2 inequality data correlates with this finding, as both GDP per capita and GNI per capita were at a high in 2007, dropped till 2012 and finally exceed 2007 levels in 2013. Interestingly, BRICS continued to grow from 2007 to 2013, each year.

Research on global income inequality (Dowrick & Akmal, 2005; Melchior et al., 2000; Milanovic, 2002a, 2012), found a convergence on income of global incomes; this research paper found a convergence on income between BRICS and G7, using either GDP per capita or GNI per capita, from 1993 to 2013. The growth in GDP and GNI per capita in China and India have contributed significantly to the increase in BRICS average GDP per capita and GNI per capita; which supports studies done by Sala-i-Martin (2002), Milanovic (2002a), Milanovic (2002b), Milanovic (2012), Bhalla (2002) and Dowrick and Akmal (2005).

With reference to table 25 below, the paper has found that comparing income per capita based on the Concept 2 inequality definition, from 1993 to 2013; BRICS GDP per capita grew by 6 402 (189%) from 3 389 to 9 791, BRICS, excluding China, grew by 3 557 (77%), from 4 607 to 8 164 and BRICS, excluding China and India, grew by 5 858 (49%) from 11 982 to 17 840; which when compared to G7, all of which grew less in terms of dollar value 10 229 and more in terms of income per capita growth by 31%.

In addition, BRICS GNI per capita grew by 6 299 (188%) from 3 356 to 9 655, BRICS excluding China grew by 3 449 (76%), from 4 548 to 7 997 and BRICS excluding China and India, grew by 5 508 (47%) from 11 834 to 17 342; which when compared to G7, all of which grew less in terms of dollar value 10 787 and more in terms of income per capita growth by 32%.

Table 25: Income per capita BRICS, BRICS ex. China & BRICS ex. China + India

Year	GDP per capita				GDP per capita			
	BRICS	BRICS ex China	BRICS ex China and India	G7	BRICS	BRICS ex China	BRICS ex China and India	G7
1993	3 389	4 607	11 982	33 255	3 356	4 548	11 834	33 380
2013	9 791	8 164	17 840	43 484	9 655	7 997	17 342	44 167
Change 1993 - 2013	6 402	3 557	5 858	10 229	6 299	3 449	5 508	10 787
% Change 1993 - 2013	189%	77%	49%	31%	188%	76%	47%	32%

5.4 Conclusion

The chapter began by examining changes in the demographic profiles in terms of GDP, GNI and Population from 1993 to 2013. China and India's percentage share of total GDP and total GNI have increased, at the expense of the other BRICS and G7 countries. Overall, BRICS percentage of GDP and GNI has increased during this period. Brazil, India, South Africa and the United States of America's percentage of population relative to the sample increased. Canada's remained constant, while China, France, Germany, Russia and United Kingdom experienced a decrease in percentage relative to the group. Overall BRICS percentage of population increased during this period. .

The paper then discussed research question 1, which wanted to determine how average income has changed across BRICS and G7 countries from 1993 to 2013. The paper concluded that USA, Canada and the UK and Germany increased the most in terms of dollar value of GDP per capita. In terms of GDP percentage change, China, India, Russia and Brazil increased the most. The USA, Canada, Germany and the UK increased the most in terms of dollar value of GNI per capita and in

percentage change in GNI per capita China, India, Russia and Brazil increased the most.

Italy, South Africa, India and Brazil increased the least in terms of dollar value of GDP per capita. In terms of GDP percentage change Italy, Japan, France and South Africa increased the least. South Africa, India, Italy and Brazil increased the least in terms of dollar value of GNI per capita and in terms of percentage change in GNI per capita Italy, Japan, France and South Africa increased the most.

The top four fastest growing countries in terms of GDP per capita growth and GNI per capita growth consisted of BRICS countries, while top four fastest growing countries in terms of GDP per capita and GNI per capita consisted of G7 countries.

China, India, Russia, South Africa and the United Kingdom's GDP per capita exceeds their GNI per capita therefore are currently producers of output which belong to other countries and from 1993 to 2013, their GNI per capita growth has been faster than GDP per capita growth from China, India, Russia, South Africa suggesting that there has been a larger increase in foreign-owned operations in these countries relative to the sample.

During the 2008 and 2009 recession, China and India are the only two countries from the sample that experienced GDP per capita and GNI per capita growth year on year.

Lastly, the chapter concluded with discussion on research question 2, which wanted to determine how average income has changed across BRICS and G7 groups from 1993 to 2013. The paper has found that BRICS GDP per capita and GNI per capita grew faster than G7's GDP per capita and GNI per capita; however in real terms G7's GDP per capita and GNI per capita grew by more from 1993 to 2013.

BRICS also had a higher GDP per capita compared to GNI per capita and BRICS' GDP per capita grew faster GNI per capita. The converse was observed with G7, suggest the BRICS is benefiting from product output for foreign-owned enterprise and G7 is benefiting from owning operations in foreign countries.

BRICS' income per capita continued to grow year on year, during and after the 2008 recession; while G7 income per capita decreased and increased back to 2007 peak levels in 2013.

A convergence of income was observed between BRICS and G7 and even when China or China and India were excluded from the BRICS definition, Brazil, Russia and South Africa's income per capita increased faster than G7's income per capita; although G7's real dollar value growth is larger than BRICS, BRICS excluding China and BRICS excluding China and India.

6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The chapter begins by discussing the conclusions of the research paper. Next, recommendations are provided to stakeholders who may be interested in the research paper. The chapter is concluded with suggestions for further research to expand the body of knowledge on global income inequality.

6.2 Conclusions of the study

China and India's percentage share of total GDP and total GNI have increased, at the expense of the other BRICS and G7 countries, which assisted BRICS's overall percentage of GDP and GNI has increase from 1993 to 2013. Brazil, India, South Africa and the United States of America's percentage of population relative to the sample increased. Canada's remained constant, while China, France, Germany, Russia and United Kingdom experienced a decrease in percentage, relative to the group. From 1993-2013, BRICS percentage of population increased.

The research paper has shown that between BRICS and G7 countries from 1994-2013, using concept 1 inequality, the top four gainers in terms of GDP per capita and GNI per capita were G7 countries, while the top four gainers in terms of GDP per capita growth and GNI per capita growth were BRICS countries, as in Table 24

The USA, Canada, UK and Germany have been the largest gainers in terms of GDP per capita and GNI per capita. China, India Russia and Brazil have been the largest gainers in terms of growth of GDP per capita and GNI per capita.

Using concept 2 inequalities to compare BRICS and G7 countries, both BRICS and G7 experienced growth in GDP per capita and GNI per capita. From 1993-2013, BRICS increased GDP per capita by $ 6 402 and GNI per capita by $ 6 299; while G7 increased GDP per capita by $ 10 229 and GNI per capita by $ 10 787.

Although, G7 experienced a larger dollar value change in GDP per capita and GNI per capita, BRICS experience higher growth. BRICS GDP per capita increased by 189% and GNI per capita by 188%; while G7's GDP per capita increased by 31% and GNI per capita by 32%.

The paper show that there is a convergence of income between BRICS and G7 groups and therefore a decrease in income inequality between the groups, which correlated with global income inequality studies by (Dowrick & Akmal, 2005; Melchior et al., 2000; Milanovic, 2002a, 2012).

Using concept 2 inequality data, the paper also supported Jorgenson and Vu (2013) finding that G7 countries only started to see increased in trade in 2013; as both GDP per capita and GNI per capita were at a high in 2007, dropped till 2012 and finally exceed 2007 levels in 2013. BRICS grew year on year from 2007 to 2013.

Due to the higher growth rates associated with BRICS GDP per capita and GNI per capita a convergence of income was observed between BRICS and G7; therefore income inequality between the two groups is decreasing.

All G7 countries, with the exception of the United Kingdom have higher GNI per capita compared to GDP per capita suggesting that the organisations in G7 countries own operations in other countries. In addition, China, India, Russia, South Africa and the United Kingdom are producers of output which belong to other countries as their GDP per capita exceeds their GNI per capita.

Further, from 1993 to 2013, all G7 countries, with the exception of the United Kingdom, have GNI per capita growing faster than GDP per capita, suggesting that there is an increase in the number of local-owned operations in foreign countries, while China, India, Russia, South Africa and the United Kingdom have increasingly become a destination for foreign companies to own local operations.

A convergence of income was observed between BRICS and G7. A convergence is also observed when China was excluded from BRICS and compared to G7 and when China and India where excluded from the BRICS definition. Brazil, Russia and South Africa's GDP per capita and GNI per capita increased faster than G7's GDP per capita and GNI per capita increased per capita; although G7's real dollar value GDP per capita and GNI per capita growth is larger than BRICS, BRICS excluding China and BRICS excluding China and India.

6.3 Recommendations

Governments need to understand where their countries are currently in terms of income per capita and where they want to be, and then create plans to get there. Governments must monitor GDP per capita and GNI per capita as key measures of a country's success and benchmark these values and growth relative to other countries. By monitoring income inequality and identifying gainers and losers, key lessons can be learnt and applied to improve global competitiveness and overall global well-being. In addition, governments and policy makes must consult and explore reasons other countries have managed to grow rapidly and adopt these approaches in an attempt to increase income per capita growth.

Although convergence was observed between BRICS and G7; G7 countries continue to outgrow BRICS in real terms, more needs to be done by government and policy makers and international governing bodies to reduce the income inequality between BRICS and G7.

Economic modelling on fast growing economies needs to be performed again, as the original predictions by Goldman Sachs (BRICS, 2016a; Koba, 2011) on BRICS' economic growth may no longer be valid (Soergel, 2015). As seen in Table 26, The IMF predicts that all BRICS countries, excluding India, have weaker near term prospects, although all BRICS countries have improved medium term prospects, excluding Russia (International Monetary Fund, 2014a, 2014b, 2015a, 2015b, 2015c). In addition, with the emergence of the Taiwan and South Korea economies (Johnson, 2016), and the negative near-term outlook for the BRICS economies, as seen in Table 26, should a new emerging market classification be formed? Should Taiwan and South Korea be included into BRICS? Should Brazil, Russia and South Africa be excluded from BRICS?

Table 26: Summary of IMF country prospects of BRICS

Country	Near-term prospect	Medium-term prospects
Brazil	Weaker	Improved
China	Weaker	Improved
India	Improved	Improved
Russia	Weaker	Weaker
South Africa	Weaker	Improved

An economic reporter at U.S. News, (Soergel, 2015) noted that BRICS future prospects may be not as great as originally forecast because of the following:

- The Chinese economy is slowing down and Brazil, Russia, India and South Africa have high concentration of exports to China and will be impacted by

this slowdown, especially Brazil and Russia. In addition, Brazil and Russia are currently in a recession.

- Brazil's and China's credit to GDP ratios are growing at an unhealthy rate and combined with a currency devaluations could pose an even greater risk to these countries' economic outlook. At present, Russia is experiencing high price inflation and facing sanctions, following its involvement in the Ukrainian debacle.
- Brazil's economy has been moved to junk status by Moody's and Standard and Poor (S&P) (Soergel, 2015; The BRICS Post, 2016). India and South Africa are economies may also be downgraded, given their slowing growth and South Africa's energy problems.

On the upside, India is currently benefiting from lower commodity prices; the BRICS development bank has been started and BRICS' intention to combine efforts (Soergel, 2015) could result the economic success of BRICS. India may soon lead BRICS growth, given China's slowdown and prospects (Hawksworth & Chan, 2015).

6.4 Suggestions for further research

This paper focused on income inequality between BRICS and G7 groups, the research could be expanded to groups of interest, such as the Southern Africa Development Community (SADAC) and the rest of Africa; or comparing income inequality across continents, such as Africa compared to South America; or comparing BRICS, Taiwan and South Korea to G7 countries.

Changes to income inequality post 2013 between BRICS and G7, potentially including Taiwan and South Korea, to confirm if the Chinese economy grows more slowly do the Taiwan, South Korea and Indian economies grow faster; and do Brazilian, Russian and South African economies recover?

Income per capita is a lagging indicator to overall well-being. Further research on lead indicators needs to be analysed to proactively predict and take action to factors impacting income per capita for each individual country. A country's policy decisions must focus on improving GDP per capita and GNI per capita; or the impact of the policy decision on GDP per capita and GNI per capita. Understanding the relationships between education, healthcare on income per capita and other measures of well-being can help prioritise policies; and terms of policies to include a more global view of issues that need to be addressed. More research on the relationships between drivers of improved income can help with budget decisions and priorities.

In addition, income inequality is a single aspect of financial inequality; more research on other types of inequality (human inequality, natural inequality) can also be analysed to develop a more comprehensive view of global inequality.

Organisations with global interests need to understand the implications of increasing GDP and GNI in a country and the additional value that can be realised from foreign investment by increasing income levels. Research on the relationship between employee income and productivity and/or organisational value can be conducted to unpack this area further.

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APPENDIX A

A.1 GDP and GNI Changes

A.1.1 Brazil

Table 27: Brazil GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
Brazil	**1993**	1 635	0%	1 596	0%
	1994	1 722	5%	1 658	4%
	1995	1 798	4%	1 735	5%
	1996	1 838	2%	1 782	3%
	1997	1 900	3%	1 833	3%
	1998	1 907	0%	1 815	-1%
	1999	1 916	0%	1 810	0%
	2000	2 000	4%	1 910	6%
	2001	2 026	1%	1 936	1%
	2002	2 088	3%	1 998	3%
	2003	2 113	1%	2 023	1%
	2004	2 233	6%	2 148	6%
	2005	2 303	3%	2 214	3%
	2006	2 395	4%	2 298	4%
	2007	2 539	6%	2 436	6%
	2008	2 667	5%	2 540	4%
	2009	2 660	0%	2 538	0%
	2010	2 862	8%	2 815	11%
	2011	2 974	4%	2 924	4%
	2012	3 026	2%	2 986	2%
	2013	3 109	3%	3 063	3%
Grand Total		47 711	-	46 057	-

A.1.2 Canada

Table 28: Canada GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
Canada	**1993**	877	0%	849	0%
	1994	917	5%	886	4%
	1995	942	3%	911	3%
	1996	958	2%	927	2%
	1997	999	4%	969	5%
	1998	1 040	4%	1 007	4%
	1999	1 092	5%	1 057	5%
	2000	1 148	5%	1 119	6%
	2001	1 168	2%	1 136	1%
	2002	1 200	3%	1 171	3%
	2003	1 223	2%	1 194	2%
	2004	1 262	3%	1 235	3%
	2005	1 302	3%	1 275	3%
	2006	1 336	3%	1 315	3%
	2007	1 363	2%	1 343	2%
	2008	1 379	1%	1 358	1%
	2009	1 341	-3%	1 318	-3%
	2010	1 386	3%	1 360	3%
	2011	1 428	3%	1 401	3%
	2012	1 455	2%	1 430	2%
	2013	1 484	2%	1 463	2%
Grand Total		25 300	-	24 724	-

A.1.3 China

Table 29: China GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
China	**1993**	2 449	0%	2 443	0%
	1994	2 769	13%	2 763	13%
	1995	3 073	11%	3 021	9%
	1996	3 378	10%	3 327	10%
	1997	3 690	9%	3 645	10%
	1998	3 980	8%	3 913	7%
	1999	4 283	8%	4 224	8%
	2000	4 644	8%	4 586	9%
	2001	5 030	8%	4 955	8%
	2002	5 487	9%	5 428	10%
	2003	6 037	10%	5 996	10%
	2004	6 645	10%	6 624	10%
	2005	7 399	11%	7 343	11%
	2006	8 338	13%	8 319	13%
	2007	9 522	14%	9 539	15%
	2008	10 438	10%	10 497	10%
	2009	11 402	9%	11 378	8%
	2010	12 614	11%	12 557	10%
	2011	13 810	9%	13 681	9%
	2012	14 881	8%	14 841	8%
	2013	16 024	8%	15 889	7%
Grand Total		155 892	-	154 968	-

A.1.4 France

Table 30: France GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
France	**1993**	1 757	0%	1 769	0%
	1994	1 798	2%	1 807	2%
	1995	1 835	2%	1 844	2%
	1996	1 861	1%	1 879	2%
	1997	1 904	2%	1 929	3%
	1998	1 972	4%	1 999	4%
	1999	2 039	3%	2 081	4%
	2000	2 118	4%	2 158	4%
	2001	2 160	2%	2 199	2%
	2002	2 184	1%	2 206	0%
	2003	2 202	1%	2 230	1%
	2004	2 263	3%	2 296	3%
	2005	2 299	2%	2 340	2%
	2006	2 354	2%	2 401	3%
	2007	2 410	2%	2 460	2%
	2008	2 414	0%	2 466	0%
	2009	2 343	-3%	2 386	-3%
	2010	2 389	2%	2 438	2%
	2011	2 439	2%	2 495	2%
	2012	2 443	0%	2 478	-1%
	2013	2 459	1%	2 498	1%
Grand Total		45 643	-	46 360	-

A.1.5 Germany

Table 31: Germany GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
Germany	**1993**	2 652	0%	2 672	0%
	1994	2 718	2%	2 719	2%
	1995	2 765	2%	2 760	2%
	1996	2 787	1%	2 786	1%
	1997	2 839	2%	2 831	2%
	1998	2 895	2%	2 876	2%
	1999	2 953	2%	2 928	2%
	2000	3 040	3%	3 021	3%
	2001	3 092	2%	3 066	2%
	2002	3 092	0%	3 055	0%
	2003	3 070	-1%	3 043	0%
	2004	3 106	1%	3 128	3%
	2005	3 128	1%	3 156	1%
	2006	3 243	4%	3 300	5%
	2007	3 349	3%	3 399	3%
	2008	3 385	1%	3 419	1%
	2009	3 195	-6%	3 268	-4%
	2010	3 325	4%	3 392	4%
	2011	3 447	4%	3 534	4%
	2012	3 461	0%	3 543	0%
	2013	3 471	0%	3 547	0%
Grand Total		65 013	-	65 445	-

A.1.6 India

Table 32: India GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
India	**1993**	1 724	0%	1 700	0%
	1994	1 838	7%	1 815	7%
	1995	1 978	8%	1 956	8%
	1996	2 127	8%	2 107	8%
	1997	2 213	4%	2 194	4%
	1998	2 350	6%	2 330	6%
	1999	2 558	9%	2 538	9%
	2000	2 656	4%	2 628	4%
	2001	2 784	5%	2 760	5%
	2002	2 890	4%	2 871	4%
	2003	3 117	8%	3 095	8%
	2004	3 364	8%	3 341	8%
	2005	3 677	9%	3 651	9%
	2006	4 017	9%	3 987	9%
	2007	4 411	10%	4 393	10%
	2008	4 583	4%	4 556	4%
	2009	4 971	8%	4 942	8%
	2010	5 481	10%	5 424	10%
	2011	5 845	7%	5 795	7%
	2012	6 142	5%	6 071	5%
	2013	6 566	7%	6 486	7%
Grand Total		75 296	-	74 641	-

A.1.7 Italy

Table 33: Italy GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
Italy	**1993**	1 770	0%	1 745	0%
	1994	1 808	2%	1 780	2%
	1995	1 861	3%	1 838	3%
	1996	1 885	1%	1 866	2%
	1997	1 919	2%	1 910	2%
	1998	1 950	2%	1 939	2%
	1999	1 981	2%	1 977	2%
	2000	2 054	4%	2 046	4%
	2001	2 090	2%	2 084	2%
	2002	2 096	0%	2 086	0%
	2003	2 099	0%	2 088	0%
	2004	2 132	2%	2 128	2%
	2005	2 152	1%	2 155	1%
	2006	2 196	2%	2 203	2%
	2007	2 228	1%	2 229	1%
	2008	2 205	-1%	2 184	-2%
	2009	2 084	-5%	2 081	-5%
	2010	2 119	2%	2 114	2%
	2011	2 132	1%	2 125	1%
	2012	2 072	-3%	2 067	-3%
	2013	2 036	-2%	2 030	-2%
Grand Total		42 867	-	42 674	-

A.1.8 Japan

Table 34: Japan GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
Japan	**1993**	3 809	0%	3 845	0%
	1994	3 842	1%	3 875	1%
	1995	3 917	2%	3 951	2%
	1996	4 019	3%	4 067	3%
	1997	4 083	2%	4 141	2%
	1998	4 001	-2%	4 059	-2%
	1999	3 993	0%	4 047	0%
	2000	4 083	2%	4 139	2%
	2001	4 098	0%	4 170	1%
	2002	4 110	0%	4 180	0%
	2003	4 179	2%	4 252	2%
	2004	4 278	2%	4 361	3%
	2005	4 333	1%	4 438	2%
	2006	4 407	2%	4 536	2%
	2007	4 503	2%	4 658	3%
	2008	4 457	-1%	4 606	-1%
	2009	4 210	-6%	4 330	-6%
	2010	4 406	5%	4 526	5%
	2011	4 386	0%	4 523	0%
	2012	4 463	2%	4 604	2%
	2013	4 535	2%	4 700	2%
Grand Total		88 114	-	90 010	-

A.1.9 Russia

Table 35: Russia GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
Russia	**1993**	2 127	0%	2 121	0%
	1994	1 859	-13%	1 866	-12%
	1995	1 782	-4%	1 782	-4%
	1996	1 718	-4%	1 709	-4%
	1997	1 742	1%	1 721	1%
	1998	1 650	-5%	1 598	-7%
	1999	1 756	6%	1 706	7%
	2000	1 931	10%	1 896	11%
	2001	2 029	5%	2 018	6%
	2002	2 126	5%	2 104	4%
	2003	2 281	7%	2 232	6%
	2004	2 444	7%	2 411	8%
	2005	2 600	6%	2 554	6%
	2006	2 812	8%	2 744	7%
	2007	3 052	9%	2 998	9%
	2008	3 213	5%	3 127	4%
	2009	2 961	-8%	2 885	-8%
	2010	3 095	5%	3 011	4%
	2011	3 227	4%	3 124	4%
	2012	3 336	3%	3 219	3%
	2013	3 381	1%	3 245	1%
Grand Total		51 124	-	50 072	-

A.1.10 South Africa

Table 36: South Africa GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
South Africa	**1993**	358	0%	351	0%
	1994	369	3%	363	3%
	1995	381	3%	374	3%
	1996	397	4%	389	4%
	1997	407	3%	399	3%
	1998	409	0%	401	0%
	1999	419	2%	410	2%
	2000	437	4%	428	4%
	2001	449	3%	436	2%
	2002	465	4%	455	4%
	2003	479	3%	467	3%
	2004	501	5%	492	5%
	2005	527	5%	518	5%
	2006	557	6%	547	6%
	2007	586	5%	568	4%
	2008	605	3%	587	3%
	2009	596	-2%	583	-1%
	2010	614	3%	601	3%
	2011	634	3%	617	3%
	2012	648	2%	630	2%
	2013	662	2%	645	2%
Grand Total		10 499	-	10 263	-

A.1.11 United Kingdom

Table 37: United Kingdom GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
	1993	1 516	0%	1 514	0%
	1994	1 577	4%	1 576	4%
	1995	1 654	5%	1 653	5%
	1996	1 698	3%	1 697	3%
	1997	1 751	3%	1 751	3%
	1998	1 810	3%	1 811	3%
	1999	1 867	3%	1 865	3%
	2000	1 937	4%	1 951	5%
	2001	1 991	3%	2 012	3%
	2002	2 041	2%	2 075	3%
	2003	2 109	3%	2 146	3%
	2004	2 161	2%	2 202	3%
	2005	2 226	3%	2 281	4%
	2006	2 285	3%	2 312	1%
	2007	2 344	3%	2 370	3%
	2008	2 333	0%	2 341	-1%
	2009	2 235	-4%	2 244	-4%
	2010	2 270	2%	2 299	2%
	2011	2 315	2%	2 344	2%
United	**2012**	2 342	1%	2 344	0%
Kingdom	**2013**	2 393	2%	2 369	1%
Grand Total		42 855	-	43 160	-

A.1.12 United States of America

Table 38: United States of America GDP and GNI and growth year on year

Country	Year	GDP	% Change in GDP	GNI	% Change in GNI
United States	**1993**	9 836	0%	9 907	0%
0	**1994**	10 233	4%	10 292	4%
0	**1995**	10 512	3%	10 577	3%
0	**1996**	10 911	4%	10 981	4%
0	**1997**	11 400	4%	11 461	4%
0	**1998**	11 908	4%	11 961	4%
0	**1999**	12 465	5%	12 532	5%
0	**2000**	12 976	4%	13 055	4%
0	**2001**	13 102	1%	13 199	1%
0	**2002**	13 336	2%	13 429	2%
0	**2003**	13 711	3%	13 825	3%
0	**2004**	14 230	4%	14 369	4%
0	**2005**	14 706	3%	14 847	3%
0	**2006**	15 098	3%	15 209	2%
0	**2007**	15 366	2%	15 538	2%
0	**2008**	15 321	0%	15 538	0%
0	**2009**	14 896	-3%	15 090	-3%
0	**2010**	15 273	3%	15 522	3%
0	**2011**	15 518	2%	15 803	2%
0	**2012**	15 878	2%	16 151	2%
0	**2013**	16 230	2%	16 514	2%
Grand Total		282 906		285 800	

A.2 Population Changes

A.2.1 Brazil

Table 39: Brazil Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
Brazil	**1993**	158	0%
	1994	160	2%
	1995	163	2%
	1996	165	2%
	1997	168	2%
	1998	171	2%
	1999	173	2%
	2000	176	2%
	2001	178	1%
	2002	181	1%
	2003	184	1%
	2004	186	1%
	2005	188	1%
	2006	191	1%
	2007	193	1%
	2008	195	1%
	2009	197	1%
	2010	199	1%
	2011	201	1%
	2012	202	1%
	2013	204	1%
Grand Total		3 832	26%

A.2.2 Canada

Table 40: Canada Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
Canada	**1993**	29	0%
	1994	29	1%
	1995	29	1%
	1996	30	1%
	1997	30	1%
	1998	30	1%
	1999	30	1%
	2000	31	1%
	2001	31	1%
	2002	31	1%
	2003	32	1%
	2004	32	1%
	2005	32	1%
	2006	33	1%
	2007	33	1%
	2008	33	1%
	2009	34	1%
	2010	34	1%
	2011	34	1%
	2012	35	1%
	2013	35	1%
Grand Total		667	20%

A.2.3 China

Table 41: China Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
China	**1993**	1 178	0%
	1994	1 192	1%
	1995	1 205	1%
	1996	1 218	1%
	1997	1 230	1%
	1998	1 242	1%
	1999	1 253	1%
	2000	1 263	1%
	2001	1 272	1%
	2002	1 280	1%
	2003	1 288	1%
	2004	1 296	1%
	2005	1 304	1%
	2006	1 311	1%
	2007	1 318	1%
	2008	1 325	1%
	2009	1 331	0%
	2010	1 338	0%
	2011	1 344	0%
	2012	1 351	0%
	2013	1 357	0%
Grand Total		26 895	14%

A.2.4 France

Table 42: France Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
France	**1993**	59	0%
	1994	59	0%
	1995	60	0%
	1996	60	0%
	1997	60	0%
	1998	60	0%
	1999	60	1%
	2000	61	1%
	2001	61	1%
	2002	62	1%
	2003	62	1%
	2004	63	1%
	2005	63	1%
	2006	64	1%
	2007	64	1%
	2008	64	1%
	2009	65	1%
	2010	65	0%
	2011	65	0%
	2012	66	0%
	2013	66	0%
Grand Total		1 309	11%

A.2.5 Germany

Table 43: Germany Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
Germany	**1993**	81	0%
	1994	81	0%
	1995	82	0%
	1996	82	0%
	1997	82	0%
	1998	82	0%
	1999	82	0%
	2000	82	0%
	2001	82	0%
	2002	82	0%
	2003	83	0%
	2004	83	0%
	2005	82	0%
	2006	82	0%
	2007	82	0%
	2008	82	0%
	2009	82	0%
	2010	82	0%
	2011	82	0%
	2012	80	-2%
	2013	81	0%
Grand Total		1 720	-1%

A.2.6 India

Table 44: India Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
India	**1993**	924	0%
	1994	943	2%
	1995	961	2%
	1996	979	2%
	1997	998	2%
	1998	1 016	2%
	1999	1 035	2%
	2000	1 053	2%
	2001	1 072	2%
	2002	1 090	2%
	2003	1 108	2%
	2004	1 126	2%
	2005	1 144	2%
	2006	1 162	2%
	2007	1 180	2%
	2008	1 197	1%
	2009	1 214	1%
	2010	1 231	1%
	2011	1 247	1%
	2012	1 264	1%
	2013	1 279	1%
Grand Total		2 667	2%

A.2.7 Italy

Table 45: Italy Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
Italy	**1993**	57	0%
	1994	57	0%
	1995	57	0%
	1996	57	0%
	1997	57	0%
	1998	57	0%
	1999	57	0%
	2000	57	0%
	2001	57	0%
	2002	57	0%
	2003	57	0%
	2004	58	1%
	2005	58	0%
	2006	58	0%
	2007	58	1%
	2008	59	1%
	2009	59	0%
	2010	59	0%
	2011	59	0%
	2012	60	0%
	2013	60	1%
Grand Total		1 215	6%

A.2.8 Japan

Table 46: Japan Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
Japan	**1993**	125	0%
	1994	125	0%
	1995	125	0%
	1996	126	0%
	1997	126	0%
	1998	126	0%
	1999	127	0%
	2000	127	0%
	2001	127	0%
	2002	127	0%
	2003	128	0%
	2004	128	0%
	2005	128	0%
	2006	128	0%
	2007	128	0%
	2008	128	0%
	2009	128	0%
	2010	128	0%
	2011	128	0%
	2012	128	0%
	2013	127	0%
Grand Total		2 667	2%

A.2.9 Russia

Table 47: Russia Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
Russian Federation	**1993**	149	0%
	1994	148	0%
	1995	148	0%
	1996	148	0%
	1997	148	0%
	1998	148	0%
	1999	147	0%
	2000	147	0%
	2001	146	0%
	2002	145	0%
	2003	145	0%
	2004	144	0%
	2005	144	0%
	2006	143	0%
	2007	143	0%
	2008	143	0%
	2009	143	0%
	2010	143	0%
	2011	143	0%
	2012	143	0%
	2013	144	0%
Grand Total		3 050	-3%

A.2.10 South Africa

Table 48: Brazil Population (in millions) and growth year on year.

Country	Year	Population	% Change in Population
South Africa	**1993**	37	0%
	1994	38	2%
	1995	39	2%
	1996	40	2%
	1997	41	2%
	1998	42	2%
	1999	43	2%
	2000	44	3%
	2001	45	2%
	2002	46	1%
	2003	46	1%
	2004	47	1%
	2005	47	1%
	2006	48	1%
	2007	49	1%
	2008	49	1%
	2009	50	1%
	2010	51	1%
	2011	52	1%
	2012	52	2%
	2013	53	2%
Grand Total		959	35%

A.2.11 United Kingdom

Table 49: United Kingdom Population (in millions) and growth year on year.

Country	Year	GDP per capita	% Change in GDP per capita
United Kingdom	**1993**	58	0%
	1994	58	0%
	1995	58	0%
	1996	58	0%
	1997	58	0%
	1998	58	0%
	1999	59	0%
	2000	59	0%
	2001	59	0%
	2002	59	0%
	2003	60	0%
	2004	60	1%
	2005	60	1%
	2006	61	1%
	2007	61	1%
	2008	62	1%
	2009	62	1%
	2010	63	1%
	2011	63	1%
	2012	64	1%
	2013	64	1%
Grand Total		1 265	11%

A.2.12 United States of America

Table 50: United States Population (in millions) and growth year on year.

Country	Year	GDP per capita	% Change in GDP per capita
United States	**1993**	260	0%
	1994	263	1%
	1995	266	1%
	1996	269	1%
	1997	273	1%
	1998	276	1%
	1999	279	1%
	2000	282	1%
	2001	285	1%
	2002	288	1%
	2003	290	1%
	2004	293	1%
	2005	296	1%
	2006	298	1%
	2007	301	1%
	2008	304	1%
	2009	307	1%
	2010	309	1%
	2011	312	1%
	2012	314	1%
	2013	316	1%
Grand Total		6 082	20%

APPENDIX B

B.1 Results pertaining to Research Question 1

B.1.1 Brazil

Table 51 to Table 62, in Appendix display GDP per capita, percentage change in GDP per capita, GNI per capita and percentage change in GNI per capita from 1993 to 2013 for BRICS and G7 economies, ranked in alphabetical order. The GDP per capita and GNI per capita for the year 1993 is 0%, as 1993 is the based year and growth from the previous year can't be calculated. Under each table, the values from the table are then represented in a graph, with the year in the horizontal axis and income (GNI per capita and GDP capita) in the primary vertical axis and the percentage change income represented in the secondary axis.

Table 51: Brazil GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
Brazil	**1993**	10 360	0%	10 115	0%
	1994	10 746	4%	10 348	2%
	1995	11 049	3%	10 660	3%
	1996	11 117	1%	10 781	1%
	1997	11 316	2%	10 916	1%
	1998	11 181	-1%	10 646	-2%
	1999	11 065	-1%	10 451	-2%
	2000	11 377	3%	10 863	4%
	2001	11 353	0%	10 851	0%
	2002	11 532	2%	11 036	2%
	2003	11 508	0%	11 014	0%
	2004	11 997	4%	11 541	5%
	2005	12 220	2%	11 745	2%
	2006	12 561	3%	12 051	3%
	2007	13 171	5%	12 635	5%
	2008	13 691	4%	13 041	3%
	2009	13 525	-1%	12 903	-1%
	2010	14 409	7%	14 173	10%
	2011	14 831	3%	14 580	3%
	2012	14 952	1%	14 754	1%
	2013	15 222	2%	14 996	2%
Grand Total		259 182		250 100	

B.1.2 Canada

Table 52: Canada GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
Canada	**1993**	30 424	0%	29 432	0%
	1994	31 505	4%	30 425	3%
	1995	32 101	2%	31 033	2%
	1996	32 290	1%	31 251	1%
	1997	33 310	3%	32 318	3%
	1998	34 389	3%	33 297	3%
	1999	35 810	4%	34 665	4%
	2000	37 314	4%	36 368	5%
	2001	37 563	1%	36 540	0%
	2002	38 270	2%	37 342	2%
	2003	38 621	1%	37 699	1%
	2004	39 436	2%	38 602	2%
	2005	40 284	2%	39 470	2%
	2006	41 012	2%	40 369	2%
	2007	41 432	1%	40 827	1%
	2008	41 468	0%	40 834	0%
	2009	39 884	-4%	39 198	-4%
	2010	40 773	2%	39 990	2%
	2011	41 567	2%	40 808	2%
	2012	41 865	1%	41 139	1%
	2013	42 213	1%	41 605	1%
Grand Total		791 531		773 211	

B.1.3 China

Table 53: China GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
China	**1993**	2 078	0%	2 073	0%
	1994	2 323	12%	2 318	12%
	1995	2 551	10%	2 508	8%
	1996	2 775	9%	2 732	9%
	1997	3 000	8%	2 963	8%
	1998	3 205	7%	3 151	6%
	1999	3 419	7%	3 372	7%
	2000	3 678	8%	3 632	8%
	2001	3 955	8%	3 896	7%
	2002	4 285	8%	4 239	9%
	2003	4 685	9%	4 654	10%
	2004	5 127	9%	5 111	10%
	2005	5 675	11%	5 632	10%
	2006	6 360	12%	6 345	13%
	2007	7 225	14%	7 238	14%
	2008	7 880	9%	7 924	9%
	2009	8 565	9%	8 547	8%
	2010	9 430	10%	9 387	10%
	2011	10 274	9%	10 178	8%
	2012	11 017	7%	10 987	8%
	2013	11 805	7%	11 706	7%
Grand Total		119 311		118 594	

B.1.4 France

Table 54: France GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
France	**1993**	29 719	0%	29 933	0%
	1994	30 303	2%	30 458	2%
	1995	30 823	2%	30 971	2%
	1996	31 140	1%	31 440	2%
	1997	31 756	2%	32 170	2%
	1998	32 764	3%	33 212	3%
	1999	33 706	3%	34 407	4%
	2000	34 773	3%	35 431	3%
	2001	35 196	1%	35 836	1%
	2002	35 332	0%	35 699	0%
	2003	35 370	0%	35 821	0%
	2004	36 089	2%	36 621	2%
	2005	36 393	1%	37 035	1%
	2006	36 999	2%	37 746	2%
	2007	37 639	2%	38 427	2%
	2008	37 502	0%	38 306	0%
	2009	36 212	-3%	36 868	-4%
	2010	36 742	1%	37 499	2%
	2011	37 325	2%	38 185	2%
	2012	37 224	0%	37 754	-1%
	2013	37 306	0%	37 893	0%
Grand Total		730 313		741 712	

B.1.5 Germany

Table 55: Germany GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
Germany	**1993**	32 682	0%	32 922	0%
	1994	33 370	2%	33 389	1%
	1995	33 850	1%	33 791	1%
	1996	34 028	1%	34 005	1%
	1997	34 607	2%	34 512	1%
	1998	35 286	2%	35 058	2%
	1999	35 964	2%	35 667	2%
	2000	36 979	3%	36 743	3%
	2001	37 543	2%	37 237	1%
	2002	37 480	0%	37 037	-1%
	2003	37 193	-1%	36 864	0%
	2004	37 637	1%	37 914	3%
	2005	37 924	1%	38 273	1%
	2006	39 372	4%	40 060	5%
	2007	40 710	3%	41 319	3%
	2008	41 229	1%	41 635	1%
	2009	39 011	-5%	39 904	-4%
	2010	40 665	4%	41 477	4%
	2011	42 143	4%	43 206	4%
	2012	43 035	2%	44 058	2%
	2013	43 046	0%	43 984	0%
Grand Total		793 753		799 055	

B.1.6 India

Table 56: India GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
India	**1993**	1 865	0%	1 839	0%
	1994	1 950	5%	1 926	5%
	1995	2 058	6%	2 035	6%
	1996	2 172	6%	2 152	6%
	1997	2 218	2%	2 199	2%
	1998	2 312	4%	2 292	4%
	1999	2 471	7%	2 452	7%
	2000	2 521	2%	2 495	2%
	2001	2 598	3%	2 575	3%
	2002	2 651	2%	2 634	2%
	2003	2 813	6%	2 792	6%
	2004	2 987	6%	2 966	6%
	2005	3 213	8%	3 191	8%
	2006	3 457	8%	3 431	8%
	2007	3 739	8%	3 724	9%
	2008	3 828	2%	3 806	2%
	2009	4 094	7%	4 070	7%
	2010	4 453	9%	4 406	8%
	2011	4 686	5%	4 645	5%
	2012	4 861	4%	4 804	3%
	2013	5 132	6%	5 069	6%
Grand Total		66 080		65 504	

B.1.7 Italy

Table 57: Italy GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
Italy	**1993**	31 149	0%	30 712	0%
	1994	31 813	2%	31 317	2%
	1995	32 731	3%	32 327	3%
	1996	33 143	1%	32 816	2%
	1997	33 733	2%	33 575	2%
	1998	34 269	2%	34 075	1%
	1999	34 798	2%	34 728	2%
	2000	36 073	4%	35 928	3%
	2001	36 692	2%	36 570	2%
	2002	36 729	0%	36 555	0%
	2003	36 622	0%	36 430	0%
	2004	36 962	1%	36 886	1%
	2005	37 130	0%	37 170	1%
	2006	37 761	2%	37 890	2%
	2007	38 125	1%	38 142	1%
	2008	37 475	-2%	37 126	-3%
	2009	35 260	-6%	35 221	-5%
	2010	35 753	1%	35 661	1%
	2011	35 901	0%	35 783	0%
	2012	34 796	-3%	34 723	-3%
	2013	33 794	-3%	33 706	-3%
Grand Total		740 708		737 339	

B.1.8 Japan

Table 58: Japan GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
Japan	**1993**	30 587	0%	30 875	0%
	1994	30 746	1%	31 010	0%
	1995	31 224	2%	31 501	2%
	1996	31 958	2%	32 343	3%
	1997	32 391	1%	32 852	2%
	1998	31 656	-2%	32 113	-2%
	1999	31 535	0%	31 959	0%
	2000	32 193	2%	32 628	2%
	2001	32 230	0%	32 795	1%
	2002	32 248	0%	32 797	0%
	2003	32 721	1%	33 293	2%
	2004	33 483	2%	34 137	3%
	2005	33 916	1%	34 736	2%
	2006	34 468	2%	35 477	2%
	2007	35 183	2%	36 394	3%
	2008	34 800	-1%	35 968	-1%
	2009	32 880	-6%	33 813	-6%
	2010	34 404	5%	35 342	5%
	2011	34 316	0%	35 384	0%
	2012	34 988	2%	36 093	2%
	2013	35 614	2%	36 910	2%
Grand Total		693 541		708 419	

B.1.9 Russia

Table 59: Russia GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
Russia	**1993**	14 320	0%	14 282	0%
	1994	12 535	-12%	12 579	-12%
	1995	12 013	-4%	12 010	-5%
	1996	11 597	-3%	11 537	-4%
	1997	11 779	2%	11 637	1%
	1998	11 173	-5%	10 824	-7%
	1999	11 925	7%	11 587	7%
	2000	13 173	10%	12 932	12%
	2001	13 902	6%	13 827	7%
	2002	14 629	5%	14 481	5%
	2003	15 768	8%	15 430	7%
	2004	16 967	8%	16 735	8%
	2005	18 118	7%	17 797	6%
	2006	19 660	9%	19 181	8%
	2007	21 374	9%	20 997	9%
	2008	22 506	5%	21 904	4%
	2009	20 739	-8%	20 202	-8%
	2010	21 664	4%	21 076	4%
	2011	22 570	4%	21 855	4%
	2012	23 299	3%	22 477	3%
	2013	23 561	1%	22 611	1%
Grand Total			353 271		345 964

B.1.10 South Africa

Table 60: South Africa GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
South Africa	**1993**	9 546	0%	9 372	0%
	1994	9 643	1%	9 490	1%
	1995	9 730	1%	9 566	1%
	1996	9 925	2%	9 732	2%
	1997	9 952	0%	9 760	0%
	1998	9 770	-2%	9 565	-2%
	1999	9 766	0%	9 558	0%
	2000	9 927	2%	9 719	2%
	2001	9 988	1%	9 710	0%
	2002	10 213	2%	9 987	3%
	2003	10 382	2%	10 130	1%
	2004	10 715	3%	10 529	4%
	2005	11 133	4%	10 935	4%
	2006	11 597	4%	11 391	4%
	2007	12 052	4%	11 677	3%
	2008	12 263	2%	11 898	2%
	2009	11 903	-3%	11 644	-2%
	2010	12 087	2%	11 833	2%
	2011	12 291	2%	11 977	1%
	2012	12 375	1%	12 041	1%
	2013	12 454	1%	12 134	1%
Grand Total		227 712		222 647	

B.1.11 United Kingdom

Table 61: United Kingdom GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
United Kingdom	**1993**	26 261	0%	26 237	0%
	1994	27 248	4%	27 241	4%
	1995	28 513	5%	28 493	5%
	1996	29 200	2%	29 182	2%
	1997	30 027	3%	30 017	3%
	1998	30 951	3%	30 972	3%
	1999	31 808	3%	31 789	3%
	2000	32 898	3%	33 132	4%
	2001	33 676	2%	34 033	3%
	2002	34 370	2%	34 952	3%
	2003	35 352	3%	35 971	3%
	2004	36 026	2%	36 707	2%
	2005	36 851	2%	37 763	3%
	2006	37 555	2%	38 001	1%
	2007	38 228	2%	38 654	2%
	2008	37 751	-1%	37 884	-2%
	2009	35 896	-5%	36 027	-5%
	2010	36 164	1%	36 635	2%
	2011	36 590	1%	37 053	1%
	2012	36 765	0%	36 791	-1%
	2013	37 321	2%	36 959	0%
Grand Total		709 449		714 493	

B.1.12 United States

Table 62: United States GDP and GNI per Capita and growth year on year

Country	Year	GDP per capita	% Change in GDP per capita	GNI per Capita	% Change in GNI per capita
United States	1993	37 844	0%	38 114	0%
	1994	38 892	3%	39 116	3%
	1995	39 476	2%	39 723	2%
	1996	40 501	3%	40 761	3%
	1997	41 812	3%	42 033	3%
	1998	43 166	3%	43 361	3%
	1999	44 673	3%	44 910	4%
	2000	45 986	3%	46 267	3%
	2001	45 978	0%	46 318	0%
	2002	46 367	1%	46 690	1%
	2003	47 260	2%	47 656	2%
	2004	48 597	3%	49 074	3%
	2005	49 762	2%	50 240	2%
	2006	50 599	2%	50 973	1%
	2007	51 011	1%	51 583	1%
	2008	50 384	-1%	51 095	-1%
	2009	48 558	-4%	49 190	-4%
	2010	49 373	2%	50 177	2%
	2011	49 781	1%	50 696	1%
	2012	50 549	2%	51 418	1%
	2013	51 282	1%	52 176	1%
Grand Total		971 849		981 568	

APPENDIX C

Consistency matrix

The intention of the research is further develop research in income inequality and explore two areas in which have received little attention: (1) cross-country income differences,; and (2) Income differences between BRICS and G7 economies. Specifically the research will analyse differences across GDP and GNI as measures of income, which can be readily obtained from a reputable comparable public source; to determine income differences from 1993-2013 between (1) BRICS and G7 countries; (2) BRICS and G7 groups (3) which countries are benefiting by obtaining the larger share of income; (4) which countries are lagging by receiving a smaller share of global income; and lastly (5) if the income inequality between BRICS countries and G7 groups in widening.					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
The first sub problem will be to determine the changes in average income across BRICS and G7 countries from 1993 to 2013, using GDP per capita and GNI per capita	(Melchior, Telle, & Wiig, 2000), (Dornbusch, 1985; OECD, 2005), (Dowrick & Akmal, 2005), Milanovic (2006), (Milanovic, 2005), (Milanovic, 2012), (Milanovic, 2002), (Sala-i-Martin, 2002) and (Bhalla, 2002)	How has average income across BRICS and G7 countries changed from 1993 to 2013?	World Bank Databases	Nominal	Descriptive

The intention of the research is further develop research in income inequality and explore two areas in which have received little attention: (1) cross-country income differences,; and (2) Income differences between BRICS and G7 economies. Specifically the research will analyse differences across GDP and GNI as measures of income, which can be readily obtained from a reputable comparable public source; to determine income differences from 1993-2013 between (1) BRICS and G7 countries; (2) BRICS and G7 groups (3) which countries are benefiting by obtaining the larger share of income; (4) which countries are lagging by receiving a smaller share of global income; and lastly (5) if the income inequality between BRICS countries and G7 groups in widening.					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
The second sub problem will be to determine changes in income inequality across BRICS and G7 groups, using GDP per capita and GNI per capita	(Sala-i-Martin, 2002), (Milanovic, 2002a), (Milanovic, 2002b), (Capéau & Decoster, 2004), (Schultz, 1998), Milanovic (2012), Bhalla (2002), Dowrick and Akmal (2005), Cornia and Kiiski (2001), Jorgenson and Vu (2013), O'Neill and Goldman (2001), Ogrean and Herciu (2000), (Pogge, 2008)	How has population-weighted average income across BRICS and G7 groups changed from 1993 to 2013?	World Bank Databases	Nominal	Descriptive