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Measuring the Rate of Change in the MDG Period in Absolute and Relative Terms: Acceleration or Deceleration of Progress?

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Abstract

The purpose of the Millennium Development Goals (MDGs) has been debated depending on whether they should be seen as hard national planning targets or rather as means of inspiring development. This paper assesses whether there was any change in the rate of progress in the MDG period. This is done by calculating the absolute and relative rate of change for all official indicators of the MDGs with sufficient data. The findings are then assessed by considering how many countries showed increased improvements and by testing for significantly different means by conducting two-sample t-tests with Holm-Bonferroni corrections. Countries are also categorized and tested depending on different characteristics. I find that few indicators showed a significant change in the rate of progress in the MDG period compared to earlier. Also, some indicators decelerated. When considering the different country categories I find that low-income countries, least developed countries, and the most corrupt countries were the groups that had most indicators accelerating the MDG period.

Keywords: Economic development, Human development, Millennium Development Goals

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1. Introduction

Over the decades there have been several attempts of international cooperation for development of different extents, areas covered, and levels of cooperation, with varying results. With the introduction of the Millennium Development Goals (MDGs) at the turn of the millennium the international community in the United Nations (UN) agreed to a new comprehensive global partnership with the aim of tackling several key areas to improve the lives of people. Since their beginning, the MDGs have been a controversial topic as they have been considered successful by some and been criticized by others; their existence has engaged many people. The MDG period ended in 2015 and in the same year a similar new partnership was established in the UN; the 2030 Agenda for sustainable development. So, even before the period of the MDGs had ended and the goals could be completely evaluated, the global community had entered into an even more extensive partnership. With this thesis I want to study if there were any increased rates of improvements during the MDG period.

1.1 Background

1.1.1 An introduction to the MDGs

The MDGs were a result of the UN's Millennium Declaration, which was adopted in the year of 2000 by all member states of the UN (UN General Assembly, 2001). The Millennium Declaration states several resolutions made by the state representatives with the objective of improving the lives of humans through a broad range of areas; peace, security and disarmament, development and poverty eradication, protection of the environment, human rights, democracy and good governance, protecting the vulnerable, meeting the special needs of Africa, and strengthen the United Nations (UN General Assembly, 2000). Regarding development and poverty reduction, the declaration states "We are committed to making the right to development a reality for everyone and to freeing the entire human race from want." (UN General Assembly, 2000 p.4) and continues "We resolve therefore to create an environment – at the national and global levels alike – which is conducive to development and to the elimination of poverty" (UN General Assembly, 2000 p.4). To keep track of progress towards meeting the resolutions of the declaration, the UN together with representatives from the World Bank, the IMF, and the OECD, grouped together some of the goals from the Millennium Declaration, mainly from the section of development and poverty reduction, and developed a set of time-bound and measurable targets related to each goal (UN General Assembly, 2001). In the road map from 2001 that was created towards the implementation of the Millennium Declaration, this group of goals were presented as the Millennium Development Goals (UN General Assembly, 2001).

Related to each MDGs there were several targets. The initial number of targets were 18, but after adjustments in 2008 the final number of targets became 21. The targets quantified and put a time-bound on the goals; the idea was that numerical targets would trigger actions (UN General Assembly, 2001). The MDGs did not undercut any previous agreements and although they covered a broad spectrum of areas for development, see Table 1, they were interrelated and were all part of reaching the ultimate goal of eliminating poverty (UN General Assembly, 2001). The goals were a partnership in the international community "to create an environment – at the national and global level alike – which is conducive to development and elimination of poverty" (UN General Assembly, 2000 para, 12).

1.1.2 Monitoring the progress of the MDGs

To monitor the progress of the targets, and consequently the goals, several indicators were chosen as measurements. The road map acknowledged that some of the targets were easier to quantitatively monitor than others and that some indicators lacked good data, although this would hopefully change (UN General Assembly, 2001). The first official list of indicators became effective in 2003 and had 48 indicators, and after the addition of the new targets in 2008, the second, and final, list included 60 indicators. Additionally, some indicators were calculated for subnational levels. For a complete list of the goals, the targets, and the indicators, please see Appendix 1. The baseline year was set to 1990 and the end of the MDG period was set to 2015, although a few targets were expressed in other timelines (UN General Assembly, 2001).

Table 1. The Millennium Development Goals

Goal 1	Eradicate extreme poverty and hunger
Goal 2	Achieve universal primary education
Goal 3	Promote gender equality and empower women
Goal 4	Reduce child mortality
Goal 5	Improve maternal health
Goal 6	Combat HIV/AIDS, malaria and other diseases
Goal 7	Ensure environmental sustainability
Goal 8	Develop a global partnership for development

Source: United Nations Statistical Division Millennium Development Goals Indicators. (n.d.a).

During the MDG period data was gathered on the indicators and the UN reported on the progress towards the goals annually at country, regional, and global levels. The official monitoring reports used two standard methods to report progress. The first method was to simply study the most recent available data to determine whether the goal had been achieved. In the second method the, at the time, current trend was used to determine whether a country, region or the global community was on track to meet the target by 2015.

1.1.3 The end of the MDG period

In 2015, the last report on the MDGs was published by the UN (United Nations, 2015). In the foreword the then secretary-general of the UN, Ban Ki-Moon, writes that "The global mobilization behind the Millennium Development Goals has produced the most successful anti-poverty movement in history." (United Nations, 2015, p. 3). The MDGs are said to have changed countries' decision-making as they made governments prioritize the immediate needs of their people (United Nations, 2015, p. 3). However, it is also stated that progress was not even and that there were still inequalities; especially women, the poorest, and those having a disadvantage because of age, disability, or ethnicity, did not experience the same rate of progress as others during the MDG period (United Nations, 2015, p. 3). The 2015 report did not explicitly classify the goals to have been achieved or not, but no single goal reached all its targets (United Nations, 2015). On the global level Target 1A was reached but not in Sub-Sharan Africa. Targets 6A and 6C were also met on the global level (United Nations, 2015). No other targets for Goals 1–6 were achieved. The targets of Goals 7–8 are comprehensive and contains several different elements, out which not all are measurable, but Target 7D is stated to have been met, and Targets 8A, 8B, 8C, and 8F appear to have been met, while 8.D is partially met (United Nations, 2015). In 2015, data was still lacking for indicators of Target 8.E (United Nations, 2015). So, following a very positive foreword stating the success of the MDGs the report itself gave a mixed view about the success of achieving the goals.

1.2 Research question

Although the UN often have proclaimed the success of the MDGs, the academic community has expressed some more hesitance view on the topic (Easterly, 2009; Fukuda-Parr, Greenstein, & Stewart, 2013; Hailu & Tukada, 2001). The purpose of this thesis is to contribute to this debate by trying to answer the question: was there faster rate of progress after the introduction of the Millennium Development Goals? More specifically, this paper aims at not only survey the absolute rate of change in progress of several MDG indictors, but also the relative rate of change. In addition of conducting this analysis on a general level, I will also study whether there were any differences in the rate of progress depending on several country characteristics.

The rest of the paper is organized as follows; Section 2 provides an overview of the current literature, Section 3 states my hypothesis, Section 4 describes the methods that are used, Section 5 describes the data, Section 6 provides the findings, Section 7 discusses the findings and potential limitations and shortcomings, Section 8 concludes, and Section 9 contains references.

2 The current literature

2.1 Assessing the MDGs

During the MDG era there was an ongoing debate regarding the official methods of assessing the achievements of the goals. As already explained, the official reports simply evaluated progress against the set targets either by looking if the target had already been achieved, or if it was on track or not to be achieved by the end of the MDG period. However, the goals could be interpreted in two different ways; either as performance measures and thus as hard planning targets, or as goals with the purpose of motivating efforts towards progress (Easterly, 2009; Fukuda-Parr, Greenstein, & Stewart, 2013; Hailu & Tukada, 2001). Depending on the interpretation of the goals they could be assessed differently (Easterly, 2009; Fukuda-Parr et al. 2013; Hailu & Tukada, 2001).

Vandemorrtele, a former UN official that was part of developing the goals, explains that since the Millennium Declaration only states an end year for the initial goals that later became the MDGs, but not a base year this had to be added after the creation of the Millennium Declaration since some of the goals are expressed in relative terms (Vandemorrtele, 2009, p.357). In order to find a base year, the then current global trends were considered and it was found that most of the goals would need a 25-year period to be achieved, hence the base year was set to 1990 (Vandemorrtele, 2009, p.357). Since the global trends were used to set the time frame, Vandemorrtele (2009) argues that specific countries or regions should not be assessed as not achieving the targets or being off-track as the targets are only valid on a global level and have been misinterpreted as "one-size-fits-all" (Vandemorrtele, 2009, page 356). Easterly (2009) is line with this reasoning of Vandemorrtele, (2009) and argues that the design of the MDGs is unfair towards Africa as the region had a very low starting point and, thus, is viewed as a poor performer when the targets were not being met, even though there was progress in several areas. Fukada-Parr et al. (2013), McArthur and Rasmussen (2018), and Hailu and Tsukada (2010) all propose alternative methods of assessing the MDGs by using the goals as benchmarks of progress rather than as hard planning targets following the reasoning that the MDGs are global targets. The three methods will be briefly explained in Sections 2.1.1, 2.1.2, and 2.1.3.

When measuring the rate of progress, it is of interest whether or not the indicators have a linear or non-linear development. The official UN, World and Regional Banks' reports usually used linear methods, with some exceptions, such as the UNICEF which used a nonlinear method when assessing the under 5 mortality rate, and the Asian Development Bank which used non-linearity for tracking the rate of progress of decreasing indicators (Fukada-Parr et al., 2013).

Some of the suggested methods by the academia also uses linear methods such as Fukada-Parr et al. (2013). Fukada-Parr et al. (2013) admit that their linear method is fairly simple and might not be the best way to understand changes in progress and for decreasing indicators a nonlinear assessment might be better. The reasoning for why decreasing indicators would be better assessed by a nonlinear method is to account for the increasingly difficulties to achieve further improvements that follows lower levels of the indicator (UNICEF, 2007; Fukada-Parr et al., 2013). Osorio (2008) argues that also increasing indicators should be projected to be non-linear as a concave function would better represent that at higher levels it will be more difficult to improve.

2.1.1 The rate of change: Fukada-Parr et al. (2013)

To determine the success or failure of the MDGs, Fukada-Parr et al. (2013) suggest a method that assesses the performance of the goals on the basis of whether the rate of progress increased after the implementation of them or not. Their reasoning for this is that the intention was not for the targets to be used as hard national planning targets but they should rather encourage all countries to strive for increased rate of progress following the arguments by Vandemorrtele, (2009). Following this, Fukada-Parr et al. (2013) argue for the MDGs to be used as benchmarks to monitoring development.

Fukada-Parr et al. (2013) create two time periods, A and B, one period before the establishment of the MDGs and one after the establishment. A comparison is then performed between the rate of change for each MDGs indicator *X*, for each country *i*, between the two periods, A and B:

$$\left[\frac{\Delta X_i}{\Delta T_i}\right]_A > \left[\frac{\Delta X_i}{\Delta T_i}\right]_B$$

Where $\Delta T_i = T_{i,end} - T_{i,start}$ and $\Delta X_i = X(T_{i,end}) - X(T_{i,start})$. Simply put, a comparison between the rate of change between the first and middle point to the rate of change between the middle and last point is made:

$$\frac{X_{mid} - X_{first}}{T_{mid} - T_{first}} > \frac{X_{last} - X_{mid}}{T_{last} - T_{mid}}$$

T_{first} is the earliest possible year to the base year of 1990 with available data. The middle year, T_{mid}, is between 2000–2003, where the latest year with data is preferred. T_{last} is the most recent available year with data. The use of 2003 as the cut-off year is to allow for a lag time of

one year, since the implementation and the effect of policies do not occur immediately (Fukada-Parr et al., 2013). The success or failure of the MDGs is then evaluated by studying the percentage of countries that increased their rate of progress of the indicators in the second period. They find that for only five out of the 24 indicators tested at least 50% the countries experienced an increase of progress after the introduction of the MDGs. However, following this method they also find that for sub-Saharan Africa, 50% or more of the countries experienced an increase of progress after the introduction of the MDGs for 15 of the indicators. Following this, Fukada-Parr et al. (2013) argue that when the MDGs are used as a measurement of national performance, the rate of progress should be evaluated instead of using the MDG targets as planning goals. They argue that if the policy objective of the goals was to inspire increased efforts of all countries this assessment would better fit the objective.

2.1.2 The rate of change: McArthur and Rasmussen (2018)

To my knowledge the most similar work to that of this paper is McArthur and Rasmussen (2018). Like this paper aims to do, McArthur and Rasmussen (2018) study the changes in the trends before and after the establishments of the MDGS by using some of the methods of Fukada-Parr et al. (2013). In their paper McArthur and Rasmussen (2018) assess the changes in the rates of progress for all developing nations, segmented based on their income and geographic area, on twelve of the MDG indicators, which are categorized depending on their consideration: life and death, basic needs, extreme income poverty, and natural capital. For mortality indicators the proportional rate of change is used and for all other indicators they compare trends in the absolute percentage point rate of change, decreasing indicators are reversed and become increasing (McArthur & Rasmussen, 2018). Changes in trends are then assessed by three different tests; first the number of countries that had an acceleration in the MDGS period is studied, then t-tests for differences in means are conducted, and finally they estimate to what extent the changes had any effect on human outcomes (McArthur & Rasmussen, 2018). They find that the largest changes in the rate of progress occurred in the low-income countries in indicators segmented to life and death, while for the segment of basic needs the trends remained fairly similar, with the exception of low-income countries and African countries that experienced improvements, as did the primary school completion indicator (McArthur & Rasmussen, 2018). Also, the indicator of extreme income poverty was more nuanced, while the environmental sustainability category experienced the most short-comings (McArthur & Rasmussen, 2018).

2.1.3 The rate of change: Hailu and Tsukada (2010)

A third paper that also suggests an evaluation method of the MDGs by measuring progress rather than just considering if the absolute goals were achieved is Hailu and Tukada (2010). They use a non-linear method to assess MDG performance of developing countries by comparing the rate of progress before and after the introduction of the MDGs. Each indicator is transformed to a unit free score by using an arbitrary chosen measure of effort appreciation to account for that different levels of effort are required at different stages during the development curve, together with the indicators original level, and upper and lower bounds (Hailu & Tukada, 2010). Their findings suggest that Goals 1, 2, 4, 6, and 8 had the highest rate of progress, while Goals 3, 5, and 7 the least progress (Hailu & Tukada, 2010).

2.2 Country characteristics and development

The following section contains a brief review of the literature on development and certain country characteristics. These characteristics; corruption, openness and system of government, will later be used to categorize countries when assessing the rate of change in the MDG period. In addition to these characteristics, countries will also be categorized by income and the least developed countries (LDCs) will also be studied separately. Studying the LDCs separately and categorize by income is of interest as the core of the MDGs' purpose was to eliminate poverty (United Nations General Assembly, 2001).

2.2.1 Corruption

The category of corruption is included as corruption is a sign of a state that is faulty in its functioning which could weaken economic growth. Through bribery a state's wealth could be expropriated (Rose-Ackerman, 1998). Corruption could also lead to economic inefficiency (Gray & Kaufman, 1998) and slower growth (Bardhan, 1997). However, the issue of corruption is complex and there is literature that suggests that corruption could improve economic efficiency (Bardhan, 1997).

Mauro (1995) provides pioneering empirical evidence that corruption leads to lower investments and therefore has a negative correlation with economic growth. Casquero, Ortega, and Sanjuán (2016) study the convergence of human development and finds that there are different growth paths depending on the level of perceived corruption in the country; low-corruption countries converge to a higher equilibrium level than countries considered as medium or highly corrupt, the difference is the most prominent in health and income dimensions. Furthermore, Asadullah and Savoia (2018) find that countries with poor state

capacity, including corruption, were less likely to have achieved the poverty reduction goal of the MDGs.

2.2.2 Openness

The characteristic of openness is included in this study to survey whether the degree of openness is related to changes in the rate of change. Regarding economic growth, openness in form of international trade has for a very long time been perceived as a central driving factor, although during the 20th century protectionists theories emerged contradicting the previous ideas (Edwards, 1993).

The empirical findings of the relationship between openness and economic development are mixed and the topic is highly debated (Edwards, 1991; Rodríguez & Rodrik 2001). Yanikkaya (2003, p 58), suggests that the variations in findings should not be a surprise as there is no clear consensus of what constitutes as openness, and thus countries are classified differently depending on the definition in different studies. To broaden the discussion of trade and growth Davies and Quinlivan (2006) study the effect of trade on social development and find a positive correlation between trade and future social welfare, where trade is measured as trade per capita and the Human Development Index is used for social development measurement.

2.2.3 System of government

The category of system of government is in included in this study as a country´s government system affects its long-run progress; in an autocracy individual property rights and enforcement of contracts are not secure in the long-run which decreases the incentive to invest and produce (Olson, 1993). However, there is also a debate in the literature whether transition to democracy increases or decreases economic growth (Rodrik & Wacziarg, 2005). A part of the MDGs was to increase the official development aid (ODA) and Kosack (2003) shows that the effect of aid on the quality of life is positive in democracies but not in autocracies.

The current literature on the relationship between system of government and human development is nuanced. For a long time, the consensus was that democracy improves human welfare following the logic that in democracies poor citizens are empowered and their interest are accountable to the government, however, following more recent findings, this positive relationship has been challenged (Alfaro, Gerring, & Thacker, 2012). For example, Ross (2006) finds that democracy has no effect on infant and child mortality. Alfaro et al. (2012) also use infant mortality as a measure of human development and finds weak evidence for any positive relationship between the current state of governance and level of human development, while they find strong evidence for that the existence of democracy over the past century has a

positive effect on human development. Examples of empirical studies showing a positive relationship between democracies and development are among others Boix (2001), who finds a positive relationship that indicates that democracies have a growing public sector while for non-democracies the public sector remains small, and Brown and Hunter (2004), who study educational spending in Latin America and find that it is higher for democracies than other countries.

2.3 Contribution

This paper aims at contributing to the already existing literature of assessing whether or not there was any increased acceleration of progress in the MDG period. Attempts to make such an assessment has been done both during the MDG period (Fukada-Parr et al., 2013; Hailu & Tsukada, 2011), but also after the end of the period (McArthur & Rasmussen, 2018). Just like McArthur and Rasmussen (2018) this paper will be based on the work of Fukada-Parr et al., (2013) and conduct t-tests of significance as a part of the assessment. The significant difference in methods between this paper and McArthur and Rasmussen (2018) is that I test for both absolute rate of change and relative rate of change for all indicators, also, adjustments for multiple hypothesis testing is performed. Furthermore, I do not solely focus on developing countries, but also include developed countries, and include additional indicators. Furthermore, while McArthur and Rasmussen (2018) segment countries on income and geographic location, I will categorize countries based on different political, social and economic characteristics, hopefully, this will bring some additional insights.

3. Hypothesis

Considering the current literature and the UN reports, my hypothesis is that some areas covered by the MDGs experienced acceleration in the MDG period while others did not. Following the literature, it appears that the goals related to the immediate lives of people were more prone to show increased progress. Therefore, my hypothesis is that Goals 1, 2, 4, 5, 6 experienced faster rates of change in the MDG period.

4. Methods

To measure the rate of progress of the MDGs I use two methods; the absolute rate of change and the relative rate of change. In this section these two methods will be explained. Following this, the method for how any potential change in the rate of progress is evaluated will be described.

4.1 The absolute rate of change

To measure the absolute rate of change this paper will be based on the methods of Fukada-Parr et al. (2013).

4.1.1 The absolute rate of change of the MDGs

The method by Fukada-Parr et al. (2013) described in Section 2.1.1 is used in this paper to assess the absolute rate of change but with some differences. The first difference is regarding the method of periodization. T_{first} is the earliest year to the base year of 1990 with available data but with an upper limit at the year of 1995. T_{mid} is a year in the range of 2000–2003 with latter years being preferred; e.g. if there is data for 2003 that will be used, if there is no data for 2003, 2002 is used and so on, following Fukada-Parr et al. (2013). T_{last} is the latest year to the end year of 2015 with data. Hence, to capture as much of the time span as possible from the base year to the end year the following two time periods would be compared:

$Period\ A: pre\ MDG\ period$	$Period\ B: MDG\ period$
1990–2003	2003–2015

Due to data limitations some periods analyzed are shorter than this. The inclusion of the limitation of the latest possible year of T_{first} to be 1995 is to ensure that there is a time period of at least five years to measure the pre-rate of change. If this limitation is not included Period A could be as short as 1999–2000. A similar limitation is not used for Period B to avoid exclusion of any countries that reached the target early and then stopped to report data. For indicators with natural floors or ceilings (e.g. 0 or 100%), T_{last} is adjusted for countries that reached the ceiling or floor early and stayed there to be the first year when the limit was reached. This is similar to the methods of McArthur and Rasmussen (2018). Also, countries that had reached the floor or ceiling by the cut-off year and then remained there were excluded.

For two indicator series, Series 3.1.a and 3.1.b, the data is transformed to enable measuring the rate of change. Series 3.1.a and 3.1.b are the gender parity indexes (GPI) in school enrollment and they are an indicator of Target 3A, which aims at eliminating gender disparity in school enrollment. The accepted measure for this indicator is between 0.97–1.03, where a GPI below 1 indicates a disparity in disfavor for girls while a GPI above 1 indicates a disparity in disfavor for boys (United Nations, 2015). Following that the indicator has both an upper and lower limit, progress cannot be measured in a one-way direction. For example, following the method described above, a country *i* with the following observations

$$X_{first}(1990) = 0.95$$
$$X_{mid}(2003) = 0.98$$
$$X_{last}(2015) = 1.10$$

has an absolute rate of change of 0.0023 in Period A and 0.0100 in Period B. Thus, Period B has a faster rate of change and it would appear as there was larger improvements in this period compared to Period A. However, during Period A the country actually reached the accepted ratio while in Period B the country surpasses the accepted ratio, consequently the fast rate of change is in this case not an improvement.

To correct for the issue of not having a preferred one-way direction of change for these series, the rate of change is measured as the rate of change of the absolute difference of the observations from the optimal value of 1. All values of Series 3.1.a and 3.1.b, are transformed in the following way:

$$X_{new} = |1 - X_{original}|$$

By this method the series have been transformed to be solely a decreasing indicator, thus the original method of computing the rate of change can be applied to measure the rate of change.

4.2 The relative rate of change

Fukada-Parr et al. (2013) admit that their framework of comparing the rate of change as linear is simple and that there is often a decreasing rate of improvement. In such cases the method of measuring the absolute rate of change might not be the most situatable one, instead a nonlinear method is suggested.

4.2.1 The average annual rate of reduction

For one indicator, Fukada-Parr et al. (2013) expand their work to test for the relative rate of change by applying the framework of UNICEF´s average annual rate of reduction (AARR). UNICEF uses the AARR to account for the increasingly difficulties to achieve further improvements that follows lower levels of the under- five mortality rate (UNICEF, 2007). Fukada-Parr et al. (2013) uses the AARR model:

$$AARR = \left[\frac{ln\left(\frac{X_2}{X_1}\right)}{T_1 - T_2}\right] * 100$$

where *ln* is the natural logarithm, to compare the relative rate of change for several time periods for the under-five mortality rate.

4.1.2 The relative rate of change of the MDGs

To measure the relative rate of change of the MDG indicators the AARR framework will be used in this paper. Since this method will be applied on both increasing and decreasing indicators, and to get consistency with the method of calculating the absolute rate of change, the equation is for simplicity rewritten to:

$$Relative\ rate\ of\ change = \left[\frac{ln\left(\frac{X_2}{X_1}\right)}{T_2 - T_1}\right]$$

With this equation a reduced relative rate will be negative and an increased rate will be positive. The method for periodization is the same as for the calculations of the absolute rate; one pre MDG period (1990–2003) and one MDG period (2003–2015), with 1995 as the latest first observation, 2003 as the preferred cut-off year and the latest available year for the last year. The same transformation of the data for Series 3.1.a and 3.1.b is also applied.

Some series contain observations of 0 or of negative numbers. As the natural logarithm is not defined for zero or negative values, series containing such values must be transformed to calculate the relative rate of change. As argued by Osborne (2002) this transformation is done by adding a constant to all observations in the series so that the smallest value in the series becomes 1.

4.3 Evaluation of progress

To evaluate the progress of development in the MDGs period two methods will be used. The first one is from Fukada-Parr et al. (2013) and looks at the percentage of countries with an improved rate of change after the implementation of the MDGs. The second method will be a two-paired sample t-test to determine if there is any statically significance in the rates between the two periods. The two methods will be applied on both the findings of the absolute rate of change and the relative rate of change.

4.3.1 Percentage of countries experiencing improvement

To compare the improvement in the rate of change, indicators must be separated depending on whether they are so called increasing indicators (indicators for which higher levels are better) or decreasing indicators (indicators for which lower levels are better). For increasing indicators there is improved rate of change if

$$\left[\frac{\Delta X_i}{\Delta T_i}\right]_A < \left[\frac{\Delta X_i}{\Delta T_i}\right]_B$$

and for decreasing indicators there is improved rate of change if

$$\left[\frac{\Delta X_i}{\Delta T_i}\right]_A > \left[\frac{\Delta X_i}{\Delta T_i}\right]_B$$

Then, for each indicator the percentage of countries with improved rate of change is calculated. Fukada-Parr et al. (2013) consider indicators to be a success or a failure based on whether more than or less than 50% of the countries have experienced an improved rate of change respectively. I will use this method as one part of assessing the uncategorized data set.

4.3.2 Two paired sample t-test

The evaluation method of Fukada-Parr et al. (2013) provides a general overview of the development of the rate of progress. However, the method ignores the size of the change when determining whether there was any improvement. To give a more comprehensive picture of any changes in the rate of progress, this paper will perform paired sample t-tests to determine if the rates of change in the two periods are significantly different.

A paired sample t-test is conducted on each indicator which means that there is multiple hypothesis testing. With multiple hypothesis testing there is an increased risk of making a Type 1 error and incorrectly reject a true null hypothesis compared to when conducting a single test. The familywise error rate is the probability of making at least one Type 1 error and is calculated as:

$$FWER = 1 - (1 - \alpha)^n$$

where α is the significance level and n is the number of null hypothesis tested. After having performed the periodization of the indicators there are 42 adequate series for which paired sample t-tests are performed on and with a significance level of 0.05 the familywise error rate is 88.4%.

In order to control for FWER the Holm-Bonferroni method is used. The Holm-Bonferroni method is a sequential rejective test where the calculated probabilities, $p_1, p_2, \ldots p_n$ where p_1 is

the smallest calculated probability, p_2 is the second smallest probability and so on, are compared to an adjusted significance level of

$$\frac{\alpha}{n}, \frac{\alpha}{n-1}, \dots, \frac{\alpha}{1}$$

respectively (Holm, 1979). The null hypothesis is rejected if the calculated probability is smaller than the adjusted significance level. Once a null hypothesis has been accepted all subsequent hypothesis are accepted as well. I will use a standard level of $\alpha = 0.05$ to perform these adjustments.

I want to stress that by using the methods described in this section I do not study any potential causal relationship between the MDGs and development. This paper solely looks at whether or not there was any acceleration of progress in the MDG period.

5. Data

All data on the MDG indicators that is used in this paper is retrieved from the UN Statistical Division (2016). The data availability differs largely between indicators and some indicators had to be excluded from this study due to data limitations.[1] For all indicators that are used, all available countries with enough data to form the time periods are included. Since not all countries are evaluated for all indicators, and because some countries lack indicator data for some years, there are large differences in the numbers of countries that could be included for the various indicators.

When categorizing countries depending on their characteristics several different sources are used. Please note that these data sets contain a different number of countries, so not all countries are categorized for every characteristic. For all the characteristics the data is gathered from 2003 as this is the preferred cut-off year in the periodization and thus the starting point of the second period. For a complete list of how the countries are classified in all the different characteristics see Appendix 2.

Corruption

To classify countries on corruption the Corruption Perceptions Index (CPI) of Transparency International is used (Transparency International, 2003). The CPI is an index that combines

[1] Furthermore, the indicator series of Ratio of girls to boys in tertiary education and Proportion of tuberculosis cases detected under DOTS are excluded due to data uncertainty.

and standardizes the findings from external surveys among business people, risk analysts and academics, and in 2003 17 sources from 13 independent intuitions were included (Lambsdorff, 2003). I create four groups based on the index score; most corrupt: $0 \leq$ index score ≤ 2.5, second to most corrupt: $2.5 <$ index score ≤ 5.0, second to least corrupt: $5.0 <$ index score ≤ 7.5, and least corrupt: $7.5 <$ index score ≤ 10.

Income

For income the World Bank´s classification based on the Gross National Income per capita (GNI) is used, which in 2003 classified countries as low-income economies if the GNI was lower than or exactly $735, lower-middle-income economies if the GNI was between $736-$2,935, upper-middle income economies if the GNI was between $2,936-$9,075, and high-income economies if the GNI was higher than $9,075 (World Bank, n.d.a)

Least developed countries

Countries are categorized as least developed countries (LDCs) following the classification of the UN´s Development Policy & Analysis Division. Countries are classified as LDCs based on three indicators; income, human assets index, and economic vulnerability index (UN´s Development Policy & Analysis Division, n.d.).

Openness

To measure the openness of countries I use one of the more basic methods: exposure to international trade as the ratio of trade, including both export and imports, to GDP. The data is retrieved from the World Bank indicator of Trade (% of GDP) (World Bank, n.d.c). From this data I create 3 categories depending on the extent of trade dependency; one category for countries with an openness ratio of less than 50%, one category for countries at 50% or more but less than 100%, and one category for countries at 100% or more.

System of government

The Center for Systematic Peace's index of political regime characteristics and transitions, called Polity IV, is used to classify countries as democracies, anocracies, or autocracies following the index´s own classification (Center for Systemic Peace, 2017). The polity score is based on how the countries score on a democracy indicator and on an autocracy indicator where several factors are included and weighted (Gurr, Jaggers, & Marshall, 2017).

6. Findings

6.1 All countries

The output of Table 2 shows the findings for the complete data set and the output includes the percentage of countries showing increased rate of change in the MDG period. For the absolute rate of change there were 13 indicators where at least 50% of the countries had accelerated progress in the MDG period compared to the pre-period, and these were indicators of Goals 1 (2 indicators), 3(1), 5(1), 6(1), 7(3), and 8(5). While for the relative rate of change 22 of the indicators had at least 50% of the countries accelerating, and they were spread across the goals as follows: 1(4), 4(2), 5(2), 6(5), 7(6), and 8(4). Most of the indicators with more than 50% of the countries that showed a relative acceleration are decreasing and many of them had fewer countries showing an absolute rate of change (for example indicators of poverty, children and infant mortality, tuberculosis, and C02 emissions) this supports the reasoning that it becomes increasingly difficult to achieve further improvements at lower levels of progress. There are also a couple of increasing indicators where many countries showed faster relative rate of changes in the second period, mainly from Goal 8, but also the poorest quintile's share in national income or consumption and births attended by skilled health personnel. Noticeable is that Goal 2 had less than one third of the countries with accelerating progress in the MDG era.

Table 2 also contains the percentage of countries showing overall improvement from the first to the last year, this is more similar to how the UN assessed achievement as it considers the levels instead of trends. Here 31 of the indicators had more than 50% of the countries showing improvement and for many of them the percentage is a lot higher; some of the indicators have more than 90% of the countries showing improvement. One noticeable finding is for the indicator people living with HIV, for this indicator only 13.7% of the countries showed improvement in levels while for the rate of change of both absolute and relative terms, around 75% of the countries showed improvement. This means that although many countries had more people living with HIV by the end of the MDG period than in the beginning of the 90´s, the rate of change improved in the desirable direction. Also, the differences between the percentages of countries that showed improvement in level and in rate of change for indicators of Goal 7 is interesting. For many of these indicators, more countries showed improvements in the rate of change than in actual levels. Looking at Indicator 7.2.a C02 emissions, few countries had decreased the amount of emissions but many countries had halted their rate of change compared to the 90´s.

Two-paired t-tests were conducted to determine if there were any significant difference in means in the rates of change. For the complete t-test table please see Appendix 3. As seen in Table 2 few indicators showed significant difference in the rate of change during the MDG

period. For the absolute rate of change, six indicators were significantly different and for the relative rate of change, nine indicators were significantly different. Furthermore, some of these indicators show significant difference but in an undesired direction (Indicators 2.2, 7.8, 7.9, 8.14, and 8.16 (only for the relative change)). These findings indicate that there was not an increased rate of progress during the MDG period in most of the areas that the goals intended to make improvements in. The exception to this was Goal 6, which had multiple indicators whose rate of change improved significantly during the period. Additionally, some Goal 8 indicators showed positive significant difference.

6. 2 Findings of categorized countries

In this section the findings of the different country categories are presented. The tables in this section (3-8) show the indicators that showed a significant difference in means between the pre MDG period and the MDG period. For the complete t-test tables please see Appendix 4.

Table 2. Percentage of countries showing improvements in the MDG period and differences of means

Target	Indicator	Number of countries	% Countries with overall improvement in first to last year	% Countries with improved absolute rate of change in MDG period	% Countries with improved relative rate of change in MDG period	Difference of means, absolute rate of change	Difference of means, relative rate of change
1.A	1.1 Population below $1.25 (PPP) per day, percentage	62	77.4	46.8	62.9	-0.086	-0.059
1.A	1.2 Poverty gap ratio at $1.25 a day (PPP), percentage	59	78.0	49.2	59.3	0.237	-0.030
1.A	1.3 Poorest quintile's share in national income or consumption, percentage	79	48.1	59.5	58.2	-0.006	0.000
1.C	1.8 Children under 5 moderately or severely underweight, percentage	55	94.5	56.4	65.5	-0.246	-0.027
1.C	1.9 Population undernourished, percentage	170	51.8	33.5	40.6	-0.053	-0.008
2.A	2.1 Total net enrolment ratio in primary education, both sexes	90	71.1	28.9	27.8	-0.313	-0.005
2.A	2.2 Percentage of pupils starting grade 1 who reach last grade of primary, both sexes	89	88.8	22.5	21.3	-1.081*	-0.018*
2.A	2.3 Literacy rates of 15─24 years old, both sexes, percentage	39	84.6	33.3	33.3	-0.242	-0.006
3.A	3.1.a Gender Parity Index in primary level enrolment	162	58.6	40.7	42.6	0.001	0.001
3.A	3.1.b Gender Parity Index in secondary level enrolment	136	68.4	39.0	41.2	0.000	0.000
3.A	3.2 Share of women in wage employment in the non-agricultural sector	108	84.3	33.3	32.4	-0.057	-0.002
3.A	3.3 Seats held by women in national parliament, percentage	133	85.7	54.9	46.6	0.260	0.007
4.A	4.1 Children under five mortality rate per 1,000 live births	195	97.9	31.3	57.4	-0.059	-0.006
4.A	4.2 Infant mortality rate (0─1 year) per 1,000 live births	195	97.9	33.3	57.4	0.032	-0.004
4.A	4.3 Children 1 year old immunized against measles, percentage	190	83.7	44.2	42.1	-0.283	-0.013
5.A	5.1 Maternal mortality ratio per 100,000 live births	183	92.3	41.5	55.2	0.399	-0.004
5.A	5.2 Births attended by skilled health personnel, percentage	82	81.7	58.5	54.9	0.360	0.004
6.A	6.1 People living with HIV, 15─49 years old, percentage	117	13.7	74.4	75.2	-0.175*	-0.040*
6.C	6.9.a Tuberculosis incidence rate per year per 100,000 population (mid-point)	210	73.3	49.5	61.9	-4.370*	-0.020*
6.C	6.9.b Tuberculosis prevalence rate per 100,000 population (mid-point)	211	75.4	46.0	55.9	-2.710	-0.017
6.C	6.9.c Tuberculosis death rate per year per 100,000 population (mid-point)	207	80.2	42.5	52.2	-0.171	-0.009
6.C	6.10 Tuberculosis treatment success rate under DOTS, percentage	133	67.7	39.1	36.1	-0.860	-0.017*
7.A	7.1 Proportion of land area covered by forest, percentage	223	33.6	29.1	22.9	0.003	0.000
7.A	7.2.a Carbon dioxide emissions (CO2), thousand metric tons of CO2 (CDIAC)	206	20.9	40.8	54.4	2374.559	0.000

7.A	7.2.b Carbon dioxide emissions (CO2), metric tons of CO2 per capita (CDIAC)	184	34.8	46.7	53.8	-0.006	0.002
7.A	7.2.c Carbon dioxide emissions (CO2), kg CO2 per $1 GDP (PPP) (CDIAC)	170	62.4	53.5	61.8	0.000	-0.011
7.A	7.3 Consumption of all Ozone-Depleting Substances in ODP metric tons	171	48.0	62.0	63.2	268.512	-0.008
7.AB	7.5 Proportion of total water resources used, percentage	57	45.6	54.4	56.1	-0.016	-0.009
7.A	7.6 Terrestrial and marine areas protected to total territorial area, percentage	223	91.5	48.9	45.3	0.131	0.002
7.C	7.8 Proportion of the population using improved drinking water sources, total	166	84.9	37.3	30.1	-0.017	-0.002*
7.C	7.9 Proportion of the population using improved sanitation facilities, total	181	74.6	40.9	26.5	-0.031	-0.004*
7.D	7.10 Slum population as percentage of urban, percentage	48	83.3	43.8	66.7	0.070	0.000
8	8.1.a Net ODA as percentage of OECD/DAC donors GNI	23	39.1	65.2	65.2	0.006	0.004
8	8.1.b Net ODA to LDCs as percentage of OECD/DAC donors GNI	23	43.5	56.5	56.5	-0.001	0.000
8.B	8.3 ODA that is untied, percentage	18	88.9	27.8	22.2	-1.268	-0.018
8.BC	8.4 ODA received in landlocked developing countries as percentage of their GNI	29	31.0	34.5	27.6	-0.469	-0.072
8.BC	8.5 ODA received in small islands developing States as percentage of their GNI	30	16.7	76.7	73.3	0.540	0.056
8.AB	8.8 Agriculture support estimate for OECD countries as percentage of their GDP	14	100.0	7.1	35.7	0.040	0.008
8.D	8.12 Debt service as percentage of exports of goods and services and net income	102	79.4	47.1	64.7	-0.130	-0.042*
8.F	8.14 Fixed-telephone subscriptions per 100 inhabitants	218	80.3	19.3	13.3	-0.851*	-0.046*
8.F	8.15 Mobile-cellular subscriptions per 100 inhabitants	219	99.1	80.8	39.7	4.417*	-0.036
8.F	8.16 Internet users per 100 inhabitants	212	99.5	87.3	47.6	1.394*	-0.036*

Note: * The difference in means is significantly different at a significance level of 0.05 after Holm-Bonferroni adjustment
Source: Author calculations based on data from UN Statistical Division Millennium Development Goals Indicators (2018

6.2.1 Corruption

As seen in Table 3 there are some differences in which indicators had a different rate of change in the MDG era in the different country groups of corruption. None of the poverty reduction, gender equality or maternal health indicators were significantly different for any category. Noticeable is that for the relative rate of change the most corrupt group accelerated significantly in more indicators than the other groups. For the least corrupt countries the only significant acceleration occurred in reducing CO2 emissions, which no other group improved in.

Table 3. Countries categorized on corruption:
Indicators showing significant difference in means in MDG period

Category	Absolute rate of change	Relative rate of change
Most corrupt	6.9.a Tuberculosis incidence rate	4.1 Children under five mortality
	8.15 Mobile-cellular subscriptions	4.2 Infant mortality rate
	8.16 Internet users	6.1 People living with HIV
		6.9.a Tuberculosis incidence rate
		6.9.b Tuberculosis prevalence rate
		8.15 Mobile-cellular subscriptions
		8.16 Internet users
		(8.4 ODA received in landlocked developing countries)
Second to most corrupt	8.15 Mobile-cellular subscriptions	6.1 People living with HIV
	8.16 Internet users	8.12 Debt service as percentage of exports of goods and services and net income
	(7.9 Improved sanitation facilities)	(7.9 Improved sanitation facilities)
	(8.14 Fixed-telephone subscriptions)	(8.14 Fixed-telephone subscriptions)
Second to least corrupt	8.16 Internet users	(8.14 Fixed-telephone subscriptions)
	(8.14 Fixed-telephone subscriptions)	(8.15 Mobile-cellular subscriptions)
		(8.16 Internet users)
Least corrupt	(4.1 Children under five mortality)	7.2.a CO2 emissions, thousand metric tons
	(4.2 Infant mortality rate)	7.2.b CO2 emissions, metric tons per capita
	(8.14 Fixed-telephone subscriptions)	7.2.c CO2 emissions, kg per $1 GD
	(8.16 Internet users)	(8.14 Fixed-telephone subscriptions)
		(8.15 Mobile-cellular subscriptions)
		(8.16 Internet users)

Note: Indicators in parenthesis showed significant difference in means in an undesirable direction, e.g. increasing indicators showed decreasing rate of change and vice versa.
Source: Author calculations based on data from UN Statistical Division Millennium Development Goals Indicators.

6.2.2 Income

The output in Table 4 shows that there appear to be some differences in which indicators are statistically significant depending on the level of income. The low-income group improved in several areas in the relative rate of change. Almost all of the indicators this group improved on concerned severe issues, such as mortality, diseases and undernourishment. In the two middle income groups few indicators were different in the rate of change. From the high-income group the only indicators that showed a significant acceleration are regrading CO2 emissions. The indicators of Target 8F changed direction depending on income group.

Table 4. Countries categorized on income:
Indicators showing significant difference in means in MDG period

Category	Absolute rate of change	Relative rate of change
Low	6.1 People living with HIV	1.9 Population undernourished
	8.15 Mobile-cellular subscriptions	4.1 Children under five mortality
	8.16 Internet users	4.2 Infant mortality rate
	(2.2 Primary school completion)	5.1 Maternal mortality
		6.1 People living with HIV
		6.9.a Tuberculosis incidence rate
		6.9.b Tuberculosis prevalence rate
		8.15 Mobile-cellular subscriptions
		8.16 Internet users
		(2.2 Primary school completion)
		(7.8 Improved drinking water sources)
Lower-middle	8.15 Mobile-cellular subscriptions	(7.8 Improved drinking water sources)
	8.16 Internet users	(7.9 Improved sanitation facilities)
	(7.9 Improved sanitation facilities)	(8.14 Fixed-telephone subscriptions)
	(8.14 Fixed-telephone subscriptions)	
Upper-middle	8.15 Mobile-cellular subscriptions	(8.14 Fixed-telephone subscriptions)
	8.16 Internet users	(8.15 Mobile-cellular subscriptions)
	(8.14 Fixed-telephone subscriptions)	(8.16 Internet users)
High	(4.1 Children under five mortality)	7.2.a CO2 emissions, thousand metric tons
	(4.2 Infant mortality rate)	7.2.b CO2 emissions, metric tons per capita
	(6.9.c Tuberculosis death rate)	(4.1 Children under five mortality)
	(8.14 Fixed-telephone subscriptions)	(4.2 Infant mortality rate)
		(8.14 Fixed-telephone subscriptions)
		(8.15 Mobile-cellular subscriptions)
		(8.16 Internet users)

Note: Indicators in parenthesis showed significant difference in means in an undesirable direction, e.g. increasing indicators showed decreasing rate of change and vice versa.
Source: Author calculations based on data from UN Statistical Division Millennium Development Goals Indicators.

6.2.3 Least developed countries

Considering that the purpose of the MDGs was to help the most vulnerable, the category of LDCs is interesting to study. The takeaway from the output of Table 5 is that, just as for the low-income group in Section 7.2.2, which share many countries, there was an improvement in the relative rate of change for several indicators of severe issues. Primary school completion had an undesired change of rate in both absolute and relative terms.

Table 5. Least developed countries:
Indicators showing significant difference in means in MDG period

Category	Absolute rate of change	Relative rate of change
LDCs	6.1 People living with HIV	1.9 Population undernourished
	8.15 Mobile-cellular subscriptions	4.1 Children under five mortality
	8.16 Internet users	4.2 Infant mortality rate
	(2.2 Primary school completion)	6.1 People living with HIV
		8.15 Mobile-cellular subscriptions
		8.16 Internet users
		(2.2 Primary school completion)

Note: Indicators in parenthesis showed significant difference in means in an undesirable direction, e.g. increasing indicators showed decreasing rate of change and vice versa.
Source: Author calculations based on data from UN Statistical Division Millennium Development Goals Indicators.

6.2.4 Openness

From Table 6 it is indicated that few indicators improved in relative rate of change no matter of the degree of openness and for the absolute rate it was mostly the indicators of Target 8F that improved, although 8.14 changed in the opposite direction.

Table 6. Countries categorized on openness:
Indicators showing significant difference in means in MDG period

Category	Absolute rate of change	Relative rate of change
< 50%	8.15 Mobile-cellular subscriptions	(7.8 Improved drinking water sources)
	(8.14 Fixed-telephone subscriptions)	(8.14 Fixed-telephone subscriptions)
50% —<100%	6.1 People living with HIV	6.1 People living with HIV
	8.5 ODA received in small islands developing states	6.9.a Tuberculosis incidence rate
	8.15 Mobile-cellular subscriptions	8.5 ODA received in small islands developing states
	8.16 Internet users	
	(2.2 Primary school completion)	(2.2 Primary school completion)
	(8.14 Fixed-telephone subscriptions)	(7.8 Improved drinking water sources)
		(7.9 Improved sanitation facilities)
		(8.14 Fixed-telephone subscriptions)
>I 100%	8.15 Mobile-cellular subscriptions	6.1 People living with HIV
	8.16 Internet users	(8.14 Fixed-telephone subscriptions)
	(8.14 Fixed-telephone subscriptions)	

Note: Indicators in parenthesis showed significant difference in means in an undesirable direction, e.g. increasing indicators showed decreasing rate of change and vice versa.
Source: Author calculations based on data from UN Statistical Division Millennium Development Goals Indicators.

6.2.5 System of government

Table 7 shows the significant difference of indicators for countries categorized by their system of government. For autocracies there were very few significant differences in any direction, only for Goal 8 indicators were there any significant difference. Also, for anocracies and democracies few indicators changed in the desired direction.

Table 7. Countries categorized on system of government:
Indicators showing significant difference in means in MDG period

Category	Absolute rate of change	Relative rate of change
Autocracies	8.15 Mobile-cellular subscriptions	
	8.16 Internet users	
	(8.4 ODA received in landlocked developing countries)	
Anocracies	6.1 People living with HIV	6.1 People living with HIV
	8.15 Mobile-cellular subscriptions	6.9.a Tuberculosis incidence rate
	8.16 Internet users	(8.14 Fixed-telephone subscriptions)
	(8.14 Fixed-telephone subscriptions)	
Democracies	8.15 Mobile-cellular subscriptions	6.1 People living with HIV
	8.16 Internet users	8.12 Debt service as percentage of exports
	(2.1 Net enrolment primary education)	of goods and services and net income
	(2.2 Primary school completion)	(2.1 Net enrolment primary education)
	(4.3 Children 1 year old immunized against measles)	(7.8 Improved drinking water sources)
	(8.14 Fixed-telephone subscriptions)	(8.14 Fixed-telephone subscriptions)

Note: Indicators in parenthesis showed significant difference in means in an undesirable direction, e.g. increasing indicators showed decreasing rate of change and vice versa.
Source: Author calculations based on data from UN Statistical Division Millennium Development Goals Indicators.

7 Discussion and analysis of the findings

7.1 Limitations and shortcomings

First and foremost, it is to be absolutely clear that by applying the methods used in this paper there is no testing for any potential causal relationship the MDGs might have had on the rate of progress or impact on development. This paper only surveys whether there was faster rate of change after the establishment of the MDGs than before. Tests of causality of the impact of the MDGs would indeed be interesting and crucial for determining any potential success or failure of the MDGs but it lies outside the scope of this thesis. Instead, it is my hope that the findings of this paper will bring some additional clarity in assessing the state of progress in the MDG period and hopefully this could inspire future research on causality.

As much of the literature point out there are issues of the quality of data for the MDG indicators (Fukada-Parr et al., 2013; McArthur & Rasmussen, 2018; United Nations, 2015). The data reported on the MDG indictors came from a mixture of censuses, surveys, and estimations, and were combined from many different sources. During the MDG period data has been adjusted and even by the end of the MDG period several indicators lacked a sufficient amount of data. So, even if the most updated UN data is used for this paper one should be aware of this uncertainty.

Following the methods used in this paper there are some important considerations to bear in mind when analyzing the results. Just like the rationale for measuring the relative rate of change for decreasing indicators; at lower levels it becomes increasingly difficult to achieve faster rate of progress in absolute terms, the reverse goes for increasing indicators. For increasing indicators, the same absolute rate of change will mean a slower relative rate of change at higher levels than at lower levels. Both methods are tested for both types of indicators to get a comprehensive understanding but it should not come as a surprise that some decreasing indicators decelerated in absolute terms and that some increasing indicators also decelerated but in the relative rate of change. This follows the reasoning of Fukuda-Parr et al. (2013) and McArthur and Rasmussen (2018). Relating to this issue one must also consider that for countries that are very close to a potential natural ceiling or floor it is in general difficult to accelerate progress. McArthur and Rasmussen (2018) even exclude these observations. I have chosen to keep these observations in the sample (but not those that have already reached the ceiling or floor) since I want to capture the global trend as the MDGs were set on a global level.

With the methods I have used to evaluate the rate of change I have equalized the importance of any changes in all countries; no consideration has been taken regarding differences in the size of the populations. When calculating the percentage of countries with acceleration and testing for significant differences in means, the effect of a change in a very small country is the same as a change in a very large country. An advantage of this method is that for any development to be evaluated as successful in a sense, it must have been spread between several countries; it would not have been enough for one or two large countries to have accelerated progress but rather the overall global community would have had to experience this change. However, with this method comes also the disadvantage that the number of people having experienced any improvements in the rate of change is ignored. An alternative approach that would have considered the number of people rather than the number of countries is weighting the countries based on their population sizes. If the method of weighting had been used instead it is possible that the findings had been different from what they are now as the development in large countries, especially China and India, would have had a larger effect on the overall

results. The difference in the two methods comes down to whether progress in the global community should be measured among the numbers of countries or among the number of people. In this paper I have chosen to consider the number of countries.

Regarding the issue of multiple hypothesis testing I have as explained earlier corrected for this by using the Holm-Bonferroni sequential method. By using this method, the risk of making Type 1 errors is decreased. Although, not as conservative as the Bonferroni method, this sequential method is still considered as conservative and the gain in reducing Type 1 errors comes at the cost of lower power of the test and the increased risks of making Type 2 errors. All original p-values of the t-tests are reported in Appendix 3 and 4, and from these it is clear that the correction for multiple hypothesis testing had a major impact and reduced the number of significant findings considerably. It is important to remember that hypothesis testing never tells any truths or facts but rather show indications. The findings of hypothesis tests are affected by the arbitrary choice of significant level and there is always a tradeoff between the error types. For this test I have chosen to take a conservative approach.

7.1.1 Robustness test of periodization

Using 2003 as the cut-off year is not standard in the literature and to my knowledge the only work that do this is Fukuda-Parr et al. (2013). My reasoning for also using 2003 as the preferred cut-off are threefold; first following the reasoning of Fukuda-Parr et al. (2013) and using 2003 allows for some lag time for policy implementation. Second, although the foundation for the MDGs came from the Millennium Declaration in 2000 and the following road map for the Declaration's implementation from 2001, the official list of the goals, targets, and indicators became effective in 2003 (United Nations Statistical Division Millennium Development Goals Indicators, n.d.a). Lastly, allowing for 2002 and 2003 to be used as the cut-off years meant that more periods could be created as not all indicators were measured in all countries every year. However, to test whether this periodization had any significant effect on the outcomes, I conduct the t-tests using 2000–2001 as the cut-off year and find that the difference is small and the same conclusions can be drawn. For the complete result of the t-test using 2001 as the cut-off year see Appendix 5.

7.2 On the findings

The findings in Section 7 indicates that although many countries did improve their rate of change for indicators of several of the MDG targets, the global community did not experience any significant acceleration in progress in the MDG period in several of the areas covered by the goals. With exclusion of Goal 8, which will be discussed later in this section, the only goal that experienced significant rate of change in the desired direction on the global level was Goal

6; both the rate of change for the indicators of people living with aids and the tuberculosis incidence rate improved.

Many countries showed improvements in the relative rate for indicators of Goal 1 but none of these were significantly different. In a sense Goal 1 was the core of the MDGs as they emerged from the vision of creating an environment where poverty could be eliminated (United Nations General Assembly, 2001). The MDG report of 2015 states that the target of halving the proportion of people living in extreme poverty was reached globally already in 2010, and in 2015 it had also been reached among the developing countries but was still not achieved in Sub-Sharan Africa (United Nations, 2015). From the findings of this paper it then appears as the global community was on a pace of meeting this the target level even before the introduction of the MDGs. An interesting observation is that even when the countries are classified no category showed significant improvement in the rate of change for poverty. A potential explanation for this is that China and India, the world's two most populous countries, reduced their extreme poverty rate, which then had an effect on the global level (United Nations, 2015). This change is not as noticeable in my methods where the countries are not weighted.

Education seem to have been one of the shortfall areas of the MDGs when studying the rate of change. Not a single indicator of Goal 2 improved significantly in the rate during the MDG period and this holds also when the country categories are considered. This is different from the findings of McArthur and Rasmussen (2018) which found that school completion improved for low income countries. My findings suggest that the rate of change for school completion actually decreased for the low-income countries and for the LDCs, both in relative and absolute terms. Interestingly the same significant change did not occur in any other income group. Following the final report (United Nations, 2015, p.26) which tells that completion in low income countries is increasing while the other income groups are stagnating, this is likely explained by a fast rate of change in the 90´s for the low-income countries and as higher levels are reached the relative rate of change decrease. To explain the decreasing absolute rate of change it seems plausible that the logic of Osorio (2008) who looked at the net enrollment and concluded that for increasing indicators it will be more difficult to reach further improvements as higher levels are obtained; it is easy to reach early improvements but reaching the last improvements is difficult and requires more effort.

Gender equality did not experience any significant difference in any direction for any category. UN reports that a majority of the regions obtained gender parity in primary education but not in higher levels. Like gender equality, maternal health did not experience much improvements. The final report of the UN states that gender inequality still exists and that many people are left behind because of their sex (United Nations, 2015). It seems like the rate of change for maternal mortality might not have experienced progress and that this could also be a gender issue.

Reducing child mortality did on the other hand experience improvements in low-income countries, LDCs and the most corrupt countries. This seems logical as these countries started at a lower level than many other countries and were the countries in need of improvement. Combating HIV and other diseases showed significant improvement in the rate of change over several categories and when all countries are considered.

Ensuring environmental stability appears to not have experienced any improved rates of change in general. The only improvements in rate of progress was for CO2 emissions and occurred in the high-income group. Several categories experienced a decreasing rate of change for the clean water and sanitation indicators which is likely explained by that many countries stared at a high level for these indicators. Regarding environmental sustainability and economic growth, these findings could potentially follow the model of the Kuznets curve; the environment first worsens and then improves as income per capita rises. However, such a curve has been empirically questioned (Stern, 2004).

Regarding Goal 8, it distinguishes itself from the others in the sense that it is not a goal of development itself, but rather a goal to promote and enhance development in other areas. The most important parts of the eighth goal are those regarding trade, aid and debt relief according to the UN Implementation report 2003 (United Nations General Assembly, 2003, p.11). The report even states "It is no exaggeration to state that the success or failure of all the Millennium Development Goals hinges on whether developed countries meet their commitments in these areas." (United Nations General Assembly, 2003, p.11). Fukada-Parr et al. (2013) only includes one indicator of Goal 8 and McArthur and Rasmussen (2018) exclude it completely. Fukada-Parr et al. (2013) argue that Goal 8 is more of a mean to reach the other goals and that several of the indicators are not about creating development but are rather just about plugging in numbers. However, I have included Goal 8 with the argument that it is of interest since the UN claimed that the other goals were dependent on its development (UN Implementation report, 2003). When considering the findings, it is important to remember that many of the indicators of Goal 8 only applies to a certain group of countries such as the OECDs or LDCs, so that there are variations in the findings of the country categories should not come as a surprise. There is mostly the indicators of Target 8F that appear to be significantly different. The varying increase and decrease in the rate of change among these indicators should not come as a surprise considering the technological development the world has experienced in the last decades. From these findings one can actually follow how this development likely has spread; the high-income countries had a deceleration of mobile subscription and internet users, likely because of earlier rapid change, while low-income countries experienced acceleration of these indicators.

When studying the findings of the different country categories it is important to know that several of the groups are quite similar, for example the low-income group and LDCs, and many high-income countries are democracies. The categorization has not been included to assess which group of countries were successful during the MDG period. However, by creating these groups it is possible to distinguish significant differences that are relevant for the different groups. For example, poverty reduction, increasing enrollment in primary education, and reducing child mortality is more relevant for low income countries than high income countries out of which many countries started at high levels. By separating these groups, it is possible to see more specifically if there were any improved rate of change for certain countries. Taking, child mortality as an example, on an overall level there was no significant difference in this indicator, however, among the low-income countries there was relative acceleration. When considering these results, it is also important to know that for some groups the sample size became small.

Out of the categories the income and corruption classifications generated the most significant differences. As already discussed the different groups of incomes captures that countries often faces different problems depending on their income level. As for corruption, there are some similarities with the findings of the income levels. Several of the significant indicators of the most corrupt countries are similar to those of the low-income countries and so on. The findings cannot directly be compared to those reviewed in Section 2.2.1 as those concern levels rather than change. However, these findings do indicate that corrupt countries did experience improved rate of change in several indicators. So, from this a possible conclusion is that although corrupt countries might not reach the same equilibrium level as non-corrupt countries as suggested by Casquero et al. (2016), they can still improve. The development of LDCs showed unsurprisingly similarities with the low-income group. As for openness it appears to have had a small impact on any rate of change. Most of the indicators that showed significant differences depending on openness appear to be those of Target 8F. Considering the different groups of system of government, one finding that appear as interesting is that there were only indicators related to Goal 6 and Goal 8 that accelerated, and for autocracies it was only indicators of Goal 8. However, very few indicators appear to have accelerated or decelerated significantly based on the system of government.

8. Concluding remarks

With this thesis I have tried to assess whether there was any change in the rate of progress during the MDG period compared to before the establishment of the goals. While building on the works of others, I have taken on a more conservative method and studied both the absolute

and relative rate of change to capture any increased difficulties that could occur as improved levels are reached. The percentage of countries that experienced improvements in the rate of change from the first year to last was high for many indicators. For about half of the indicators more than 50% of the countries experienced accelerated relative change and for about one quarter of the indicators more than 50% of the countries accelerated in absolute progress. However, the t-tests of the means suggest that the differences in the rates of change were seldom significant and that some indicators actually significantly decelerated. When categorizing on different country characteristics the findings changes somewhat and more indicators becomes significantly different depending on category. As these findings do not test for any causation of the MDGs on progress, no such assessment can be done. Nonetheless when assessing whether there was improved rate of change in the MDG period these findings suggest that few areas accelerated in progress. However, the most number of improvements appear to have occurred in low-income category and high corruption category, two categories that share many countries. This seems reasonable as the purpose of the MDGs was to help the poorest people.

The findings in this paper show similarities with those of earlier works when looking at the percentage of countries with improvement, but when including the significance tests the results becomes less optimistic. The common results with the work of Hailu and Tsukada (2010) is that little progress appears to have happened regarding Goals 3, 5, and 7. Goal 3 is regarding equality and in a sense so is Goal 5, and as the UN states, women are still facing inequalities in several areas (United Nations, 2015). A potential explanation for why these goals have not accelerated is that they do not have any quick fix as some of the other goals actually do in some sense. It is likely to be easier to implement an immunization program against measles than changing a social structure where women are facing inequalities. The same reasoning could also follow for environmental sustainability; there is not a quick solution.

This paper has provided some suggestions that the MDG period was not as successful as the UN paints it, but it is a matter of how to assess the MDGs; was the ultimate goal for all countries to reach the targets or was it enhance increased development? No matter what, it is critical to assess any causal relationship between the MDGs and progress. To my knowledge there is a large research gap on this topic and to truly evaluate the MDGs such studies would be necessary. Considering the complexity and interrelatedness of the MDGs this is likely no simple task.

The MDG period ended in 2015 and in September the same year the heads of states and high representatives met at the UN and adopted the 2030 Agenda for sustainable development. The agenda is a plan of action and builds on the MDGs: it focuses on sustainability in three areas: economic, social and environmental, and includes 17 goals (Sustainable Development Goals;

SDGs) and 169 targets (United Nations, n.d.). The SDGs are even more comprehensive than the MDGs and covers a broad range of areas, a difference between the SDGs and the MDGs is that although the SDGs also aim at eliminating poverty they also cover more areas that is of more relevance to developed countries (United Nations, n.d.). Following the findings in this paper it would appear as the SDGs will face difficulties in accelerating progress, considering the little significant difference in the rate of change the MDGs had on the more long-term issues. On the other hand, it is also possible that the SDGs will be more successful in these areas as they focus more on long-term sustainability and the global community now can build on the work of the MDGs.

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Appendices

Appendix 1. List of MDG goals, targets and indicators

Goals and Targets	Indicators for monitoring	Author comments
Goal 1: Eradicate extreme poverty and hunger		
Target 1.A: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	1.1 Proportion of population below $1.25 (PPP) per day[a]	Included
	1.2 Poverty gap ratio	Included
	1.3 Share of poorest quintile in national consumption	Included
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people	1.4 Growth rate of GDP per person employed	Not included
	1.5 Employment-to-population ratio	Not included
	1.6 Proportion of employed people living below $1.25 (PPP) per day	Not included
	1.7 Proportion of own-account and contributing family workers in total employment	Not included
Target 1.C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1.8 Prevalence of underweight children under-five years of age	Included
	1.9 Proportion of population below minimum level of dietary energy consumption	Included
Goal 2: Achieve universal primary education		
Target 2.A: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling	2.1 Net enrolment ratio in primary education	Included
	2.2 Proportion of pupils starting grade 1 who reach last grade of primary	Included
	2.3 Literacy rate of 15–24 year-olds, women and men	Included
Goal 3: Promote gender equality and empower women		
Target 3.A: Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015	3.1 Ratios of girls to boys in primary, secondary and tertiary education	3.1.a: primary, 3.1.b: secondary
	3.2 Share of women in wage employment in the non-agricultural sector	Included
	3.3 Proportion of seats held by women in national parliament	Included
Goal 4: Reduce child mortality		
Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	4.1 Under-five mortality rate	Included
	4.2 Infant mortality rate	Included
	4.3 Proportion of 1 year-old children immunized against measles	Included

Goal 5: Improve maternal health		
Target 5.A: Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	5.1 Maternal mortality ratio	Included
	5.2 Proportion of births attended by skilled health personnel	Included
Target 5.B: Achieve, by 2015, universal access to reproductive health	5.3 Contraceptive prevalence rate	Not included
	5.4 Adolescent birth rate	Not included
	5.5 Antenatal care coverage (at least one visit and at least four visits)	Not included
	5.6 Unmet need for family planning	Not included
Goal 6: Combat HIV/AIDS, malaria and other diseases		
Target 6.A: Have halted by 2015 and begun to reverse the spread of HIV/AIDS	6.1 HIV prevalence among population aged 15–24 years	Included
	6.2 Condom use at last high-risk sex	Not included
	6.3 Proportion of population aged 15–24 years with comprehensive correct knowledge of HIV/AIDS	Not included
	6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14 years	Not included
Target 6.B: Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it	6.5 Proportion of population with advanced HIV infection with access to antiretroviral drugs	Not included
Target 6.C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	6.6 Incidence and death rates associated with malaria	Included
	6.7 Proportion of children under 5 sleeping under insecticide-treated bednets	Not included
	6.8 Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs	Not included
	6.9 Incidence, prevalence and death rates associated with tuberculosis	6.9.a: incidence, 6.9.b: prevalence, 6.9.c: death
	6.10 Proportion of tuberculosis cases detected and cured under directly observed treatment short course	Treatment rate included

Goal 7: Ensure environmental sustainability		
Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	7.1 Proportion of land area covered by forest	Included
	7.2 CO2 emissions, total, per capita and per $1 GDP (PPP)	7.2.a: tons, 7.2.b: per capita, 7.2.c: per $1
Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.3 Consumption of ozone-depleting substances	Included
	7.4 Proportion of fish stocks within safe biological limits	Not included
	7.5 Proportion of total water resources used	Included
	7.6 Proportion of terrestrial and marine areas protected	Included
	7.7 Proportion of species threatened with extinction	Not included
Target 7.C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8 Proportion of population using an improved drinking water source	Included
	7.9 Proportion of population using an improved sanitation facility	Included
Target 7.D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	7.10 Proportion of urban population living in slums[b]	Included
Goal 8: Develop a global partnership for development		
Target 8.A: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system Target 8.B: Address the special needs of the least developed countries Target 8.C: Address the special needs of landlocked developing countries and small island developing States Target 8.D: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term	<u>Official development assistance (ODA)</u> 8.1 Net ODA, total and to the least developed countries, as percentage of OECD/DAC donors' gross national income	8.1.a: net ODA as % of donors GNI 8.1.b: net ODA to LDCs as % of donors GNI
	8.2 Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care,nutrition, safe water and sanitation)	Not included
	8.3 Proportion of bilateral official development assistance of OECD/DAC donors that is untied	Included
	8.4 ODA received in landlocked developing countries as a proportion of their gross national incomes	Included
	8.5 ODA received in small island developing States as a proportion of their gross national incomes	Included

	Market access	
	8.6 Proportion of total developed country imports (by value and excluding arms) from developing countries and least developed countries, admitted free of duty	Included
	8.7 Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries	Not included
	8.8 Agricultural support estimate for OECD countries as a percentage of their gross domestic product	Included
	8.9 Proportion of ODA provided to help build trade capacity	Not included
	Debt sustainability	
	8.10 Total number of countries that have reached their HIPC decision points and number that have reached their HIPC completion points (cumulative)	Not included
	8.11 Debt relief committed under HIPC and MDRI Initiatives	Not included
	8.12 Debt service as a percentage of exports of goods and services	Included
Target 8.E: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	8.13 Proportion of population with access to affordable essential drugs on a sustainable basis	Not included
Target 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications	8.14 Fixed-telephone subscriptions per 100 inhabitants	Included
	8.15 Mobile-cellular subscriptions per 100 inhabitants	Included
	8.16 Internet users per 100 inhabitants	Included

Soucre: United Nations Statistical Division Millennium Development Goals Indicators. (n.d.b).

Appendix 2. Country Classifications[a]

Country	Corruption[b]	Income[c]	LDC[d]	Openness[e]	System of government[f]
Afghanistan		L		3	Anocracy
Albania	1	LM		2	Democracy
Algeria	2	LM		2	Anocracy
American Samoa		UM		3	
Andorra		H			
Angola	1	L	Yes	3	Anocracy
Anguilla					
Antigua and Barbuda		UM		3	
Argentina	1	UM		1	Democracy
Armenia	2	LM		2	Anocracy
Aruba		H		3	
Australia	4	H		1	Democracy
Austria	4	H		2	Democracy
Azerbaijan	1	LM		3	Autocracy
Bahamas		H		2	
Bahrain	3	H		3	Autocracy
Bangladesh	1	L	Yes	1	Democracy
Barbados		UM		2	
Belarus	2	LM		3	Autocracy
Belgium	4	H		3	Democracy
Belize	2	UM		3	
Benin		L	Yes	1	Democracy
Bermuda		H			
Bhutan		L	Yes	2	Autocracy
Bolivia	1	LM		2	Democracy
Bosnia and Herzegovina	2	LM		3	Anocracy
Botswana	3	UM		2	Democracy
Brazil	2	LM		1	Democracy
British Virgin Islands					
Brunei Darussalam		H		3	
Bulgaria	2	LM		2	Democracy
Burkina Faso		L	Yes	1	Anocracy
Burundi		L	Yes	1	Anocracy
Cambodia		L	Yes	3	Anocracy
Cameroon	1	L		1	Anocracy
Canada	4	H		2	Democracy
Cape Verde			Yes		Democracy
Cayman Islands		H			
Central African Republic		L	Yes	1	Anocracy
Chad		L	Yes	2	Anocracy

Chile	3	UM		2	Democracy
China	2	LM		2	Autocracy
China, Hong Kong	4	H		3	
China, Maca		H		3	
Colombia	2	LM		1	Democracy
Comoros		L	Yes	2	Anocracy
Congo	2	L		3	Anocracy
Cook Islands					
Costa Rica		UM		2	Democracy
Cote d'Ivoire	1	L		2	
Croatia	2	UM		2	Democracy
Cuba	2	LM		1	Autocracy
Cyprus	3	H		3	Democracy
Czech Republic	2	UM		2	Democracy
Democratic Republic of the Congo	1	L	Yes	2	Democracy
Denmark	4	H		2	Democracy
Djibouti		LM	Yes	2	Anocracy
Dominica		UM		2	
Dominican Republic	2	LM		2	Democracy
Ecuador	1	LM		1	Democracy
Egypt	2	LM		1	Autocracy
El Salvador	2	LM		2	Democracy
Equatorial Guinea		L	Yes	3	Autocracy
Eritrea		L	Yes	2	Autocracy
Estonia	3	UM		3	Democracy
Ethiopia	1	L	Yes		Anocracy
European Union (EU)					
Faeroe Islands		H		3	
Falkland Islands (Malvinas)					
Fiji		LM		3	Democracy
Finland	4	H		2	Democracy
France	3	H		2	Anocracy
French Guiana					
French Polynesia		H			
Gabon		UM		2	Democracy
Gambia	1	L	Yes	2	Anocracy
Georgia	1	LM		2	Democracy
Germany	4	H		2	Democracy
Ghana	2	L		2	Anocracy
Gibraltar					
Greece	2	H		1	Anocracy
Greenland		H		2	

Grenada		UM		2	
Guadeloupe					
Guam		H		2	
Guatemala	1	LM		2	Anocracy
Guinea		L	Yes	2	Democracy
Guinea-Bissau		L	Yes	1	Democracy
Guyana		LM		3	Anocracy
Haiti	1	L	Yes	2	Democracy
Honduras	1	LM		3	Anocracy
Hungary	2	UM		3	Democracy
Iceland	4	H		2	
India	2	L		1	Democracy
Indonesia	1	LM		2	Democracy
Iran (Islamic Republic of)	2	LM		2	Democracy
Iraq	1	LM		3	Anocracy
Ireland	3	H		3	Democracy
Israel	3	H		2	Anocracy
Italy	3	H		1	Democracy
Jamaica	2	LM		2	Anocracy
Japan	3	H		1	Anocracy
Jordan	2	LM		3	Democracy
Kazakhstan	1	LM		2	Anocracy
Kenya	1	L		2	Democracy
Kiribati		LM	Yes	3	
Korea, Democratic People's Republic of		L			Autocracy
Korea, Republic of	2	H		2	Democracy
Kuwait	3	H		2	Democracy
Kyrgyzstan	1	L		2	Autocracy
Lao People's Democratic Republic		L	Yes	2	Autocracy
Latvia	2	UM		2	Autocracy
Lebanon	2	UM		2	Anocracy
Lesotho		L	Yes		Anocracy
Liberia		L	Yes	2	Democracy
Libyan Arab Jamahiriya	1	UM		2	Democracy
Liechtenstein		H			
Lithuania	2	UM		2	Autocracy
Luxembourg	4	H		3	Democracy
Madagascar	2	L	Yes	2	Democracy
Malawi	2	L	Yes	2	Democracy
Malaysia	3	UM		3	Democracy
Maldives		LM	Yes		

Mali	2	L	Yes	2	Democracy
Malta		H		3	
Marshall Islands		LM			
Martinique					
Mauritania		L	Yes	2	Democracy
Mauritius	2	UM		3	Anocracy
Mayotte					
Mexico	2	UM		2	Anocracy
Micronesia, Federated States of		LM			
Monaco		H			
Mongolia		L		3	Democracy
Montenegro				2	
Montserrat					
Morocco	2	LM		2	Democracy
Mozambique	2	L	Yes	2	Autocracy
Myanmar	1	L	Yes	1	Autocracy
Namibia	2	LM		2	Anocracy
Nauru					
Nepal		L	Yes	1	Democracy
Netherlands	4	H		3	Democracy
Netherlands Antilles					
New Caledonia		H			
New Zealand	4	H		2	Autocracy
Nicaragua	2	L		2	Democracy
Niger		L	Yes	1	Anocracy
Nigeria	1	L		2	Democracy
Niue					
Northern Mariana Islands					
Norway	4	H		2	Anocracy
Oman	3	UM		2	Democracy
Pakistan	1	L		1	Autocracy
Palau		UM		3	
Panama	2	UM		3	Anocracy
Papua New Guinea	1	L		3	Democracy
Paraguay	1	LM		2	Democracy
Peru	2	LM		1	Democracy
Philippines	1	LM		3	Democracy
Poland	2	UM		2	Anocracy
Portugal	3	H		2	Democracy
Puerto Rico		H		3	
Qatar	3	H		2	Autocracy
Republic of Moldova	1	L		3	Democracy
Reunion					

Romania	2	LM		2	Democracy
Russian Federation	2	LM		2	Democracy
Rwanda		L	Yes	1	Democracy
Saint Helena					
Saint Kitts and Nevis		UM		2	
Saint Lucia		UM		3	
Saint Pierre and Miquelon					
Saint Vincent and the Grenadines		UM		2	
Samoa		LM	Yes	2	
San Marino		H			
Sao Tome and Principe		L	Yes		
Saudi Arabia	2	UM		2	Democracy
Senegal	2	L	Yes	2	Autocracy
Serbia	1			2	
Serbia and Montenegro					
Seychelles		UM		3	
Sierra Leone	1	L	Yes	1	Democracy
Singapore	4	H		3	Anocracy
Slovakia	2	UM		3	Anocracy
Slovenia	3	H		3	Democracy
Solomon Islands		L	Yes	2	Democracy
Somalia		L	Yes		Anocracy
South Africa	2	LM		2	Anocracy
South Sudan					
Spain	3	H		2	Anocracy
Sri Lanka	2	LM		2	Democracy
State of Palestine	2				
Sudan	1	L	Yes	1	Anocracy
Sudan (former)			Yes		
Suriname		LM		2	Autocracy
Swaziland		LM		3	Anocracy
Sweden	4	H		2	Autocracy
Switzerland	4	H		2	Democracy
Syrian Arab Republic	2	LM		2	Democracy
Tajikistan	1	L		3	Autocracy
Thailand	2	LM		3	Anocracy
The former Yugoslav Republic of Macedonia	1	LM		2	Autocracy
Timor-Leste		L	Yes	3	
Togo		L	Yes	3	Autocracy
Tokelau					
Tonga		LM		2	

Trinidad and Tobago	2	UM		2	Anocracy
Tunisia	2	LM		2	Democracy
Turkey	2	LM		1	Anocracy
Turkmenistan		LM		3	Democracy
Turks and Caicos Islands					
Tuvalu			Yes		
Uganda	1	L	Yes	1	Autocracy
Ukraine	1	LM		3	Democracy
United Arab Emirates	3	H		3	Democracy
United Kingdom	4	H		1	Anocracy
United Republic of Tanzania	1	L	Yes	1	Democracy
United States	3	H		1	Democracy
United States Virgin Islands		H		3	
Uruguay	3	UM		2	Democracy
Uzbekistan	1	L		2	Democracy
Vanuatu		LM	Yes	2	
Venezuela	1	UM		2	Autocracy
Viet Nam	1	L		3	Democracy
Wallis and Futuna Islands					
Western Sahara					
Yemen	2	L	Yes	2	Autocracy
Zambia	1	L	Yes	2	Anocracy
Zimbabwe	1	L		2	Anocracy

Author classification based on data from the World Bank (n.d.) Rural population (% of total population) indicator.

[a] All data is for the year of 2003.

[b] Corruption classification: 1: $0 \leq$ index score ≤ 2.5, 2: $2.5 <$ index score ≤ 5.0, 3: $5.0 <$ index score ≤ 7.5, and 4: $7.5 <$ index score ≤ 10. A low score indicates a high degree of corruption and a high score indicates a low degree of corruption. Author classification based on data from Transparency international (2003).

[c] Income classification: L= Lower income: GNI per capita $\leq$ \$735, LM = Lower-Middle income: \$736 $\leq$ GNI per capita $\leq$ \$2,935, UM = Upper-middle income: \$2,936$\leq$ GNI per capita $\leq$ \$9,075, and H = High income: GNI per capita > \$9,075. Classification is gather from the World Bank (n.d.) Historical classification by income.

[d] LDC country classification: "Yes" means that the country is classified as a least developed country by the UN. Classification is gather from United Nations Development Policy & Analysis Division (n.d.).

[e] Openness classification: based on the openness index of trade dependency as the ratio of trade to the country´s GDP. 1: $0 \leq$ trade to GDP ratio $< 50\%$, 2: $50\% \leq$ trade to GDP ratio $< 100\%$, and 3: $100\% \leq$ trade to GDP ratio. Author classification based on data from the World Bank (n.d.) Trade (% of GDP) indicator.

[f] System of government classification: Autocracy: $-10 \leq$ Polity score ≤ -6, Anocracy: $-5 \leq$ Polity score ≤ 5, and Democracy: $6 \leq$ Polity score ≤ 10, following the classification of The Center for Systematic Peace. Classification is gather from the Center for Systematic Peace (2017).

Appendix 3. T-tests of uncategorized data

		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	62	-0.720	1.383	-0.806	1.144	-0.086	0.228	0.688	0.006	-0.022	0.073	-0.081	0.136	-0.059	0.019	0.009	0.002
1.2	59	-0.530	1.168	-0.293	0.641	0.237	0.173	0.180	0.003	-0.027	0.068	-0.057	0.075	-0.030	0.006	0.046	0.003
1.3	79	0.018	0.179	0.012	0.167	-0.006	0.028	0.855	0.010	0.004	0.029	0.004	0.024	0.000	0.001	0.978	0.025
1.8	55	-0.249	0.585	-0.494	0.550	-0.246	0.108	0.048	0.002	-0.015	0.038	-0.043	0.064	-0.027	0.004	0.023	0.002
1.9	170	-0.256	0.726	-0.309	0.534	-0.053	0.069	0.368	0.004	-0.012	0.031	-0.019	0.030	-0.008	0.001	0.014	0.002
2.1	90	0.636	0.953	0.323	1.270	-0.313	0.167	0.034	0.002	0.010	0.018	0.005	0.020	-0.005	0.000	0.016	0.002
2.2	89	1.273	1.278	0.192	1.073	-1.081	0.177	0.000*	0.001	0.020	0.024	0.002	0.017	-0.018	0.000	0.000*	0.001
2.3	39	0.498	0.710	0.256	0.777	-0.242	0.169	0.025	0.002	0.010	0.020	0.004	0.013	-0.006	0.000	0.038	0.002
3.1.a	162	-0.003	0.006	-0.002	0.007	0.001	0.001	0.095	0.002	-0.002	0.005	-0.002	0.006	0.001	0.000	0.129	0.003
3.1.b	136	-0.004	0.008	-0.004	0.009	0.000	0.001	0.993	0.050	-0.003	0.007	-0.003	0.008	0.000	0.000	0.878	0.013
3.2	108	0.241	0.350	0.184	0.341	-0.057	0.047	0.260	0.003	0.008	0.012	0.006	0.013	-0.002	0.000	0.295	0.004
3.3	133	0.313	0.677	0.573	0.710	0.260	0.085	0.005	0.001	0.030	0.064	0.036	0.050	0.007	0.002	0.431	0.005
4.1	195	-1.603	1.982	-1.662	1.912	-0.059	0.197	0.634	0.006	-0.033	0.022	-0.039	0.020	-0.006	0.000	0.003	0.002
4.2	195	-1.046	1.101	-1.014	0.989	0.032	0.106	0.624	0.005	-0.031	0.020	-0.036	0.019	-0.004	0.000	0.010	0.002
4.3	190	0.780	1.598	0.497	1.067	-0.283	0.139	0.054	0.002	0.020	0.065	0.007	0.017	-0.013	0.000	0.009	0.002
5.1	183	-7.029	12.475	-6.629	10.650	0.399	1.213	0.603	0.005	-0.026	0.027	-0.030	0.023	-0.004	0.001	0.132	0.003
5.2	82	0.495	1.035	0.855	1.069	0.360	0.164	0.027	0.002	0.012	0.024	0.016	0.025	0.004	0.001	0.201	0.004
6.1	117	0.131	0.340	-0.044	0.125	-0.175	0.034	0.000*	0.001	0.032	0.043	-0.008	0.021	-0.040	0.000	0.000*	0.001
6.9.a	210	1.208	11.616	-3.162	10.193	-4.370	1.066	0.001*	0.001	-0.006	0.049	-0.025	0.056	-0.020	0.003	0.001*	0.001
6.9.b	211	-2.669	13.185	-5.379	13.824	-2.710	1.315	0.036	0.002	-0.015	0.046	-0.031	0.062	-0.017	0.004	0.004	0.002
6.9.c	207	-0.542	1.986	-0.712	1.834	-0.171	0.188	0.311	0.003	-0.018	0.051	-0.027	0.047	-0.009	0.002	0.078	0.003
6.10	133	0.976	2.389	0.117	1.851	-0.860	0.262	0.003	0.001	0.018	0.046	0.001	0.029	-0.017	0.001	0.001*	0.001
7.1	223	-0.055	0.353	-0.052	0.262	0.003	0.029	0.859	0.013	-0.001	0.011	-0.001	0.011	0.000	0.000	0.607	0.006
7.2.a	206	1709.12	13184.8	4083.7	40071.6	2374.6	2939.2	0.258	0.003	0.028	0.058	0.028	0.041	0.000	0.002	0.983	0.050
7.2.b	184	0.016	0.246	0.009	0.280	-0.006	0.027	0.833	0.008	0.011	0.054	0.013	0.038	0.002	0.001	0.706	0.008
7.2.c	170	-0.005	0.016	-0.005	0.014	0.000	0.002	0.971	0.017	-0.004	0.043	-0.015	0.034	-0.011	0.001	0.008	0.002
7.3	171	-351.70	2144.00	-83.19	357.86	268.51	166.23	0.093	0.002	-0.008	0.045	-0.016	0.073	-0.008	0.005	0.152	0.003
7.5	57	1.384	10.855	1.368	8.595	-0.016	1.834	0.974	0.025	0.011	0.102	0.002	0.038	-0.009	0.001	0.558	0.006
7.6	223	0.196	0.385	0.327	0.809	0.131	0.060	0.028	0.002	0.027	0.047	0.029	0.050	0.002	0.002	0.689	0.007
7.8	166	0.479	0.516	0.462	0.555	-0.017	0.059	0.293	0.003	0.008	0.012	0.006	0.009	-0.002	0.000	0.000*	0.001
7.9	181	0.464	0.557	0.433	0.532	-0.031	0.057	0.102	0.002	0.013	0.021	0.009	0.012	-0.004	0.000	0.000*	0.001
7.10	48	-0.756	0.777	-0.686	0.778	0.070	0.159	0.533	0.004	-0.015	0.015	-0.015	0.031	0.000	0.001	0.976	0.017
8.1.a	23	-0.001	0.015	0.005	0.012	0.006	0.004	0.116	0.002	-0.001	0.010	0.003	0.008	0.004	0.000	0.171	0.003
8.1.b	23	0.000	0.006	0.000	0.007	-0.001	0.002	0.784	0.007	0.000	0.005	0.000	0.006	0.000	0.000	0.784	0.010
8.3	18	1.940	2.070	0.672	2.947	-1.268	0.849	0.189	0.003	0.028	0.048	0.010	0.069	-0.018	0.005	0.450	0.005
8.4	29	0.100	0.516	-0.369	0.598	-0.469	0.147	0.017	0.002	0.027	0.082	-0.045	0.063	-0.072	0.004	0.005	0.002
8.5	30	-0.526	1.007	0.014	0.608	0.540	0.215	0.010	0.001	-0.052	0.076	0.004	0.055	0.056	0.003	0.006	0.002
8.8	14	-0.086	0.103	-0.046	0.047	0.040	0.030	0.145	0.002	-0.048	0.023	-0.040	0.023	0.008	0.001	0.337	0.004
8.12	102	-0.374	1.045	-0.504	1.036	-0.130	0.146	0.411	0.004	-0.016	0.075	-0.058	0.088	-0.042	0.008	0.001*	0.001
8.14	218	0.614	0.664	-0.237	0.842	-0.851	0.073	0.000*	0.001	0.039	0.033	-0.006	0.045	-0.046	0.002	0.000*	0.001
8.15	219	2.385	2.349	6.801	3.617	4.417	0.291	0.000*	0.001	0.201	0.100	0.165	0.104	-0.036	0.011	0.006	0.002
8.16	212	1.275	1.553	2.669	1.606	1.394	0.153	0.000*	0.001	0.163	0.099	0.127	0.066	-0.036	0.004	0.001*	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Appendix 4. T-tests of country categorized data.

Most corrupt		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	20	-0.505	1.416	-1.268	1.459	-0.763	0.455	0.109	0.002	-0.013	0.112	-0.094	0.099	-0.082	0.033	0.053	0.003
1.2	19	-0.276	0.786	-0.462	0.910	-0.186	0.276	0.580	0.006	-0.016	0.094	-0.080	0.078	-0.064	0.028	0.064	0.003
1.3	20	0.038	0.254	-0.012	0.255	-0.050	0.080	0.647	0.007	0.002	0.040	0.004	0.035	0.003	0.012	0.873	0.050
1.8	19	-0.440	0.517	-0.523	0.549	-0.082	0.173	0.674	0.008	-0.019	0.018	-0.033	0.030	-0.013	0.008	0.122	0.004
1.9	38	-0.305	1.030	-0.590	0.629	-0.286	0.196	0.093	0.002	-0.008	0.043	-0.033	0.033	-0.025	0.009	0.005	0.002
2.1	13	0.761	1.207	0.575	1.915	-0.185	0.628	0.708	0.010	0.016	0.029	0.010	0.032	-0.006	0.012	0.333	0.006
2.2	17	1.245	1.080	0.147	0.906	-1.099	0.342	0.010	0.002	0.020	0.022	0.001	0.013	-0.020	0.006	0.016	0.002
2.3	11	0.381	0.621	0.270	0.713	-0.110	0.285	0.471	0.005	0.006	0.011	0.003	0.010	-0.003	0.004	0.221	0.005
3.1.a	35	-0.003	0.006	-0.004	0.009	-0.001	0.002	0.427	0.004	-0.002	0.005	-0.003	0.008	-0.001	0.002	0.398	0.007
3.1.b	22	-0.004	0.010	-0.004	0.006	0.001	0.002	0.763	0.013	-0.004	0.008	-0.003	0.005	0.001	0.002	0.768	0.017
3.2	17	0.231	0.325	0.199	0.473	-0.033	0.139	0.833	0.017	0.009	0.013	0.006	0.017	-0.003	0.005	0.535	0.010
3.3	23	0.191	0.721	0.957	0.847	0.766	0.232	0.007	0.002	0.013	0.058	0.058	0.049	0.045	0.016	0.037	0.002
4.1	42	-2.086	1.659	-2.387	1.731	-0.301	0.370	0.230	0.003	-0.029	0.019	-0.042	0.017	-0.013	0.004	0.000*	0.001
4.2	42	-1.331	0.877	-1.470	0.885	-0.139	0.192	0.297	0.003	-0.026	0.017	-0.038	0.017	-0.011	0.004	0.000*	0.001
4.3	41	1.038	1.476	0.654	1.185	-0.384	0.296	0.221	0.003	0.022	0.056	0.010	0.017	-0.012	0.009	0.186	0.004
5.1	42	-7.440	9.864	-9.669	13.957	-2.229	2.637	0.197	0.002	-0.024	0.023	-0.029	0.022	-0.005	0.005	0.274	0.005
5.2	23	0.457	1.095	1.144	0.998	0.687	0.309	0.032	0.002	0.012	0.021	0.023	0.026	0.011	0.007	0.076	0.003
6.1	37	0.068	0.184	-0.051	0.148	-0.119	0.039	0.028	0.002	0.022	0.027	-0.006	0.021	-0.028	0.006	0.000*	0.002
6.9.a	41	2.386	9.024	-5.946	8.399	-8.333	1.925	0.000*	0.001	0.012	0.038	-0.030	0.033	-0.042	0.008	0.000*	0.001
6.9.b	41	-1.859	11.637	-10.568	16.964	-8.709	3.213	0.022	0.002	-0.001	0.038	-0.036	0.043	-0.035	0.009	0.001*	0.002
6.9.c	41	-0.682	1.477	-1.219	1.565	-0.538	0.336	0.098	0.002	-0.014	0.043	-0.044	0.044	-0.030	0.010	0.010	0.002
6.10	35	1.290	2.310	0.632	1.008	-0.657	0.426	0.198	0.003	0.025	0.051	0.008	0.014	-0.017	0.009	0.098	0.003
7.1	41	-0.196	0.390	-0.155	0.319	0.040	0.079	0.085	0.002	-0.004	0.009	-0.004	0.010	0.000	0.002	0.815	0.025
7.2.a	40	27.290	5218.07	1874.40	5855.18	1847.11	1240.07	0.044	0.002	0.012	0.058	0.037	0.038	0.025	0.011	0.023	0.002
7.2.b	40	-0.044	0.139	0.020	0.141	0.064	0.031	0.098	0.002	-0.005	0.051	0.020	0.035	0.025	0.010	0.015	0.002
7.2.c	36	-0.010	0.026	-0.010	0.023	0.000	0.006	0.980	0.050	-0.007	0.045	-0.018	0.039	-0.011	0.010	0.278	0.006
7.3	42	0.594	105.407	-47.468	94.111	-48.062	21.804	0.084	0.002	0.001	0.020	-0.011	0.018	-0.012	0.004	0.030	0.002
7.5	10	-0.570	1.274	-0.173	1.005	0.397	0.513	0.544	0.006	-0.024	0.073	0.003	0.048	0.027	0.028	0.473	0.008
7.6	42	0.159	0.309	0.111	0.151	-0.048	0.053	0.331	0.003	0.024	0.032	0.013	0.014	-0.010	0.005	0.055	0.003
7.8	41	0.511	0.551	0.506	0.525	-0.005	0.119	0.849	0.025	0.009	0.014	0.007	0.009	-0.002	0.003	0.042	0.003
7.9	41	0.496	0.552	0.526	0.584	0.030	0.126	0.381	0.004	0.014	0.020	0.011	0.014	-0.003	0.004	0.026	0.002
7.10	11	-0.687	0.731	-0.440	1.003	0.248	0.374	0.443	0.004	-0.010	0.013	-0.007	0.030	0.003	0.010	0.757	0.013
8.4	12	0.326	0.371	-0.480	0.490	-0.806	0.177	0.002	0.001	0.066	0.075	-0.068	0.057	-0.134	0.027	0.001*	0.002
8.12	32	-0.791	1.410	-0.563	0.757	0.229	0.283	0.472	0.005	-0.030	0.093	-0.068	0.080	-0.038	0.022	0.144	0.004
8.14	41	0.231	0.273	0.165	0.393	-0.066	0.075	0.339	0.003	0.037	0.033	0.012	0.034	-0.025	0.007	0.002	0.002
8.15	41	0.700	0.779	7.823	2.758	7.123	0.447	0.000*	0.001	0.140	0.079	0.244	0.077	0.103	0.017	0.000*	0.002
8.16	41	0.235	0.279	2.336	1.586	2.101	0.251	0.000*	0.001	0.086	0.057	0.181	0.060	0.095	0.013	0.000*	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Second to most corrupt		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	29	-0.419	1.005	-0.501	0.710	-0.082	0.229	0.612	-0.002	-0.020	0.051	-0.092	0.178	-0.072	0.034	0.061	0.002
1.2	27	-0.295	0.936	-0.175	0.348	0.121	0.192	0.413	-0.003	-0.020	0.048	-0.052	0.075	-0.033	0.017	0.067	0.002
1.3	30	-0.002	0.159	0.048	0.127	0.050	0.037	0.217	-0.006	0.003	0.026	0.008	0.020	0.005	0.006	0.467	0.004
1.8	20	-0.239	0.501	-0.408	0.585	-0.169	0.172	0.429	-0.002	-0.028	0.038	-0.048	0.084	-0.021	0.021	0.381	0.003
1.9	51	-0.333	0.647	-0.212	0.465	0.121	0.112	0.192	-0.010	-0.015	0.024	-0.016	0.030	-0.001	0.005	0.847	0.008
2.1	26	0.741	0.760	0.107	1.039	-0.634	0.252	0.015	0.002	0.010	0.010	0.001	0.013	-0.008	0.003	0.009	0.002
2.2	35	1.060	0.916	0.330	1.288	-0.730	0.267	0.018	0.002	0.015	0.015	0.004	0.021	-0.011	0.004	0.026	0.002
2.3	11	0.395	0.473	0.154	0.431	-0.241	0.193	0.108	0.007	0.005	0.006	0.002	0.005	-0.003	0.002	0.085	0.002
3.1.a	48	-0.003	0.005	-0.001	0.004	0.002	0.001	0.005	0.002	-0.003	0.005	-0.001	0.004	0.002	0.001	0.007	0.002
3.1.b	42	-0.006	0.006	-0.003	0.009	0.003	0.002	0.086	0.006	-0.005	0.005	-0.003	0.008	0.002	0.001	0.082	0.002
3.2	35	0.185	0.224	0.131	0.254	-0.053	0.057	0.338	-0.003	0.006	0.008	0.007	0.018	0.000	0.003	0.884	0.013
3.3	41	0.203	0.740	0.611	0.660	0.408	0.155	0.006	0.002	0.029	0.066	0.035	0.044	0.006	0.012	0.671	0.005
4.1	53	-1.645	1.785	-1.526	1.807	0.120	0.349	0.608	-0.002	-0.038	0.020	-0.046	0.017	-0.009	0.004	0.027	0.002
4.2	53	-1.123	1.033	-0.977	0.892	0.146	0.187	0.242	-0.004	-0.036	0.019	-0.044	0.016	-0.008	0.003	0.017	0.002
4.3	53	0.748	1.565	0.383	0.855	-0.365	0.245	0.180	-0.017	0.016	0.063	0.005	0.011	-0.011	0.009	0.246	0.003
5.1	53	-4.787	7.754	-3.247	5.516	1.540	1.307	0.039	0.003	-0.036	0.024	-0.028	0.029	0.008	0.005	0.131	0.003
5.2	33	0.522	0.753	0.643	0.835	0.120	0.196	0.431	-0.002	0.009	0.015	0.009	0.014	0.001	0.004	0.778	0.006
6.1	34	0.132	0.322	-0.035	0.124	-0.167	0.059	0.011	0.002	0.031	0.050	-0.005	0.018	-0.036	0.009	0.000*	0.001
6.9.a	53	2.487	14.773	-3.713	14.153	-6.199	2.810	0.111	0.010	-0.005	0.043	-0.027	0.032	-0.022	0.007	0.008	0.002
6.9.b	53	-0.955	10.321	-4.569	12.409	-3.614	2.217	0.207	-0.007	-0.017	0.040	-0.030	0.033	-0.012	0.007	0.113	0.003
6.9.c	53	-0.239	1.183	-0.579	1.588	-0.340	0.272	0.285	-0.003	-0.017	0.036	-0.037	0.037	-0.020	0.007	0.006	0.001
6.10	40	0.960	1.882	0.199	1.504	-0.761	0.381	0.072	0.004	0.016	0.033	0.002	0.020	-0.014	0.006	0.031	0.002
7.1	53	-0.064	0.199	-0.031	0.206	0.033	0.039	0.020	0.002	-0.001	0.007	-0.001	0.008	0.000	0.001	0.837	0.007
7.2.a	51	4650.4	24113.4	16260.2	79328.0	11609.7	11610.0	0.154	0.050	0.030	0.056	0.030	0.031	0.000	0.009	0.956	0.050
7.2.b	51	0.017	0.144	0.091	0.293	0.074	0.046	0.031	0.003	0.018	0.052	0.020	0.028	0.002	0.008	0.847	0.010
7.2.c	49	-0.007	0.014	-0.004	0.010	0.003	0.003	0.170	-0.050	-0.005	0.051	-0.013	0.025	-0.008	0.008	0.279	0.003
7.3	45	-316.25	1567.03	-202.23	643.69	114.02	252.54	0.661	-0.002	-0.010	0.059	-0.022	0.033	-0.012	0.010	0.314	0.003
7.5	22	0.000	1.574	0.092	0.943	0.092	0.391	0.848	-0.001	0.011	0.120	0.003	0.040	-0.009	0.027	0.764	0.006
7.6	53	0.262	0.395	0.366	0.507	0.104	0.088	0.229	-0.005	0.035	0.038	0.034	0.041	-0.001	0.008	0.898	0.017
7.8	49	0.477	0.556	0.413	0.621	-0.063	0.119	0.079	0.005	0.007	0.010	0.005	0.009	-0.002	0.002	0.003	0.001
7.9	48	0.489	0.401	0.394	0.325	-0.095	0.075	0.000*	0.002	0.011	0.011	0.007	0.007	-0.003	0.002	0.000	0.001
7.10	9	-0.750	0.695	-0.640	0.418	0.110	0.270	0.566	-0.002	-0.019	0.016	-0.020	0.014	-0.002	0.007	0.603	0.004
8.4	3	-0.071	0.685	0.122	0.804	0.193	0.610	0.833	-0.001	0.043	0.113	-0.021	0.070	-0.064	0.077	0.605	0.004
8.5	6	-0.230	0.225	0.065	0.093	0.295	0.099	0.060	0.003	-0.078	0.062	0.034	0.047	0.112	0.032	0.046	0.002
8.8	3	-0.164	0.199	-0.099	0.066	0.064	0.121	0.668	-0.002	-0.044	0.036	-0.047	0.013	-0.003	0.022	0.935	0.025
8.12	35	-0.286	0.861	-0.635	0.917	-0.348	0.213	0.137	0.017	-0.006	0.070	-0.065	0.074	-0.060	0.017	0.000*	0.001
8.14	53	0.678	0.571	-0.114	0.593	-0.792	0.113	0.000*	0.001	0.055	0.038	-0.004	0.032	-0.059	0.007	0.000*	0.001
8.15	53	2.029	1.821	7.565	2.998	5.536	0.482	0.000*	0.001	0.219	0.081	0.162	0.080	-0.057	0.016	0.011	0.002
8.16	53	0.809	0.927	3.070	1.420	2.262	0.233	0.000*	0.001	0.155	0.074	0.147	0.046	-0.008	0.012	0.608	0.005

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Second to least corrupt		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	4	-0.258	0.350	-0.487	0.901	-0.229	0.483	0.484	0.003	-0.027	0.026	-0.037	0.059	-0.010	0.032	0.763	0.007
1.2	4	-0.096	0.127	-0.171	0.395	-0.075	0.207	0.624	0.005	-0.020	0.019	-0.018	0.080	0.002	0.041	0.958	0.050
1.3	11	-0.041	0.088	0.004	0.103	0.044	0.041	0.317	0.002	-0.006	0.013	0.001	0.015	0.007	0.006	0.271	0.003
1.8	2	0.164	0.263	-0.261	0.354	-0.424	0.312	0.509	0.004	0.056	0.125	-0.138	0.170	-0.194	0.149	0.522	0.004
1.9	18	-0.177	0.720	-0.069	0.226	0.107	0.178	0.584	0.004	-0.016	0.044	-0.004	0.013	0.011	0.011	0.309	0.003
2.1	14	0.717	1.260	0.159	0.515	-0.558	0.364	0.160	0.002	0.009	0.017	0.002	0.006	-0.007	0.005	0.170	0.002
2.2	10	1.593	1.161	0.099	0.688	-1.494	0.427	0.015	0.001	0.019	0.014	0.001	0.008	-0.018	0.005	0.013	0.001
2.3	5	0.132	0.159	0.092	0.099	-0.040	0.084	0.447	0.003	0.001	0.002	0.001	0.001	0.000	0.001	0.429	0.003
3.1.a	18	0.000	0.002	0.000	0.003	0.000	0.001	0.715	0.006	0.000	0.002	0.000	0.003	0.000	0.001	0.705	0.005
3.1.b	19	-0.003	0.007	-0.001	0.006	0.001	0.002	0.677	0.005	-0.002	0.006	-0.001	0.005	0.001	0.002	0.714	0.006
3.2	16	0.339	0.318	0.215	0.191	-0.124	0.093	0.177	0.002	0.010	0.011	0.005	0.005	-0.005	0.003	0.148	0.002
3.3	13	0.525	0.333	0.571	0.655	0.046	0.204	0.849	0.025	0.052	0.033	0.040	0.068	-0.012	0.021	0.639	0.004
4.1	20	-0.427	0.782	-0.385	0.744	0.042	0.241	0.899	0.050	-0.044	0.025	-0.035	0.021	0.009	0.007	0.223	0.003
4.2	20	-0.414	0.438	-0.250	0.312	0.164	0.120	0.284	0.002	-0.046	0.022	-0.034	0.021	0.012	0.007	0.068	0.001
4.3	20	1.235	1.959	0.130	0.428	-1.105	0.448	0.025	0.001	0.031	0.091	0.001	0.005	-0.029	0.020	0.169	0.002
5.1	20	-0.227	1.810	-1.187	3.759	-0.961	0.933	0.441	0.003	-0.026	0.022	-0.027	0.021	-0.001	0.007	0.885	0.025
5.2	5	0.242	0.299	0.121	0.184	-0.121	0.157	0.090	0.002	0.003	0.003	0.001	0.002	-0.001	0.002	0.099	0.002
6.1	8	0.235	0.600	-0.053	0.172	-0.288	0.221	0.326	0.003	0.031	0.042	0.001	0.011	-0.030	0.015	0.118	0.002
6.9.a	20	0.628	4.876	-2.528	8.929	-3.155	2.275	0.317	0.003	-0.016	0.036	-0.035	0.036	-0.018	0.011	0.139	0.002
6.9.b	20	-2.022	6.213	-1.870	5.383	0.152	1.838	0.773	0.008	-0.021	0.033	-0.038	0.039	-0.016	0.011	0.168	0.002
6.9.c	20	-0.418	1.483	-0.139	0.404	0.280	0.344	0.272	0.002	-0.033	0.040	-0.018	0.023	0.015	0.010	0.213	0.002
6.10	11	0.351	1.650	-0.534	2.131	-0.885	0.813	0.192	0.002	0.006	0.023	-0.009	0.033	-0.016	0.012	0.127	0.002
7.1	20	0.113	0.194	0.039	0.139	-0.074	0.053	0.020	0.001	0.008	0.011	0.007	0.020	-0.001	0.005	0.847	0.010
7.2.a	20	5631.0	14502.8	-1997.1	11517.3	-7628.1	4141.1	0.195	0.002	0.032	0.029	0.021	0.040	-0.011	0.011	0.165	0.002
7.2.b	20	0.215	0.527	-0.158	0.519	-0.373	0.165	0.075	0.001	0.018	0.021	-0.005	0.031	-0.023	0.008	0.006	0.001
7.2.c	19	-0.005	0.014	-0.003	0.007	0.001	0.004	0.611	0.004	-0.006	0.025	-0.013	0.023	-0.007	0.008	0.227	0.003
7.3	12	-2170.71	5320.46	-148.89	336.643	2021.82	1538.96	0.188	0.002	-0.037	0.084	-0.023	0.041	0.014	0.027	0.361	0.003
7.5	11	7.645	24.480	7.038	19.135	-0.607	9.368	0.811	0.013	0.045	0.136	0.015	0.033	-0.030	0.042	0.462	0.004
7.6	20	0.225	0.294	0.418	0.741	0.193	0.178	0.296	0.002	0.044	0.046	0.038	0.040	-0.006	0.014	0.697	0.005
7.8	10	0.223	0.190	0.176	0.169	-0.047	0.080	0.183	0.002	0.002	0.002	0.002	0.002	-0.001	0.001	0.118	0.002
7.9	13	0.284	0.404	0.179	0.223	-0.105	0.128	0.080	0.001	0.004	0.007	0.002	0.003	-0.002	0.002	0.130	0.002
7.10	5	-0.910	0.877	-0.999	0.638	-0.089	0.485	0.765	0.007	-0.020	0.023	-0.032	0.026	-0.012	0.016	0.013	0.001
8.1a	7	-0.003	0.011	-0.002	0.004	0.001	0.004	0.824	0.017	-0.002	0.008	-0.002	0.003	0.001	0.003	0.868	0.013
8.1b	7	0.001	0.005	0.000	0.005	-0.001	0.003	0.709	0.006	0.001	0.005	0.000	0.004	-0.001	0.002	0.715	0.006
8.3	4	0.390	1.466	-0.487	6.045	-0.877	3.110	0.810	0.010	-0.014	0.054	0.003	0.159	0.017	0.084	0.876	0.017
8.8	4	-0.032	0.019	-0.012	0.005	0.020	0.010	0.099	0.002	-0.045	0.033	-0.026	0.020	0.019	0.019	0.192	0.002
8.12	2	-0.346	0.152	-0.135	0.318	0.211	0.249	0.323	0.003	-0.061	0.009	-0.033	0.095	0.028	0.067	0.766	0.008
8.14	20	0.796	0.388	-0.435	0.621	-1.231	0.164	0.000*	0.001	0.034	0.021	-0.013	0.018	-0.047	0.006	0.000*	0.001
8.15	20	5.001	1.989	6.636	4.307	1.635	1.061	0.233	0.002	0.286	0.041	0.074	0.057	-0.212	0.016	0.000*	0.001
8.16	20	2.249	1.044	4.076	1.311	1.826	0.375	0.000*	0.001	0.249	0.044	0.091	0.039	-0.158	0.013	0.000*	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Least corrupt		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.3	8	0.033	0.123	-0.034	0.062	-0.067	0.049	0.285	0.005	0.004	0.015	-0.004	0.006	-0.008	0.006	0.279	0.004
2.1	12	0.176	0.376	-0.009	0.118	-0.185	0.114	0.165	0.004	0.002	0.004	0.000	0.001	-0.002	0.001	0.170	0.003
2.2	4	0.360	0.093	-0.069	0.157	-0.430	0.092	0.002	0.002	0.004	0.001	-0.001	0.002	-0.004	0.001	0.002	0.002
3.1.a	15	0.000	0.002	0.000	0.001	0.001	0.001	0.433	0.006	0.000	0.002	0.000	0.001	0.000	0.001	0.442	0.007
3.1.b	15	0.001	0.004	-0.001	0.003	-0.003	0.001	0.136	0.004	0.001	0.004	-0.001	0.003	-0.002	0.001	0.128	0.003
3.2	16	0.209	0.185	0.119	0.150	-0.090	0.060	0.023	0.002	0.005	0.004	0.003	0.003	-0.002	0.001	0.017	0.002
3.3	15	0.815	0.469	0.405	0.461	-0.410	0.170	0.052	0.003	0.043	0.029	0.016	0.019	-0.027	0.009	0.007	0.002
4.1	16	-0.274	0.065	-0.128	0.049	0.146	0.020	0.000*	0.002	-0.042	0.012	-0.032	0.016	0.011	0.005	0.027	0.002
4.2	16	-0.226	0.057	-0.103	0.040	0.123	0.017	0.000*	0.002	-0.043	0.013	-0.032	0.016	0.011	0.005	0.018	0.002
4.3	16	0.269	0.683	0.300	0.548	0.031	0.219	0.912	0.025	0.003	0.008	0.003	0.006	0.000	0.003	0.999	0.050
5.1	16	-0.063	0.191	-0.198	0.146	-0.135	0.060	0.101	0.003	-0.010	0.020	-0.026	0.012	-0.016	0.006	0.032	0.003
6.1	5	0.005	0.004	0.002	0.009	-0.003	0.004	0.444	0.008	0.004	0.003	0.002	0.007	-0.003	0.004	0.375	0.006
6.9.a	17	-0.514	0.679	-0.230	0.580	0.284	0.217	0.080	0.003	-0.024	0.022	-0.015	0.021	0.009	0.007	0.162	0.003
6.9.b	17	-0.676	0.941	-0.291	0.689	0.385	0.283	0.066	0.003	-0.025	0.022	-0.016	0.022	0.008	0.008	0.180	0.004
6.9.c	17	-0.053	0.064	-0.022	0.023	0.031	0.016	0.022	0.002	-0.021	0.018	-0.013	0.011	0.009	0.005	0.093	0.003
6.10	5	0.017	1.667	-0.711	0.848	-0.728	0.836	0.544	0.013	-0.001	0.020	-0.008	0.009	-0.007	0.010	0.600	0.010
7.1	16	0.062	0.068	0.043	0.092	-0.019	0.029	0.531	0.010	0.003	0.003	0.002	0.004	-0.001	0.001	0.375	0.006
7.2.a	17	627.6	3504.9	-2159.2	4250.0	-2786.8	1336.1	0.020	0.002	0.008	0.015	-0.013	0.016	-0.021	0.005	0.000*	0.002
7.2.b	17	-0.013	0.203	-0.192	0.135	-0.179	0.059	0.005	0.002	0.000	0.018	-0.022	0.017	-0.022	0.006	0.000*	0.002
7.2.c	17	-0.005	0.006	-0.007	0.003	-0.002	0.002	0.253	0.005	-0.019	0.021	-0.036	0.022	-0.017	0.007	0.001*	0.002
7.3	7	-306.33	248.20	-15.01	28.62	291.32	94.43	0.014	0.002	-0.052	0.032	-0.004	0.008	0.048	0.012	0.003	0.002
7.5	9	-0.147	0.366	-0.300	0.531	-0.154	0.215	0.435	0.007	-0.007	0.022	-0.020	0.027	-0.013	0.012	0.336	0.005
7.6	17	0.431	0.512	0.437	0.537	0.006	0.180	0.977	0.050	0.038	0.051	0.031	0.039	-0.007	0.016	0.731	0.013
7.9	8	0.010	0.027	0.000	0.000	-0.010	0.010	0.351	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.351	0.005
7.10	6	-1.153	1.007	-0.762	0.768	0.391	0.517	0.038	0.002	-0.022	0.016	-0.021	0.018	0.000	0.010	0.923	0.025
8.1.a	15	-0.001	0.018	0.008	0.014	0.009	0.006	0.127	0.004	0.000	0.012	0.005	0.008	0.005	0.004	0.180	0.004
8.1.b	15	0.000	0.007	0.000	0.009	0.000	0.003	0.865	0.017	0.000	0.006	0.000	0.007	0.000	0.002	0.868	0.017
8.3	14	2.383	2.039	1.004	1.548	-1.380	0.684	0.123	0.003	0.041	0.040	0.013	0.020	-0.028	0.012	0.064	0.003
8.8	6	-0.086	0.076	-0.043	0.035	0.043	0.034	0.114	0.003	-0.052	0.013	-0.045	0.029	0.007	0.013	0.597	0.008
8.14	17	0.594	0.577	-1.256	1.053	-1.851	0.291	0.000*	0.002	0.011	0.011	-0.029	0.032	-0.040	0.008	0.000*	0.002
8.15	17	6.440	1.296	4.277	2.430	-2.163	0.668	0.004	0.002	0.263	0.043	0.039	0.016	-0.224	0.011	0.000*	0.002
8.16	17	4.853	0.857	2.330	0.679	-2.524	0.265	0.000*	0.002	0.306	0.015	0.032	0.012	-0.275	0.005	0.000*	0.002

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Low income		Absolute rate of change								Absolute rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	20	-1.393	1.489	-1.150	1.590	0.243	0.487	0.585	0.008	-0.030	0.034	-0.055	0.080	-0.026	0.020	0.180	0.005
1.2	20	-1.123	1.354	-0.365	0.979	0.758	0.374	0.055	0.002	-0.054	0.050	-0.048	0.070	0.006	0.019	0.739	0.017
1.3	21	0.122	0.205	-0.022	0.167	-0.144	0.058	0.053	0.002	0.023	0.036	-0.005	0.026	-0.028	0.010	0.028	0.002
1.8	30	-0.181	0.699	-0.616	0.544	-0.434	0.162	0.021	0.002	-0.007	0.026	-0.033	0.034	-0.026	0.008	0.003	0.002
1.9	52	-0.396	0.968	-0.684	0.590	-0.287	0.157	0.040	0.002	-0.011	0.035	-0.036	0.030	-0.024	0.006	0.000*	0.002
2.1	22	1.312	1.071	1.402	1.655	0.090	0.420	0.809	0.017	0.026	0.025	0.021	0.028	-0.005	0.008	0.380	0.007
2.2	29	1.566	1.569	-0.136	1.362	-1.702	0.386	0.001*	0.001	0.032	0.033	-0.002	0.024	-0.034	0.008	0.001*	0.002
2.3	13	1.112	0.911	0.483	1.272	-0.629	0.434	0.028	0.002	0.024	0.029	0.009	0.022	-0.016	0.010	0.047	0.003
3.1.a	51	-0.007	0.008	-0.007	0.009	0.001	0.002	0.638	0.010	-0.006	0.007	-0.006	0.008	0.000	0.001	0.807	0.025
3.1.b	33	-0.009	0.011	-0.012	0.011	-0.003	0.003	0.292	0.003	-0.007	0.008	-0.010	0.008	-0.003	0.002	0.159	0.004
3.2	12	0.246	0.222	0.351	0.515	0.104	0.162	0.540	0.006	0.013	0.014	0.017	0.031	0.004	0.010	0.703	0.013
3.3	34	0.131	0.554	0.752	0.838	0.621	0.172	0.002	0.001	0.008	0.052	0.048	0.051	0.040	0.012	0.011	0.002
4.1	61	-3.048	2.500	-3.701	1.974	-0.653	0.408	0.032	0.002	-0.024	0.018	-0.042	0.018	-0.018	0.003	0.000*	0.001
4.2	61	-1.758	1.376	-2.045	0.960	-0.287	0.215	0.069	0.002	-0.021	0.015	-0.035	0.016	-0.014	0.003	0.000*	0.001
4.3	58	0.673	1.586	0.997	1.188	0.324	0.260	0.209	0.003	0.020	0.061	0.015	0.022	-0.005	0.009	0.541	0.010
5.1	61	-16.115	16.417	-16.276	12.877	-0.161	2.671	0.939	0.025	-0.024	0.023	-0.035	0.020	-0.011	0.004	0.000*	0.002
5.2	31	0.603	1.252	1.378	1.217	0.775	0.314	0.029	0.002	0.020	0.033	0.032	0.032	0.011	0.008	0.179	0.005
6.1	54	0.129	0.284	-0.080	0.155	-0.209	0.044	0.000*	0.001	0.036	0.041	-0.016	0.023	-0.052	0.006	0.000*	0.001
6.9.a	60	1.335	13.585	-5.948	9.403	-7.283	2.133	0.003	0.002	0.005	0.039	-0.024	0.028	-0.030	0.006	0.000*	0.002
6.9.b	60	-8.142	19.105	-10.162	13.810	-2.019	3.043	0.386	0.004	-0.011	0.038	-0.032	0.033	-0.021	0.006	0.001*	0.002
6.9.c	60	-1.725	2.960	-1.715	2.163	0.011	0.473	0.975	0.050	-0.022	0.044	-0.046	0.047	-0.023	0.008	0.007	0.002
6.10	50	1.187	2.079	0.887	0.948	-0.301	0.323	0.390	0.005	0.022	0.040	0.012	0.013	-0.010	0.006	0.117	0.003
7.1	60	-0.210	0.300	-0.184	0.291	0.025	0.054	0.025	0.002	-0.007	0.010	-0.007	0.013	0.000	0.002	0.942	0.050
7.2.a	57	820.7	6338.8	2250.7	13171.9	1430.0	1936.2	0.146	0.003	0.033	0.074	0.050	0.049	0.018	0.012	0.176	0.004
7.2.b	57	-0.009	0.149	0.014	0.070	0.023	0.022	0.334	0.004	0.009	0.073	0.027	0.048	0.018	0.012	0.164	0.004
7.2.c	51	-0.004	0.017	-0.003	0.017	0.001	0.003	0.716	0.013	0.001	0.040	-0.006	0.036	-0.008	0.008	0.329	0.006
7.3	61	27.07	138.54	-37.84	169.53	-64.91	28.03	0.105	0.003	0.004	0.018	-0.006	0.020	-0.011	0.003	0.028	0.003
7.5	10	0.449	0.662	-0.158	0.996	-0.607	0.378	0.020	0.002	0.023	0.025	0.001	0.021	-0.022	0.010	0.009	0.002
7.6	61	0.219	0.482	0.180	0.323	-0.040	0.074	0.553	0.006	0.029	0.055	0.017	0.024	-0.012	0.008	0.111	0.003
7.8	58	0.725	0.606	0.766	0.616	0.041	0.113	0.146	0.003	0.015	0.016	0.012	0.010	-0.003	0.003	0.001*	0.002
7.9	59	0.514	0.541	0.599	0.584	0.085	0.104	0.003	0.002	0.025	0.030	0.019	0.015	-0.007	0.004	0.010	0.002
7.10	13	-0.575	0.521	-0.751	0.515	-0.176	0.203	0.360	0.004	-0.011	0.012	-0.017	0.014	-0.006	0.005	0.066	0.003
8.4	20	0.087	0.585	-0.415	0.683	-0.502	0.201	0.062	0.002	0.023	0.075	-0.038	0.062	-0.061	0.022	0.033	0.003
8.5	4	-0.800	0.583	-0.182	1.410	0.618	0.763	0.270	0.003	-0.039	0.019	-0.011	0.069	0.028	0.036	0.483	0.008
8.12	47	-0.663	1.298	-0.458	1.101	0.205	0.248	0.453	0.005	-0.035	0.081	-0.058	0.083	-0.023	0.017	0.252	0.006
8.14	60	0.077	0.123	0.062	0.236	-0.015	0.034	0.569	0.007	0.027	0.030	0.008	0.037	-0.019	0.006	0.004	0.002
8.15	61	0.245	0.250	6.487	2.680	6.242	0.345	0.000*	0.001	0.091	0.054	0.276	0.052	0.185	0.010	0.000*	0.001
8.16	60	0.100	0.146	1.140	1.033	1.040	0.135	0.000*	0.001	0.049	0.043	0.154	0.065	0.106	0.010	0.000*	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Lower-middle income		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	29	-0.565	1.400	-0.641	0.634	-0.076	0.285	0.787	0.017	-0.025	0.093	-0.106	0.174	-0.081	0.037	0.057	0.002
1.2	27	-0.315	1.107	-0.240	0.268	0.074	0.219	0.747	0.013	-0.019	0.079	-0.068	0.065	-0.049	0.020	0.040	0.002
1.3	29	-0.008	0.183	0.034	0.212	0.041	0.052	0.540	0.007	-0.002	0.028	0.009	0.027	0.011	0.007	0.223	0.004
1.8	22	-0.382	0.401	-0.360	0.563	0.023	0.147	0.896	0.050	-0.033	0.033	-0.046	0.080	-0.013	0.019	0.538	0.005
1.9	49	-0.370	0.752	-0.240	0.564	0.130	0.134	0.243	0.004	-0.018	0.033	-0.019	0.033	-0.001	0.007	0.880	0.025
2.1	28	0.503	0.777	-0.079	1.277	-0.582	0.282	0.061	0.002	0.006	0.010	0.000	0.019	-0.006	0.004	0.161	0.003
2.2	32	0.891	1.014	0.598	1.055	-0.293	0.259	0.282	0.004	0.013	0.015	0.008	0.014	-0.005	0.004	0.189	0.003
2.3	10	0.233	0.320	0.204	0.507	-0.029	0.190	0.868	0.025	0.003	0.004	0.002	0.006	-0.001	0.002	0.784	0.013
3.1.a	46	-0.002	0.004	0.000	0.004	0.002	0.001	0.006	0.002	-0.002	0.004	0.000	0.004	0.002	0.001	0.006	0.002
3.1.b	39	-0.004	0.007	-0.002	0.009	0.002	0.002	0.240	0.003	-0.003	0.006	-0.001	0.008	0.002	0.002	0.232	0.004
3.2	29	0.259	0.491	0.076	0.292	-0.183	0.106	0.122	0.002	0.009	0.018	0.003	0.011	-0.006	0.004	0.151	0.003
3.3	42	0.137	0.824	0.622	0.758	0.486	0.173	0.007	0.002	0.029	0.075	0.036	0.049	0.007	0.014	0.631	0.006
4.1	53	-1.418	1.421	-1.203	0.897	0.214	0.231	0.390	0.006	-0.035	0.023	-0.043	0.022	-0.008	0.004	0.027	0.002
4.2	53	-1.056	0.867	-0.900	0.543	0.156	0.141	0.247	0.004	-0.033	0.020	-0.041	0.022	-0.009	0.004	0.007	0.002
4.3	53	0.732	1.330	0.321	1.138	-0.411	0.240	0.126	0.003	0.010	0.024	0.004	0.014	-0.007	0.004	0.093	0.003
5.1	52	-4.095	6.840	-2.588	3.756	1.507	1.082	0.132	0.003	-0.033	0.030	-0.030	0.030	0.003	0.006	0.630	0.006
5.2	31	0.640	1.077	0.846	0.920	0.206	0.254	0.389	0.005	0.011	0.018	0.011	0.013	0.000	0.004	0.881	0.050
6.1	36	0.149	0.423	-0.006	0.066	-0.155	0.071	0.035	0.002	0.030	0.052	0.000	0.019	-0.031	0.009	0.004	0.002
6.9.a	53	3.651	17.039	-3.438	16.119	-7.089	3.222	0.078	0.002	0.001	0.048	-0.026	0.040	-0.027	0.009	0.004	0.002
6.9.b	53	0.300	12.488	-6.068	20.540	-6.368	3.302	0.108	0.002	-0.010	0.046	-0.029	0.049	-0.020	0.009	0.051	0.002
6.9.c	53	-0.017	1.051	-0.415	2.005	-0.399	0.311	0.314	0.005	-0.011	0.046	-0.028	0.048	-0.017	0.009	0.084	0.002
6.10	41	1.425	2.443	0.043	1.349	-1.382	0.436	0.006	0.002	0.025	0.047	0.000	0.021	-0.026	0.008	0.004	0.002
7.1	53	-0.054	0.376	-0.038	0.252	0.015	0.062	0.655	0.008	0.000	0.009	0.000	0.008	0.000	0.002	0.699	0.007
7.2.a	52	2801.8	23529.8	14028.8	77767.1	11227.0	11267.18	0.157	0.003	0.028	0.062	0.030	0.030	0.002	0.010	0.831	0.017
7.2.b	51	-0.017	0.147	0.067	0.146	0.084	0.029	0.009	0.002	0.017	0.057	0.020	0.030	0.003	0.009	0.705	0.008
7.2.c	50	-0.006	0.021	-0.008	0.016	-0.002	0.004	0.661	0.010	0.000	0.055	-0.017	0.031	-0.017	0.009	0.058	0.002
7.3	53	-283.42	1421.52	-139.38	571.68	144.05	210.46	0.499	0.006	-0.013	0.048	-0.015	0.026	-0.003	0.008	0.743	0.010
7.5	17	-0.559	1.831	0.277	1.178	0.836	0.528	0.218	0.003	-0.028	0.077	0.011	0.046	0.040	0.022	0.154	0.003
7.6	53	0.141	0.281	0.259	0.417	0.118	0.069	0.072	0.002	0.024	0.047	0.035	0.045	0.011	0.009	0.202	0.003
7.8	52	0.476	0.460	0.414	0.423	-0.062	0.087	0.002	0.001	0.006	0.007	0.005	0.005	-0.002	0.001	0.000*	0.001
7.9	52	0.576	0.542	0.474	0.492	-0.102	0.102	0.001*	0.001	0.010	0.011	0.007	0.008	-0.003	0.002	0.000*	0.001
7.10	10	-0.810	0.732	-0.352	0.983	0.458	0.388	0.077	0.002	-0.018	0.015	-0.009	0.031	0.008	0.011	0.283	0.004
8.4	8	0.180	0.330	-0.303	0.359	-0.483	0.172	0.055	0.002	0.052	0.092	-0.069	0.063	-0.121	0.039	0.042	0.002
8.5	13	-0.709	1.371	0.089	0.578	0.797	0.413	0.069	0.002	-0.060	0.064	-0.003	0.046	0.057	0.022	0.016	0.002
8.12	39	-0.231	0.704	-0.459	0.881	-0.228	0.180	0.222	0.003	-0.003	0.070	-0.049	0.072	-0.045	0.016	0.003	0.001
8.14	53	0.541	0.356	0.080	0.523	-0.461	0.087	0.000*	0.001	0.062	0.035	0.005	0.035	-0.057	0.007	0.000*	0.001
8.15	53	1.330	1.021	7.922	3.092	6.592	0.447	0.000*	0.001	0.197	0.074	0.182	0.070	-0.014	0.014	0.464	0.005
8.16	53	0.434	0.304	3.013	1.286	2.579	0.181	0.000*	0.001	0.134	0.047	0.169	0.045	0.035	0.009	0.003	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Upper-middle income		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	13	-0.030	0.554	-0.644	1.194	-0.613	0.365	0.183	0.002	-0.003	0.067	-0.064	0.106	-0.060	0.035	0.195	0.002
1.2	12	-0.028	0.326	-0.292	0.572	-0.264	0.190	0.265	0.003	0.000	0.054	-0.047	0.102	-0.046	0.033	0.264	0.002
1.3	13	-0.076	0.108	0.072	0.103	0.148	0.041	0.003	0.001	-0.010	0.020	0.016	0.021	0.026	0.008	0.014	0.002
1.8	2	-0.092	0.099	-0.147	0.193	-0.055	0.153	0.564	0.006	-0.030	0.002	-0.048	0.041	-0.017	0.029	0.678	0.007
1.9	26	-0.086	0.279	-0.170	0.343	-0.084	0.087	0.383	0.004	-0.012	0.024	-0.015	0.027	-0.003	0.007	0.683	0.008
2.1	15	0.268	0.539	0.069	0.710	-0.199	0.230	0.359	0.003	0.003	0.006	0.001	0.008	-0.002	0.003	0.322	0.003
2.2	16	1.357	1.066	0.227	0.523	-1.130	0.297	0.003	0.001	0.017	0.014	0.003	0.006	-0.014	0.004	0.002	0.001
2.3	11	0.228	0.283	0.126	0.113	-0.101	0.092	0.159	0.002	0.002	0.003	0.001	0.001	-0.001	0.001	0.156	0.002
3.1.a	30	0.000	0.002	0.000	0.003	0.001	0.001	0.404	0.004	0.000	0.002	0.000	0.003	0.001	0.001	0.423	0.003
3.1.b	28	-0.002	0.007	-0.001	0.006	0.002	0.002	0.218	0.002	-0.002	0.006	-0.001	0.005	0.001	0.002	0.274	0.003
3.2	22	0.126	0.318	0.193	0.396	0.067	0.108	0.618	0.008	0.003	0.007	0.005	0.009	0.001	0.003	0.644	0.005
3.3	22	0.510	0.623	0.287	0.599	-0.223	0.184	0.276	0.003	0.055	0.060	0.014	0.036	-0.042	0.015	0.020	0.002
4.1	34	-0.666	0.725	-0.560	0.663	0.105	0.168	0.611	0.007	-0.036	0.023	-0.034	0.020	0.001	0.005	0.772	0.017
4.2	34	-0.565	0.456	-0.408	0.322	0.157	0.096	0.131	0.002	-0.035	0.022	-0.033	0.020	0.002	0.005	0.660	0.006
4.3	34	1.007	2.222	0.109	0.622	-0.898	0.396	0.039	0.002	0.031	0.104	0.002	0.009	-0.029	0.018	0.117	0.002
5.1	29	-0.873	1.882	-1.440	3.396	-0.567	0.721	0.537	0.005	-0.030	0.030	-0.027	0.024	0.003	0.007	0.711	0.013
5.2	14	0.140	0.252	0.087	0.304	-0.053	0.105	0.621	0.010	0.002	0.003	0.001	0.003	-0.001	0.001	0.570	0.004
6.1	15	0.175	0.439	-0.041	0.133	-0.217	0.118	0.162	0.002	0.038	0.040	-0.001	0.013	-0.039	0.011	0.008	0.001
6.9.a	35	0.961	6.061	-2.104	7.275	-3.066	1.601	0.165	0.002	-0.013	0.047	-0.021	0.053	-0.009	0.012	0.545	0.004
6.9.b	35	-0.606	9.825	-2.698	9.016	-2.092	2.254	0.464	0.005	-0.025	0.048	-0.020	0.045	0.005	0.011	0.697	0.010
6.9.c	35	-0.091	1.708	-0.399	1.689	-0.308	0.406	0.555	0.006	-0.022	0.055	-0.019	0.043	0.003	0.012	0.844	0.025
6.10	21	0.452	2.286	-0.389	1.786	-0.842	0.633	0.253	0.003	0.011	0.055	-0.005	0.027	-0.016	0.013	0.288	0.003
7.1	35	-0.015	0.228	-0.021	0.178	-0.006	0.049	0.868	0.050	0.000	0.008	0.000	0.005	0.000	0.002	0.577	0.005
7.2.a	34	815.4	2649.1	1621.5	4640.8	806.0	916.4	0.163	0.002	0.028	0.045	0.023	0.028	-0.005	0.009	0.571	0.004
7.2.b	31	0.050	0.198	0.130	0.403	0.080	0.081	0.166	0.002	0.014	0.041	0.015	0.026	0.001	0.009	0.924	0.050
7.2.c	31	-0.004	0.017	-0.002	0.013	0.001	0.004	0.725	0.017	-0.002	0.043	-0.009	0.028	-0.007	0.009	0.436	0.003
7.3	27	-56.57	272.08	-40.35	72.69	16.22	54.20	0.722	0.013	-0.004	0.024	-0.009	0.015	-0.005	0.005	0.218	0.002
7.5	12	0.297	0.941	-0.096	0.641	-0.393	0.329	0.265	0.003	0.075	0.188	0.003	0.046	-0.072	0.056	0.221	0.002
7.6	35	0.281	0.457	0.249	0.398	-0.032	0.102	0.750	0.025	0.033	0.044	0.023	0.036	-0.010	0.010	0.308	0.003
7.8	32	0.289	0.282	0.243	0.263	-0.046	0.068	0.143	0.002	0.003	0.003	0.003	0.003	-0.001	0.001	0.045	0.002
7.9	32	0.470	0.661	0.288	0.385	-0.182	0.135	0.004	0.002	0.007	0.010	0.003	0.004	-0.003	0.002	0.011	0.002
7.10	5	-0.492	0.579	-0.883	0.400	-0.391	0.315	0.217	0.002	-0.009	0.013	-0.027	0.018	-0.017	0.010	0.154	0.002
8.5	12	-0.179	0.537	0.043	0.147	0.222	0.161	0.241	0.003	-0.047	0.103	0.021	0.061	0.068	0.035	0.130	0.002
8.8	2	-0.050	0.038	-0.027	0.016	0.023	0.029	0.395	0.004	-0.046	0.006	-0.044	0.000	0.003	0.004	0.666	0.006
8.12	15	0.143	0.604	-0.786	1.246	-0.928	0.357	0.032	0.002	0.014	0.056	-0.080	0.133	-0.094	0.037	0.030	0.002
8.14	34	0.968	0.584	-0.338	0.602	-1.306	0.144	0.000*	0.001	0.051	0.025	-0.014	0.027	-0.066	0.006	0.000*	0.001
8.15	34	3.133	1.692	8.150	3.952	5.017	0.737	0.000*	0.001	0.270	0.055	0.114	0.066	-0.156	0.015	0.000*	0.001
8.16	34	1.462	0.883	3.651	1.237	2.189	0.261	0.000*	0.001	0.216	0.053	0.114	0.044	-0.102	0.012	0.000*	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

High income		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.3	16	0.005	0.122	-0.032	0.086	-0.037	0.037	0.385	0.004	0.001	0.015	-0.004	0.010	-0.005	0.005	0.279	0.003
1.9	38	-0.075	0.465	0.000	0.000	0.075	0.075	0.324	0.004	-0.005	0.028	0.000	0.000	0.005	0.005	0.324	0.004
2.1	24	0.425	0.987	-0.023	0.200	-0.448	0.206	0.045	0.002	0.005	0.014	0.000	0.002	-0.005	0.003	0.069	0.002
2.2	10	1.167	1.068	-0.199	0.288	-1.367	0.350	0.007	0.002	0.014	0.013	-0.002	0.003	-0.016	0.004	0.009	0.002
2.3	5	0.030	0.035	0.057	0.052	0.027	0.028	0.397	0.005	0.000	0.000	0.001	0.001	0.000	0.000	0.398	0.005
3.1.a	33	0.000	0.002	0.000	0.001	0.000	0.000	0.707	0.007	0.000	0.002	0.000	0.001	0.000	0.000	0.720	0.010
3.1.b	34	0.000	0.005	-0.001	0.004	-0.001	0.001	0.412	0.005	0.000	0.005	-0.001	0.004	-0.001	0.001	0.390	0.004
3.2	39	0.253	0.267	0.218	0.247	-0.035	0.058	0.546	0.006	0.007	0.008	0.005	0.006	-0.002	0.002	0.279	0.003
3.3	32	0.665	0.428	0.512	0.541	-0.152	0.122	0.308	0.003	0.049	0.032	0.030	0.047	-0.018	0.010	0.125	0.002
4.1	38	-0.350	0.167	-0.159	0.096	0.191	0.031	0.000*	0.001	-0.043	0.014	-0.032	0.015	0.011	0.003	0.000*	0.002
4.2	38	-0.297	0.144	-0.132	0.087	0.165	0.027	0.000*	0.001	-0.044	0.015	-0.032	0.016	0.012	0.004	0.000*	0.002
4.3	37	0.758	1.334	0.211	0.571	-0.547	0.239	0.061	0.002	0.016	0.057	0.002	0.007	-0.014	0.009	0.167	0.003
5.1	36	-0.130	0.426	-0.194	0.250	-0.064	0.082	0.287	0.003	-0.016	0.022	-0.022	0.014	-0.006	0.004	0.154	0.002
5.2	3	0.024	0.025	0.028	0.121	0.003	0.071	0.958	0.025	0.000	0.000	0.000	0.001	0.000	0.001	0.961	0.025
6.1	9	0.017	0.037	-0.002	0.010	-0.018	0.013	0.258	0.003	0.007	0.010	0.000	0.006	-0.007	0.004	0.143	0.002
6.9.a	49	-0.686	1.357	-0.298	0.693	0.388	0.218	0.099	0.002	-0.024	0.046	-0.018	0.057	0.006	0.010	0.643	0.008
6.9.b	49	-0.859	1.546	-0.503	0.891	0.356	0.255	0.141	0.002	-0.024	0.034	-0.025	0.050	0.000	0.009	0.971	0.050
6.9.c	46	-0.106	0.139	-0.028	0.060	0.078	0.022	0.001*	0.002	-0.032	0.034	-0.011	0.021	0.021	0.006	0.002	0.002
6.10	17	0.701	1.911	-1.093	2.602	-1.794	0.783	0.060	0.002	0.010	0.025	-0.019	0.046	-0.029	0.013	0.057	0.002
7.1	48	0.125	0.372	0.075	0.263	-0.050	0.066	0.062	0.002	0.006	0.012	0.004	0.014	-0.001	0.003	0.542	0.007
7.2.a	45	2909.9	10302.7	-1730.0	8231.0	-4639.9	1965.8	0.076	0.002	0.017	0.021	0.001	0.032	-0.016	0.006	0.001*	0.002
7.2.b	40	0.067	0.431	-0.165	0.401	-0.232	0.093	0.053	0.002	0.005	0.021	-0.016	0.024	-0.021	0.005	0.000*	0.002
7.2.c	37	-0.005	0.006	-0.005	0.006	0.000	0.001	0.935	0.013	-0.016	0.020	-0.028	0.037	-0.011	0.007	0.092	0.002
7.3	21	-1297.96	4086.91	-117.77	298.69	1180.19	894.22	0.176	0.003	-0.032	0.074	-0.017	0.037	0.015	0.018	0.301	0.003
7.5	18	4.465	19.210	4.222	15.119	-0.243	5.762	0.871	0.010	-0.001	0.024	-0.006	0.030	-0.005	0.009	0.487	0.006
7.6	51	0.232	0.358	0.568	1.393	0.336	0.201	0.110	0.002	0.028	0.039	0.037	0.066	0.009	0.011	0.464	0.006
7.8	9	0.165	0.134	0.167	0.132	0.002	0.063	0.966	0.050	0.002	0.001	0.002	0.001	0.000	0.001	0.922	0.017
7.9	23	0.032	0.096	0.043	0.094	0.012	0.028	0.321	0.004	0.000	0.001	0.000	0.001	0.000	0.000	0.353	0.004
7.10	13	-1.018	1.009	-0.789	0.686	0.229	0.338	0.188	0.003	-0.020	0.019	-0.024	0.021	-0.003	0.008	0.205	0.003
8.1.a	23	-0.001	0.015	0.005	0.012	0.006	0.004	0.116	0.002	-0.001	0.010	0.003	0.008	0.004	0.003	0.171	0.003
8.1.b	23	0.000	0.006	0.000	0.007	-0.001	0.002	0.784	0.008	0.000	0.005	0.000	0.006	0.000	0.002	0.784	0.013
8.3	18	1.940	2.070	0.672	2.947	-1.268	0.849	0.189	0.003	0.028	0.048	0.010	0.069	-0.018	0.020	0.450	0.005
8.8	10	-0.101	0.119	-0.038	0.036	0.063	0.039	0.062	0.002	-0.053	0.023	-0.037	0.026	0.016	0.011	0.099	0.002
8.14	51	0.833	0.610	-0.795	1.120	-1.628	0.179	0.000*	0.001	0.020	0.013	-0.020	0.026	-0.040	0.004	0.000*	0.001
8.15	51	5.502	1.545	5.198	3.926	-0.304	0.591	0.631	0.006	0.286	0.040	0.056	0.043	-0.230	0.008	0.000*	0.001
8.16	50	3.368	1.517	3.393	1.513	0.024	0.303	0.952	0.017	0.279	0.034	0.064	0.040	-0.215	0.007	0.000*	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Least open

		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	14	-0.738	1.229	-1.306	1.280	-0.567	0.474	0.226	0.002	-0.009	0.050	-0.076	0.056	-0.067	0.020	0.021	0.001
1.2	14	-0.477	1.022	-0.587	0.761	-0.111	0.341	0.785	0.013	-0.014	0.051	-0.068	0.052	-0.054	0.019	0.026	0.002
1.3	17	-0.009	0.129	0.038	0.136	0.047	0.045	0.437	0.003	-0.001	0.023	0.006	0.025	0.007	0.008	0.544	0.006
1.8	14	-0.258	0.562	-0.529	0.469	-0.272	0.196	0.261	0.002	-0.006	0.049	-0.044	0.064	-0.038	0.022	0.210	0.003
1.9	29	-0.262	0.533	-0.452	0.629	-0.190	0.153	0.080	0.002	-0.011	0.020	-0.025	0.032	-0.014	0.007	0.013	0.001
2.1	18	0.788	0.963	0.590	1.315	-0.198	0.384	0.581	0.005	0.013	0.017	0.010	0.021	-0.003	0.006	0.497	0.006
2.2	13	1.395	1.118	-0.391	0.892	-1.786	0.397	0.003	0.001	0.023	0.025	-0.006	0.013	-0.029	0.008	0.010	0.001
2.3	11	0.926	0.810	0.723	0.894	-0.203	0.364	0.291	0.003	0.017	0.015	0.011	0.019	-0.006	0.007	0.174	0.003
3.1.a	28	-0.005	0.007	-0.006	0.009	-0.001	0.002	0.723	0.008	-0.004	0.006	-0.005	0.008	-0.001	0.002	0.591	0.008
3.1.b	24	-0.009	0.009	-0.005	0.008	0.004	0.002	0.045	0.002	-0.007	0.007	-0.004	0.007	0.002	0.002	0.119	0.002
3.2	19	0.301	0.207	0.093	0.291	-0.208	0.082	0.027	0.001	0.011	0.011	0.002	0.012	-0.009	0.004	0.035	0.002
3.3	25	0.371	0.639	0.842	0.799	0.470	0.205	0.047	0.002	0.029	0.057	0.050	0.047	0.020	0.015	0.290	0.004
4.1	31	-2.563	2.220	-2.802	2.581	-0.239	0.612	0.543	0.004	-0.035	0.019	-0.043	0.019	-0.008	0.005	0.058	0.002
4.2	31	-1.500	1.099	-1.546	1.177	-0.046	0.289	0.826	0.050	-0.032	0.017	-0.038	0.016	-0.006	0.004	0.100	0.002
4.3	30	0.956	1.427	0.497	1.095	-0.460	0.328	0.148	0.002	0.022	0.061	0.005	0.019	-0.016	0.012	0.145	0.003
5.1	31	-10.303	10.796	-11.640	15.399	-1.337	3.378	0.495	0.004	-0.026	0.019	-0.034	0.025	-0.008	0.006	0.119	0.002
5.2	18	0.568	0.804	1.698	1.241	1.130	0.349	0.005	0.001	0.017	0.021	0.040	0.036	0.023	0.010	0.019	0.001
6.1	26	0.035	0.151	-0.037	0.099	-0.073	0.036	0.114	0.002	0.020	0.033	-0.008	0.022	-0.028	0.008	0.005	0.001
6.9.a	31	-1.146	6.157	-3.999	9.191	-2.853	1.987	0.125	0.002	-0.014	0.030	-0.026	0.023	-0.012	0.007	0.054	0.002
6.9.b	31	-6.522	12.992	-7.245	11.235	-0.723	3.085	0.705	0.007	-0.027	0.033	-0.032	0.023	-0.006	0.007	0.394	0.005
6.9.c	31	-1.116	2.348	-1.303	2.143	-0.187	0.571	0.596	0.006	-0.028	0.036	-0.043	0.037	-0.015	0.009	0.086	0.002
6.10	22	1.915	2.018	0.304	1.047	-1.611	0.485	0.003	0.001	0.037	0.051	0.004	0.013	-0.034	0.011	0.008	0.001
7.1	30	-0.160	0.287	-0.111	0.268	0.049	0.072	0.024	0.001	-0.005	0.011	-0.003	0.010	0.002	0.003	0.160	0.003
7.2.a	30	5347.6	14231.4	3009.8	20806.9	-2337.8	4602.4	0.591	0.006	0.028	0.034	0.038	0.033	0.010	0.009	0.122	0.003
7.2.b	30	0.015	0.038	-0.005	0.102	-0.021	0.020	0.341	0.003	0.010	0.031	0.022	0.028	0.011	0.008	0.085	0.002
7.2.c	28	-0.001	0.004	-0.001	0.004	0.000	0.001	0.764	0.010	0.000	0.025	-0.003	0.021	-0.003	0.006	0.554	0.007
7.3	28	-1020.70	3587.32	-145.02	321.35	875.69	680.65	0.185	0.002	-0.022	0.068	-0.023	0.038	-0.001	0.015	0.942	0.050
7.5	8	0.321	0.251	0.042	0.246	-0.279	0.124	0.017	0.001	0.022	0.021	-0.001	0.019	-0.022	0.010	0.023	0.002
7.6	31	0.183	0.250	0.263	0.332	0.080	0.075	0.251	0.002	0.031	0.039	0.024	0.025	-0.007	0.008	0.369	0.004
7.8	27	0.629	0.526	0.590	0.507	-0.039	0.141	0.105	0.002	0.011	0.011	0.008	0.008	-0.003	0.003	0.001*	0.001
7.9	27	0.611	0.480	0.583	0.459	-0.028	0.128	0.499	0.004	0.023	0.026	0.016	0.014	-0.006	0.006	0.065	0.002
7.10	7	-0.797	0.662	-1.164	0.326	-0.367	0.279	0.265	0.003	-0.011	0.013	-0.024	0.012	-0.013	0.007	0.175	0.003
8.1.a	5	-0.005	0.006	0.007	0.015	0.013	0.007	0.034	0.002	-0.004	0.005	0.005	0.010	0.009	0.005	0.015	0.001
8.1.b	5	0.000	0.002	0.004	0.006	0.005	0.003	0.054	0.002	0.000	0.002	0.004	0.005	0.004	0.002	0.054	0.002
8.3	4	1.663	2.588	2.356	3.475	0.693	2.166	0.816	0.025	0.009	0.074	0.059	0.099	0.050	0.062	0.595	0.010
8.4	7	0.006	0.531	-0.405	0.597	-0.411	0.302	0.352	0.003	-0.007	0.043	-0.023	0.050	-0.016	0.025	0.652	0.013
8.5	2	-0.808	1.146	-1.057	1.480	-0.248	1.324	0.484	0.003	-0.018	0.027	-0.052	0.062	-0.035	0.048	0.388	0.005
8.8	4	-0.021	0.003	-0.048	0.081	-0.027	0.040	0.543	0.005	-0.027	0.021	-0.033	0.028	-0.006	0.018	0.730	0.025
8.12	24	-0.613	1.617	-0.752	1.649	-0.139	0.471	0.794	0.017	-0.030	0.083	-0.063	0.097	-0.032	0.026	0.309	0.004
8.14	31	0.370	0.437	-0.197	0.548	-0.567	0.126	0.001*	0.001	0.035	0.029	0.000	0.035	-0.034	0.008	0.001*	0.001
8.15	31	1.566	2.317	6.032	2.436	4.465	0.604	0.000*	0.001	0.145	0.102	0.215	0.108	0.069	0.027	0.071	0.002
8.16	31	0.908	1.515	1.884	1.446	0.976	0.376	0.002	0.001	0.118	0.105	0.129	0.062	0.011	0.022	0.680	0.017

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Middle open

		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	34	-0.483	1.286	-0.713	1.109	-0.231	0.291	0.402	0.003	-0.009	0.058	-0.092	0.172	-0.083	0.031	0.020	0.002
1.2	32	-0.415	1.104	-0.216	0.657	0.199	0.227	0.352	0.003	-0.015	0.065	-0.058	0.085	-0.043	0.019	0.045	0.002
1.3	45	0.018	0.188	0.006	0.153	-0.012	0.036	0.775	0.005	0.004	0.032	0.003	0.025	0.000	0.006	0.968	0.050
1.8	31	-0.200	0.635	-0.457	0.598	-0.256	0.157	0.173	0.002	-0.018	0.037	-0.041	0.070	-0.023	0.014	0.145	0.003
1.9	87	-0.283	0.803	-0.285	0.483	-0.002	0.100	0.983	0.017	-0.013	0.036	-0.019	0.030	-0.006	0.005	0.198	0.003
2.1	45	0.666	1.005	0.276	1.117	-0.390	0.224	0.071	0.002	0.010	0.016	0.004	0.016	-0.006	0.003	0.060	0.002
2.2	51	1.290	1.310	0.286	1.168	-1.004	0.246	0.001*	0.001	0.020	0.024	0.004	0.019	-0.017	0.004	0.001*	0.001
2.3	17	0.494	0.730	0.156	0.619	-0.338	0.232	0.040	0.002	0.010	0.026	0.002	0.009	-0.008	0.007	0.137	0.003
3.1.a	88	-0.003	0.006	-0.001	0.004	0.002	0.001	0.005	0.001	-0.003	0.005	-0.001	0.004	0.002	0.001	0.008	0.002
3.1.b	74	-0.004	0.008	-0.004	0.008	0.001	0.001	0.660	0.004	-0.004	0.006	-0.003	0.007	0.000	0.001	0.685	0.010
3.2	51	0.203	0.270	0.190	0.283	-0.013	0.055	0.808	0.006	0.006	0.008	0.007	0.015	0.001	0.002	0.640	0.008
3.3	67	0.389	0.740	0.494	0.727	0.105	0.127	0.438	0.003	0.035	0.062	0.026	0.044	-0.009	0.009	0.394	0.005
4.1	98	-1.552	1.918	-1.553	1.756	-0.001	0.263	0.996	0.050	-0.033	0.021	-0.040	0.018	-0.007	0.003	0.011	0.002
4.2	98	-1.030	1.085	-0.954	0.921	0.076	0.144	0.316	0.003	-0.032	0.019	-0.037	0.018	-0.005	0.003	0.030	0.002
4.3	97	0.538	1.296	0.555	1.039	0.017	0.169	0.927	0.010	0.011	0.037	0.008	0.017	-0.003	0.004	0.534	0.006
5.1	96	-5.460	11.590	-5.272	8.048	0.188	1.440	0.857	0.008	-0.024	0.028	-0.028	0.021	-0.004	0.004	0.244	0.004
5.2	46	0.655	1.044	0.619	0.884	-0.036	0.202	0.841	0.007	0.014	0.027	0.010	0.016	-0.004	0.005	0.315	0.005
6.1	60	0.152	0.340	-0.062	0.153	-0.215	0.048	0.000*	0.001	0.032	0.043	-0.009	0.020	-0.041	0.006	0.000*	0.001
6.9.a	98	1.469	13.038	-4.079	11.826	-5.548	1.778	0.019	0.001	-0.006	0.043	-0.026	0.033	-0.020	0.005	0.001*	0.001
6.9.b	98	-3.150	15.079	-5.414	12.039	-2.265	1.949	0.258	0.002	-0.017	0.038	-0.029	0.033	-0.012	0.005	0.034	0.002
6.9.c	98	-0.598	2.314	-0.719	1.815	-0.121	0.297	0.678	0.004	-0.020	0.043	-0.031	0.041	-0.011	0.006	0.082	0.002
6.10	66	1.132	2.159	0.217	1.458	-0.915	0.321	0.008	0.001	0.020	0.043	0.002	0.022	-0.018	0.006	0.005	0.001
7.1	100	-0.046	0.275	-0.041	0.210	0.005	0.035	0.811	0.006	-0.001	0.009	-0.002	0.010	-0.001	0.001	0.127	0.002
7.2.a	96	2069.7	17163.5	7299.5	57505.2	5229.8	6124.9	0.224	0.002	0.025	0.053	0.024	0.034	-0.001	0.006	0.875	0.025
7.2.b	93	0.042	0.280	0.017	0.309	-0.025	0.043	0.603	0.004	0.010	0.050	0.009	0.031	-0.001	0.006	0.820	0.017
7.2.c	90	-0.005	0.015	-0.005	0.015	0.000	0.002	0.985	0.025	-0.003	0.047	-0.016	0.030	-0.013	0.006	0.037	0.002
7.3	86	-143.68	1101.52	-97.00	457.28	46.68	128.61	0.719	0.005	-0.004	0.041	-0.011	0.023	-0.007	0.005	0.214	0.004
7.5	35	-0.195	1.419	0.371	3.265	0.566	0.602	0.352	0.003	-0.003	0.103	0.003	0.041	0.006	0.019	0.788	0.013
7.6	100	0.246	0.433	0.241	0.401	-0.005	0.059	0.931	0.013	0.030	0.042	0.026	0.036	-0.004	0.006	0.470	0.006
7.8	80	0.496	0.524	0.454	0.514	-0.042	0.082	0.049	0.002	0.008	0.010	0.006	0.007	-0.002	0.001	0.000*	0.001
7.9	84	0.400	0.489	0.358	0.490	-0.042	0.075	0.080	0.002	0.011	0.014	0.008	0.011	-0.003	0.002	0.000*	0.001
7.10	23	-0.727	0.876	-0.478	0.782	0.249	0.245	0.141	0.002	-0.015	0.016	-0.013	0.024	0.002	0.006	0.638	0.007
8.1.a	14	-0.005	0.011	0.006	0.010	0.011	0.004	0.021	0.002	-0.003	0.007	0.004	0.006	0.007	0.003	0.033	0.002
8.1.b	14	-0.002	0.004	0.000	0.005	0.002	0.002	0.283	0.002	-0.001	0.003	0.000	0.004	0.001	0.001	0.314	0.004
8.3	11	1.455	1.524	0.117	3.072	-1.338	1.034	0.224	0.002	0.023	0.024	-0.006	0.062	-0.029	0.020	0.166	0.003
8.4	15	0.040	0.415	-0.346	0.616	-0.385	0.192	0.089	0.002	0.029	0.083	-0.051	0.061	-0.080	0.027	0.017	0.002
8.5	14	-0.613	0.485	0.215	0.359	0.828	0.161	0.000*	0.001	-0.073	0.054	0.020	0.047	0.093	0.019	0.001*	0.001
8.8	9	-0.116	0.119	-0.046	0.033	0.071	0.041	0.058	0.002	-0.058	0.019	-0.043	0.023	0.015	0.010	0.165	0.003
8.12	50	-0.336	0.754	-0.425	0.775	-0.089	0.153	0.564	0.003	-0.010	0.071	-0.060	0.091	-0.050	0.016	0.003	0.001
8.14	98	0.536	0.544	-0.240	0.795	-0.776	0.097	0.000*	0.001	0.041	0.034	-0.005	0.036	-0.045	0.005	0.000*	0.001
8.15	98	2.335	2.271	7.162	3.460	4.827	0.418	0.000*	0.001	0.204	0.089	0.165	0.097	-0.040	0.013	0.032	0.002
8.16	98	1.238	1.663	2.722	1.591	1.484	0.232	0.000*	0.001	0.157	0.096	0.136	0.068	-0.021	0.012	0.174	0.003

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Most open		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	13	-1.276	1.733	-0.581	1.028	0.696	0.559	0.178	0.002	-0.071	0.110	-0.064	0.092	0.007	0.040	0.886	0.013
1.2	12	-0.841	1.525	-0.191	0.332	0.649	0.451	0.175	0.002	-0.074	0.079	-0.044	0.074	0.030	0.031	0.397	0.003
1.3	16	0.046	0.210	0.004	0.235	-0.042	0.079	0.694	0.006	0.009	0.027	0.002	0.023	-0.006	0.009	0.598	0.006
1.8	7	-0.436	0.445	-0.466	0.555	-0.030	0.269	0.874	0.013	-0.024	0.016	-0.049	0.054	-0.025	0.021	0.321	0.003
1.9	41	-0.232	0.696	-0.284	0.574	-0.052	0.141	0.672	0.006	-0.011	0.030	-0.015	0.028	-0.004	0.006	0.505	0.004
2.1	23	0.397	0.735	0.016	0.963	-0.381	0.253	0.134	0.002	0.004	0.009	0.000	0.012	-0.004	0.003	0.152	0.002
2.2	20	1.014	1.229	0.368	0.876	-0.647	0.338	0.136	0.002	0.015	0.020	0.005	0.013	-0.009	0.005	0.138	0.002
2.3	9	0.077	0.123	0.153	0.177	0.076	0.072	0.337	0.003	0.001	0.001	0.002	0.002	0.001	0.001	0.349	0.003
3.1.a	39	-0.001	0.003	0.000	0.004	0.000	0.001	0.541	0.005	-0.001	0.003	0.000	0.004	0.000	0.001	0.497	0.003
3.1.b	33	0.000	0.008	-0.005	0.011	-0.005	0.002	0.023	0.001	0.000	0.006	-0.004	0.008	-0.004	0.002	0.021	0.001
3.2	29	0.189	0.329	0.241	0.436	0.052	0.101	0.659	0.005	0.006	0.010	0.006	0.012	0.000	0.003	0.926	0.025
3.3	32	0.181	0.599	0.603	0.623	0.422	0.153	0.015	0.001	0.034	0.065	0.044	0.056	0.010	0.015	0.571	0.004
4.1	48	-1.111	1.550	-1.201	1.475	-0.090	0.309	0.746	0.007	-0.033	0.021	-0.035	0.022	-0.002	0.004	0.598	0.005
4.2	48	-0.802	0.952	-0.820	0.899	-0.018	0.189	0.910	0.025	-0.032	0.020	-0.034	0.021	-0.002	0.004	0.633	0.007
4.3	46	1.023	2.047	0.363	0.949	-0.660	0.333	0.054	0.001	0.027	0.090	0.004	0.012	-0.023	0.013	0.101	0.002
5.1	46	-6.247	13.252	-4.656	9.443	1.592	2.399	0.236	0.003	-0.028	0.025	-0.030	0.028	-0.002	0.006	0.735	0.010
5.2	13	0.247	1.024	0.543	0.801	0.296	0.361	0.424	0.004	0.004	0.014	0.007	0.011	0.003	0.005	0.499	0.003
6.1	24	0.127	0.385	-0.010	0.065	-0.137	0.080	0.081	0.002	0.035	0.043	-0.003	0.019	-0.038	0.010	0.001*	0.001
6.9.a	53	2.210	9.716	-1.376	8.174	-3.586	1.744	0.010	0.001	0.001	0.044	-0.019	0.051	-0.020	0.009	0.047	0.001
6.9.b	53	-0.104	11.211	-4.981	18.761	-4.878	3.002	0.119	0.002	-0.006	0.045	-0.024	0.056	-0.018	0.010	0.090	0.002
6.9.c	53	-0.246	1.050	-0.248	1.340	-0.002	0.234	0.991	0.050	-0.016	0.045	-0.015	0.036	0.001	0.008	0.935	0.050
6.10	33	0.224	2.092	0.077	2.184	-0.147	0.526	0.814	0.010	0.004	0.031	0.000	0.036	-0.004	0.008	0.666	0.008
7.1	53	-0.017	0.449	-0.049	0.310	-0.032	0.075	0.260	0.003	0.001	0.011	0.001	0.015	0.000	0.003	0.886	0.017
7.2.a	51	88.7	4346.6	863.1	3022.3	774.4	741.3	0.068	0.002	0.027	0.066	0.033	0.056	0.006	0.012	0.630	0.006
7.2.b	49	-0.024	0.252	-0.004	0.325	0.019	0.059	0.770	0.008	0.010	0.065	0.018	0.054	0.008	0.012	0.565	0.004
7.2.c	48	-0.007	0.023	-0.006	0.017	0.001	0.004	0.889	0.017	-0.007	0.043	-0.018	0.045	-0.011	0.009	0.176	0.002
7.3	38	-38.35	98.52	-17.68	46.256	20.66	17.66	0.139	0.002	-0.007	0.017	-0.004	0.010	0.002	0.003	0.376	0.003
7.5	14	5.941	21.738	4.619	16.589	-1.322	7.308	0.363	0.004	0.040	0.123	0.003	0.039	-0.037	0.035	0.252	0.002
7.6	55	0.229	0.422	0.287	0.562	0.059	0.095	0.513	0.004	0.034	0.051	0.029	0.042	-0.005	0.009	0.583	0.005
7.8	37	0.456	0.475	0.505	0.526	0.049	0.117	0.148	0.002	0.008	0.012	0.007	0.009	-0.001	0.002	0.227	0.002
7.9	46	0.420	0.678	0.376	0.541	-0.044	0.128	0.344	0.003	0.010	0.025	0.006	0.010	-0.004	0.004	0.125	0.002
7.10	10	-0.890	0.658	-0.742	0.536	0.148	0.268	0.303	0.003	-0.020	0.019	-0.025	0.023	-0.005	0.009	0.082	0.002
8.1.a	4	0.017	0.025	-0.003	0.016	-0.020	0.015	0.036	0.001	0.012	0.016	-0.002	0.009	-0.014	0.009	0.039	0.001
8.1.b	4	0.010	0.007	-0.005	0.014	-0.015	0.008	0.102	0.002	0.008	0.006	-0.004	0.011	-0.012	0.006	0.081	0.001
8.3	3	4.089	2.530	0.464	1.048	-3.625	1.581	0.213	0.002	0.074	0.067	0.005	0.012	-0.069	0.039	0.260	0.002
8.4	5	0.439	0.583	-0.427	0.511	-0.866	0.347	0.148	0.002	0.080	0.107	-0.072	0.078	-0.152	0.059	0.122	0.002
8.5	10	-0.661	1.345	0.005	0.539	0.666	0.458	0.155	0.002	-0.043	0.107	0.004	0.066	0.047	0.040	0.305	0.002
8.12	23	-0.151	0.835	-0.491	0.799	-0.340	0.241	0.229	0.003	-0.010	0.082	-0.054	0.083	-0.045	0.024	0.088	0.002
8.14	53	0.625	0.527	-0.166	0.604	-0.792	0.110	0.000*	0.001	0.037	0.032	-0.002	0.031	-0.039	0.006	0.000*	0.001
8.15	54	2.955	2.601	7.227	3.990	4.272	0.648	0.000*	0.001	0.222	0.097	0.150	0.108	-0.073	0.020	0.010	0.001
8.16	53	1.407	1.392	3.029	1.495	1.622	0.281	0.000*	0.001	0.182	0.096	0.125	0.062	-0.057	0.016	0.007	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

LDCs

		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	14	-1.481	1.529	-0.970	1.581	0.511	0.588	0.376	0.004	-0.027	0.029	-0.022	0.034	0.005	0.012	0.703	0.008
1.2	14	-1.265	1.549	-0.390	1.129	0.875	0.512	0.118	0.003	-0.046	0.046	-0.031	0.055	0.016	0.019	0.455	0.004
1.3	14	0.090	0.168	0.002	0.189	-0.088	0.068	0.303	0.004	0.018	0.029	-0.003	0.030	-0.021	0.011	0.164	0.003
1.8	24	-0.104	0.742	-0.684	0.504	-0.580	0.183	0.009	0.002	-0.003	0.027	-0.029	0.021	-0.026	0.007	0.002	0.002
1.9	41	-0.425	0.873	-0.723	0.652	-0.298	0.170	0.022	0.002	-0.014	0.026	-0.036	0.030	-0.022	0.006	0.000*	0.002
2.1	21	1.177	1.156	1.426	1.755	0.249	0.459	0.533	0.006	0.024	0.026	0.023	0.031	-0.001	0.009	0.814	0.013
2.2	25	1.770	1.630	-0.221	1.226	-1.992	0.408	0.000*	0.001	0.035	0.033	-0.003	0.023	-0.038	0.008	0.000*	0.002
2.3	12	1.099	0.924	0.503	1.289	-0.595	0.458	0.058	0.002	0.025	0.030	0.009	0.022	-0.016	0.011	0.069	0.002
3.1.a	40	-0.008	0.008	-0.007	0.010	0.001	0.002	0.632	0.007	-0.007	0.007	-0.006	0.009	0.001	0.002	0.767	0.010
3.1.b	30	-0.009	0.012	-0.011	0.014	-0.003	0.003	0.393	0.004	-0.006	0.009	-0.009	0.011	-0.003	0.003	0.274	0.003
3.2	7	0.538	0.885	0.186	0.445	-0.352	0.374	0.428	0.005	0.020	0.034	0.015	0.038	-0.004	0.019	0.857	0.017
3.3	29	0.145	0.537	0.723	0.797	0.579	0.179	0.004	0.001	0.011	0.078	0.050	0.060	0.038	0.018	0.095	0.002
4.1	50	-3.516	2.413	-3.785	2.111	-0.269	0.453	0.403	0.005	-0.028	0.019	-0.042	0.022	-0.014	0.004	0.000*	0.001
4.2	50	-2.004	1.348	-2.056	1.035	-0.052	0.240	0.753	0.013	-0.025	0.016	-0.035	0.020	-0.010	0.004	0.000*	0.001
4.3	48	0.624	1.691	1.085	1.280	0.461	0.306	0.117	0.002	0.022	0.067	0.016	0.024	-0.006	0.010	0.525	0.005
5.1	48	-20.125	15.930	-17.399	12.873	2.726	2.956	0.282	0.003	-0.033	0.026	-0.038	0.018	-0.005	0.005	0.150	0.002
5.2	23	0.564	1.403	1.442	1.331	0.878	0.403	0.060	0.002	0.022	0.038	0.034	0.034	0.012	0.011	0.273	0.003
6.1	41	0.119	0.297	-0.069	0.130	-0.188	0.051	0.001*	0.001	0.037	0.046	-0.018	0.023	-0.055	0.008	0.000*	0.001
6.9.a	49	-0.917	13.557	-5.286	10.023	-4.369	2.409	0.082	0.002	-0.006	0.036	-0.022	0.028	-0.016	0.006	0.003	0.002
6.9.b	49	-10.824	19.117	-9.261	15.431	1.563	3.510	0.501	0.006	-0.021	0.033	-0.028	0.032	-0.007	0.007	0.156	0.003
6.9.c	49	-2.163	3.073	-1.561	2.246	0.601	0.544	0.104	0.002	-0.033	0.042	-0.037	0.047	-0.004	0.009	0.687	0.007
6.10	41	0.901	2.586	0.729	1.391	-0.172	0.459	0.732	0.010	0.016	0.047	0.010	0.025	-0.007	0.008	0.474	0.004
7.1	50	-0.144	0.344	-0.154	0.224	-0.009	0.058	0.787	0.017	-0.005	0.012	-0.006	0.013	-0.001	0.002	0.505	0.005
7.2.a	46	88.375	232.687	253.082	593.249	164.707	93.957	0.019	0.002	0.048	0.069	0.056	0.049	0.008	0.012	0.574	0.006
7.2.b	45	0.021	0.119	0.011	0.039	-0.010	0.019	0.633	0.008	0.023	0.071	0.031	0.049	0.008	0.013	0.593	0.006
7.2.c	39	0.000	0.005	0.000	0.006	0.000	0.001	0.856	0.025	0.008	0.035	-0.002	0.033	-0.010	0.008	0.220	0.003
7.3	50	3.562	11.955	-5.773	13.644	-9.335	2.565	0.012	0.002	0.001	0.003	-0.002	0.004	-0.003	0.001	0.009	0.002
7.5	4	0.768	0.963	0.453	0.661	-0.315	0.584	0.169	0.003	0.043	0.029	0.015	0.010	-0.028	0.015	0.160	0.003
7.6	50	0.158	0.487	0.159	0.257	0.002	0.078	0.979	0.050	0.020	0.065	0.021	0.033	0.001	0.010	0.931	0.050
7.8	49	0.745	0.611	0.792	0.629	0.047	0.125	0.143	0.003	0.016	0.017	0.013	0.011	-0.003	0.003	0.003	0.002
7.9	49	0.529	0.561	0.600	0.606	0.070	0.118	0.033	0.002	0.027	0.032	0.020	0.016	-0.008	0.005	0.012	0.002
7.10	11	-0.605	0.603	-0.976	0.525	-0.371	0.241	0.089	0.002	-0.009	0.008	-0.019	0.011	-0.010	0.004	0.012	0.002
8.4	15	-0.090	0.503	-0.430	0.735	-0.340	0.230	0.268	0.003	-0.009	0.038	-0.036	0.063	-0.027	0.019	0.279	0.004
8.5	8	-1.193	0.597	0.089	1.069	1.282	0.433	0.014	0.002	-0.059	0.025	0.002	0.056	0.061	0.022	0.028	0.002
8.12	38	-0.677	1.351	-0.294	1.116	0.382	0.284	0.211	0.003	-0.041	0.075	-0.039	0.082	0.002	0.018	0.930	0.025
8.14	49	0.104	0.181	0.034	0.217	-0.070	0.040	0.116	0.002	0.031	0.031	0.007	0.037	-0.024	0.007	0.002	0.002
8.15	50	0.243	0.313	5.973	2.861	5.730	0.407	0.000*	0.001	0.087	0.056	0.272	0.054	0.185	0.011	0.000*	0.001
8.16	49	0.099	0.152	0.978	0.873	0.880	0.127	0.000*	0.001	0.048	0.046	0.147	0.058	0.099	0.011	0.000*	0.001

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Autocracies

		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	12	-1.005	1.459	-1.292	1.402	-0.286	0.584	0.654	0.006	-0.047	0.129	-0.067	0.113	-0.020	0.050	0.750	0.006
1.2	12	-0.548	0.737	-0.449	0.588	0.098	0.272	0.736	0.010	-0.045	0.087	-0.060	0.099	-0.015	0.038	0.741	0.005
1.3	13	0.053	0.316	-0.065	0.259	-0.118	0.113	0.435	0.003	0.008	0.042	-0.004	0.030	-0.013	0.014	0.490	0.003
1.8	11	-0.193	0.483	-0.450	0.479	-0.257	0.205	0.304	0.002	-0.013	0.020	-0.034	0.030	-0.021	0.011	0.023	0.002
1.9	23	-0.166	0.659	-0.451	0.648	-0.285	0.193	0.018	0.001	-0.006	0.023	-0.026	0.033	-0.020	0.008	0.004	0.001
2.1	12	0.508	0.859	0.611	1.072	0.103	0.397	0.704	0.007	0.008	0.013	0.007	0.015	0.000	0.006	0.948	0.017
2.2	16	1.639	1.742	-0.120	0.594	-1.759	0.460	0.003	0.001	0.026	0.032	-0.002	0.008	-0.028	0.008	0.005	0.001
2.3	6	0.474	0.532	0.422	0.545	-0.052	0.311	0.549	0.004	0.006	0.007	0.005	0.007	-0.001	0.004	0.313	0.002
3.1.a	24	-0.005	0.008	-0.003	0.004	0.003	0.002	0.118	0.002	-0.004	0.006	-0.002	0.004	0.002	0.001	0.150	0.002
3.1.b	20	-0.005	0.009	-0.008	0.012	-0.003	0.003	0.280	0.002	-0.004	0.008	-0.007	0.010	-0.003	0.003	0.265	0.002
3.2	13	0.201	0.253	0.107	0.353	-0.095	0.121	0.482	0.003	0.009	0.015	0.008	0.028	-0.001	0.009	0.927	0.013
3.3	17	0.410	0.557	0.417	0.683	0.006	0.214	0.978	0.050	0.020	0.049	0.017	0.038	-0.003	0.015	0.876	0.010
4.1	28	-2.307	1.835	-2.018	1.744	0.289	0.478	0.225	0.002	-0.037	0.014	-0.047	0.020	-0.010	0.005	0.023	0.001
4.2	28	-1.504	1.115	-1.296	0.952	0.209	0.277	0.091	0.001	-0.034	0.014	-0.043	0.020	-0.008	0.005	0.034	0.002
4.3	28	0.593	1.402	0.686	1.128	0.093	0.340	0.777	0.013	0.009	0.022	0.009	0.017	0.000	0.005	0.949	0.025
5.1	28	-11.516	20.091	-6.238	7.790	5.278	4.072	0.078	0.001	-0.031	0.029	-0.034	0.026	-0.004	0.007	0.540	0.003
5.2	15	0.674	1.524	1.081	0.886	0.408	0.455	0.312	0.002	0.022	0.041	0.021	0.022	-0.002	0.012	0.875	0.008
6.1	19	0.044	0.213	-0.004	0.057	-0.048	0.051	0.390	0.003	0.020	0.040	-0.002	0.019	-0.022	0.010	0.080	0.002
6.9.a	28	-1.055	9.554	-4.541	8.859	-3.486	2.462	0.144	0.002	0.002	0.039	-0.035	0.042	-0.037	0.011	0.003	0.001
6.9.b	28	-5.515	21.951	-11.348	21.256	-5.833	5.775	0.312	0.002	-0.007	0.044	-0.046	0.054	-0.039	0.013	0.011	0.001
6.9.c	28	-1.280	3.336	-1.377	2.122	-0.096	0.747	0.847	0.017	-0.019	0.051	-0.053	0.053	-0.034	0.014	0.021	0.001
6.10	20	1.361	2.730	0.992	1.153	-0.370	0.663	0.639	0.006	0.026	0.055	0.013	0.017	-0.013	0.013	0.400	0.002
7.1	28	-0.091	0.308	-0.070	0.305	0.021	0.082	0.145	0.002	-0.002	0.010	0.000	0.021	0.002	0.004	0.478	0.003
7.2.a	27	5808.1	30740.4	21694.1	107963.4	15886.0	21603.4	0.296	0.002	0.027	0.082	0.027	0.037	0.000	0.017	0.981	0.050
7.2.b	27	0.047	0.512	-0.059	0.293	-0.106	0.114	0.479	0.003	0.012	0.075	0.007	0.033	-0.005	0.016	0.782	0.006
7.2.c	23	-0.010	0.022	-0.010	0.014	0.000	0.005	0.966	0.025	-0.009	0.047	-0.030	0.035	-0.022	0.012	0.098	0.002
7.3	25	-26.14	91.09	-196.65	820.94	-170.51	165.20	0.290	0.002	-0.003	0.016	-0.012	0.026	-0.009	0.006	0.138	0.002
7.5	9	0.188	1.640	2.178	6.125	1.990	2.113	0.353	0.003	0.029	0.182	0.012	0.048	-0.017	0.063	0.819	0.007
7.6	28	0.339	0.587	0.264	0.411	-0.074	0.135	0.596	0.004	0.039	0.062	0.026	0.035	-0.014	0.013	0.378	0.002
7.8	22	0.518	0.518	0.580	0.541	0.062	0.160	0.186	0.002	0.008	0.010	0.008	0.008	-0.001	0.003	0.495	0.003
7.9	25	0.566	0.605	0.600	0.739	0.034	0.191	0.596	0.005	0.015	0.019	0.012	0.014	-0.003	0.005	0.048	0.002
7.10	3	-1.487	1.238	-1.140	0.806	0.346	0.853	0.312	0.002	-0.028	0.016	-0.030	0.016	-0.002	0.013	0.243	0.002
8.1.a	2	-0.005	0.007	0.016	0.017	0.021	0.013	0.438	0.003	-0.002	0.004	0.009	0.008	0.011	0.006	0.406	0.003
8.1.b	2	-0.002	0.005	0.002	0.001	0.004	0.004	0.598	0.005	-0.001	0.004	0.002	0.001	0.003	0.003	0.624	0.004
8.3	2	-0.235	1.692	0.775	1.280	1.010	1.500	0.715	0.008	-0.003	0.018	0.009	0.014	0.012	0.016	0.706	0.005
8.4	7	0.333	0.468	-0.588	0.309	-0.921	0.212	0.001*	0.001	0.085	0.089	-0.080	0.049	-0.165	0.038	0.004	0.001
8.5	2	-0.584	0.829	-0.021	0.015	0.563	0.586	0.507	0.004	-0.084	0.121	-0.013	0.007	0.071	0.086	0.544	0.003
8.12	14	-0.918	1.832	-0.241	0.725	0.676	0.527	0.259	0.002	-0.040	0.124	-0.020	0.101	0.021	0.043	0.697	0.004
8.14	28	0.301	0.393	-0.039	0.709	-0.340	0.153	0.024	0.001	0.039	0.041	0.007	0.042	-0.032	0.011	0.009	0.001
8.15	28	1.572	2.001	6.604	2.960	5.032	0.675	0.000*	0.001	0.155	0.101	0.200	0.099	0.045	0.027	0.223	0.002
8.16	28	0.858	1.430	2.544	1.843	1.686	0.441	0.000*	0.001	0.127	0.097	0.143	0.070	0.015	0.023	0.566	0.004

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Anocracies

		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	14	-1.043	1.658	-0.296	0.676	0.747	0.479	0.122	0.002	-0.034	0.044	-0.055	0.059	-0.021	0.020	0.307	0.003
1.2	12	-1.153	1.604	0.038	0.739	1.191	0.510	0.049	0.002	-0.048	0.056	-0.037	0.053	0.010	0.022	0.698	0.005
1.3	19	0.049	0.143	-0.016	0.166	-0.066	0.050	0.297	0.003	0.012	0.028	-0.003	0.028	-0.015	0.009	0.190	0.002
1.8	15	-0.016	0.500	-0.686	0.705	-0.670	0.223	0.020	0.001	-0.005	0.028	-0.050	0.091	-0.046	0.025	0.108	0.002
1.9	44	-0.382	0.863	-0.340	0.714	0.042	0.169	0.745	0.010	-0.013	0.030	-0.021	0.035	-0.008	0.007	0.170	0.002
2.1	27	0.550	0.825	0.777	1.800	0.228	0.381	0.496	0.004	0.011	0.021	0.014	0.030	0.003	0.007	0.570	0.004
2.2	21	0.835	1.153	0.350	1.118	-0.486	0.351	0.251	0.002	0.017	0.024	0.004	0.017	-0.013	0.007	0.112	0.002
2.3	11	0.715	0.922	0.442	0.995	-0.273	0.409	0.324	0.003	0.018	0.033	0.009	0.020	-0.009	0.012	0.292	0.003
3.1.a	44	-0.003	0.006	-0.003	0.010	0.000	0.002	0.988	0.050	-0.003	0.005	-0.003	0.008	0.000	0.001	0.991	0.025
3.1.b	35	-0.004	0.008	-0.004	0.009	0.000	0.002	0.952	0.017	-0.003	0.006	-0.003	0.007	0.000	0.002	0.998	0.050
3.2	21	0.188	0.247	0.286	0.332	0.098	0.090	0.193	0.002	0.006	0.009	0.009	0.012	0.003	0.003	0.217	0.003
3.3	35	0.202	0.747	0.784	0.665	0.582	0.169	0.002	0.001	0.027	0.065	0.047	0.043	0.020	0.013	0.216	0.002
4.1	49	-1.295	2.212	-2.174	2.173	-0.880	0.443	0.012	0.001	-0.026	0.025	-0.038	0.018	-0.012	0.004	0.008	0.001
4.2	49	-0.801	1.016	-1.201	1.009	-0.401	0.205	0.024	0.001	-0.025	0.023	-0.033	0.016	-0.008	0.004	0.030	0.001
4.3	47	0.566	1.813	0.783	1.221	0.217	0.319	0.523	0.005	0.015	0.069	0.011	0.022	-0.004	0.011	0.732	0.006
5.1	49	-6.813	11.733	-8.854	11.258	-2.041	2.323	0.176	0.002	-0.021	0.024	-0.031	0.029	-0.009	0.005	0.055	0.002
5.2	21	0.416	0.782	1.010	1.078	0.595	0.291	0.066	0.002	0.006	0.013	0.018	0.022	0.012	0.005	0.053	0.002
6.1	35	0.263	0.498	-0.072	0.161	-0.335	0.089	0.001*	0.001	0.050	0.059	-0.015	0.024	-0.065	0.011	0.000*	0.001
6.9.a	49	6.671	20.313	-5.795	17.597	-12.467	3.839	0.011	0.001	0.008	0.047	-0.023	0.029	-0.031	0.008	0.000*	0.001
6.9.b	49	-0.528	14.898	-6.826	18.367	-6.297	3.378	0.072	0.002	-0.006	0.038	-0.024	0.032	-0.018	0.007	0.012	0.001
6.9.c	49	-0.643	2.222	-0.925	2.608	-0.282	0.489	0.536	0.006	-0.017	0.037	-0.030	0.042	-0.013	0.008	0.139	0.002
6.10	36	0.921	1.906	0.133	1.400	-0.788	0.394	0.038	0.002	0.017	0.033	0.001	0.022	-0.015	0.007	0.015	0.001
7.2.a	47	912.6	3307.0	944.8	4409.6	32.3	804.0	0.968	0.025	0.036	0.069	0.035	0.055	-0.001	0.013	0.936	0.013
7.2.b	47	0.014	0.167	0.053	0.318	0.039	0.052	0.367	0.003	0.019	0.069	0.019	0.052	0.000	0.013	0.990	0.017
7.2.c	45	-0.004	0.014	-0.003	0.010	0.001	0.002	0.621	0.006	0.003	0.055	-0.013	0.031	-0.016	0.009	0.074	0.002
7.2.a	47	912.6	3307.0	944.8	4409.6	32.3	804.0	0.968	0.025	0.036	0.069	0.035	0.055	-0.001	0.013	0.936	0.013
7.3	43	-292.85	1386.56	-36.07	77.88	256.78	211.78	0.214	0.002	-0.013	0.044	-0.008	0.016	0.005	0.007	0.347	0.003
7.5	15	-0.371	1.012	-0.023	0.666	0.348	0.313	0.373	0.004	-0.011	0.047	-0.004	0.038	0.007	0.016	0.704	0.006
7.6	49	0.176	0.331	0.241	0.383	0.065	0.072	0.290	0.003	0.027	0.048	0.022	0.027	-0.005	0.008	0.518	0.004
7.8	40	0.546	0.548	0.567	0.571	0.021	0.125	0.507	0.005	0.011	0.017	0.009	0.011	-0.003	0.003	0.025	0.001
7.9	42	0.316	0.426	0.343	0.440	0.027	0.095	0.303	0.003	0.015	0.030	0.011	0.015	-0.004	0.005	0.101	0.002
7.10	8	-0.494	0.594	-0.548	0.518	-0.054	0.279	0.716	0.008	-0.009	0.013	-0.012	0.012	-0.003	0.006	0.275	0.003
8.1.a	5	-0.007	0.011	0.005	0.017	0.013	0.009	0.147	0.002	-0.004	0.007	0.003	0.011	0.007	0.006	0.190	0.002
8.1.b	5	-0.002	0.005	0.001	0.009	0.003	0.004	0.375	0.004	-0.001	0.004	0.001	0.007	0.002	0.004	0.426	0.004
8.3	4	2.627	1.723	-0.250	0.321	-2.877	0.876	0.028	0.002	0.036	0.026	-0.003	0.003	-0.038	0.013	0.046	0.002
8.4	12	0.026	0.546	-0.379	0.718	-0.405	0.260	0.257	0.003	0.009	0.069	-0.030	0.073	-0.039	0.029	0.319	0.003
8.5	5	-1.048	1.474	-0.084	0.571	0.964	0.707	0.097	0.002	-0.097	0.052	0.014	0.086	0.110	0.045	0.081	0.002
8.8	5	-0.064	0.046	-0.060	0.065	0.004	0.036	0.923	0.013	-0.045	0.035	-0.043	0.022	0.002	0.019	0.906	0.008
8.12	29	-0.263	0.827	-0.376	1.244	-0.113	0.277	0.684	0.007	-0.011	0.060	-0.055	0.074	-0.044	0.018	0.012	0.001
8.14	49	0.398	0.478	-0.130	0.557	-0.529	0.105	0.000*	0.001	0.034	0.033	0.002	0.035	-0.033	0.007	0.000*	0.001
8.15	49	1.966	2.346	6.516	3.195	4.549	0.566	0.000*	0.001	0.180	0.099	0.186	0.105	0.005	0.021	0.854	0.007
8.16	48	0.951	1.422	2.202	1.530	1.251	0.301	0.000*	0.001	0.134	0.099	0.132	0.061	-0.002	0.017	0.920	0.010

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Democracies		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	35	-0.524	1.243	-0.891	1.121	-0.367	0.283	0.136	0.002	-0.010	0.055	-0.099	0.164	-0.089	0.029	0.007	0.001
1.2	34	-0.323	1.078	-0.381	0.587	-0.058	0.211	0.765	0.013	-0.015	0.063	-0.066	0.071	-0.051	0.016	0.006	0.001
1.3	46	-0.005	0.140	0.049	0.123	0.054	0.028	0.094	0.002	-0.001	0.025	0.009	0.020	0.010	0.005	0.076	0.002
1.8	28	-0.370	0.634	-0.391	0.470	-0.022	0.149	0.895	0.025	-0.021	0.047	-0.042	0.058	-0.021	0.014	0.256	0.003
1.9	79	-0.253	0.751	-0.309	0.430	-0.056	0.097	0.560	0.007	-0.013	0.036	-0.019	0.026	-0.006	0.005	0.264	0.004
2.1	41	0.843	1.109	0.051	0.819	-0.792	0.215	0.000*	0.001	0.012	0.018	0.001	0.010	-0.011	0.003	0.000*	0.001
2.2	46	1.294	1.118	0.239	1.206	-1.056	0.243	0.001*	0.001	0.020	0.021	0.003	0.019	-0.016	0.004	0.002	0.001
2.3	18	0.470	0.685	0.250	0.543	-0.219	0.206	0.048	0.002	0.007	0.012	0.003	0.008	-0.005	0.003	0.034	0.002
3.1.a	73	-0.003	0.006	-0.002	0.006	0.001	0.001	0.095	0.002	-0.002	0.005	-0.001	0.005	0.001	0.001	0.136	0.002
3.1.b	61	-0.005	0.008	-0.003	0.007	0.002	0.001	0.110	0.002	-0.004	0.006	-0.002	0.006	0.001	0.001	0.157	0.002
3.2	52	0.244	0.255	0.107	0.255	-0.137	0.050	0.010	0.001	0.007	0.007	0.003	0.009	-0.004	0.002	0.011	0.002
3.3	58	0.305	0.731	0.649	0.762	0.344	0.139	0.022	0.002	0.028	0.056	0.043	0.051	0.015	0.010	0.183	0.002
4.1	83	-1.723	1.946	-1.589	1.939	0.134	0.301	0.438	0.004	-0.037	0.020	-0.040	0.019	-0.003	0.003	0.218	0.003
4.2	83	-1.129	1.113	-0.989	1.030	0.140	0.166	0.133	0.002	-0.035	0.019	-0.038	0.018	-0.003	0.003	0.275	0.004
4.3	83	0.977	1.533	0.318	0.830	-0.659	0.191	0.001*	0.001	0.023	0.067	0.005	0.012	-0.019	0.007	0.011	0.002
5.1	83	-5.667	8.483	-6.083	11.498	-0.416	1.568	0.646	0.008	-0.030	0.026	-0.028	0.019	0.002	0.004	0.579	0.017
5.2	38	0.562	0.793	0.796	1.122	0.234	0.223	0.242	0.002	0.013	0.019	0.016	0.029	0.003	0.006	0.478	0.008
6.1	55	0.081	0.244	-0.039	0.116	-0.120	0.036	0.010	0.001	0.023	0.029	-0.005	0.018	-0.028	0.005	0.000*	0.001
6.9.a	83	-0.116	5.999	-2.636	5.910	-2.520	0.924	0.024	0.002	-0.012	0.036	-0.025	0.030	-0.014	0.005	0.010	0.002
6.9.b	83	-3.840	11.142	-4.795	8.411	-0.955	1.532	0.534	0.006	-0.022	0.036	-0.030	0.033	-0.008	0.005	0.135	0.002
6.9.c	83	-0.478	1.589	-0.629	1.363	-0.151	0.230	0.540	0.006	-0.021	0.036	-0.030	0.032	-0.009	0.005	0.125	0.002
6.10	56	0.852	2.038	0.154	1.395	-0.698	0.330	0.056	0.002	0.016	0.042	0.002	0.021	-0.014	0.006	0.046	0.002
7.1	83	-0.060	0.268	-0.045	0.227	0.015	0.039	0.424	0.004	0.000	0.010	-0.001	0.008	-0.001	0.001	0.278	0.005
7.2.a	83	1810.1	11011.9	2456.5	13697.4	646.5	1929.1	0.720	0.010	0.020	0.045	0.028	0.036	0.008	0.006	0.202	0.002
7.2.b	83	0.015	0.147	-0.010	0.254	-0.025	0.032	0.419	0.003	0.006	0.040	0.013	0.034	0.007	0.006	0.244	0.003
7.2.c	79	-0.005	0.017	-0.006	0.017	-0.001	0.003	0.781	0.017	-0.008	0.034	-0.014	0.030	-0.006	0.005	0.237	0.003
7.3	68	-424.66	2397.33	-99.63	243.29	325.03	292.21	0.250	0.003	-0.008	0.054	-0.017	0.031	-0.009	0.008	0.244	0.003
7.5	29	2.830	15.162	2.012	11.615	-0.818	3.547	0.277	0.003	0.014	0.097	0.001	0.037	-0.012	0.019	0.508	0.010
7.6	83	0.274	0.407	0.323	0.525	0.049	0.073	0.500	0.005	0.036	0.039	0.030	0.038	-0.006	0.006	0.309	0.005
7.8	66	0.551	0.520	0.500	0.508	-0.051	0.089	0.007	0.001	0.009	0.011	0.007	0.007	-0.002	0.002	0.000*	0.001
7.9	71	0.513	0.516	0.460	0.469	-0.053	0.083	0.025	0.002	0.014	0.019	0.010	0.011	-0.004	0.003	0.004	0.001
7.10	23	-0.727	0.633	-0.713	0.778	0.013	0.209	0.938	0.050	-0.016	0.016	-0.020	0.027	-0.005	0.007	0.315	0.006
8.1.a	15	0.000	0.017	0.003	0.010	0.003	0.005	0.524	0.005	0.000	0.012	0.002	0.007	0.002	0.004	0.535	0.013
8.1.b	15	0.001	0.007	-0.001	0.008	-0.002	0.003	0.395	0.003	0.001	0.006	-0.001	0.006	-0.002	0.002	0.408	0.007
8.3	12	2.074	2.122	0.963	3.584	-1.111	1.202	0.415	0.003	0.031	0.056	0.015	0.085	-0.016	0.029	0.654	0.025
8.4	10	0.025	0.512	-0.203	0.591	-0.228	0.247	0.497	0.004	0.007	0.078	-0.038	0.055	-0.045	0.030	0.271	0.004
8.5	6	-0.636	0.630	-0.280	1.068	0.357	0.506	0.249	0.002	-0.037	0.012	-0.020	0.048	0.017	0.020	0.375	0.006
8.8	6	-0.099	0.146	-0.041	0.038	0.058	0.062	0.283	0.003	-0.048	0.016	-0.045	0.019	0.003	0.010	0.783	0.050
8.12	48	-0.402	0.860	-0.734	1.041	-0.332	0.195	0.144	0.002	-0.019	0.066	-0.080	0.094	-0.061	0.017	0.001*	0.001
8.14	83	0.565	0.535	-0.237	0.770	-0.801	0.103	0.000*	0.001	0.042	0.033	-0.005	0.033	-0.048	0.005	0.000*	0.001
8.15	83	2.439	2.514	7.502	3.438	5.064	0.468	0.000*	0.001	0.203	0.094	0.172	0.106	-0.030	0.016	0.165	0.002
8.16	83	1.262	1.637	2.739	1.534	1.478	0.246	0.000*	0.001	0.156	0.099	0.135	0.068	-0.021	0.013	0.229	0.003

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction

Appendix 5. Using 2001 as cut-off year

		Absolute rate of change								Relative rate of change							
Indicator	n	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment	Mean pre MDG	STD pre MDG	Mean MDG	STD MDG	Difference in means	Standard error	p-value	Holm-Bonferroni adjustment
1.1	44	-0.351	1.641	-0.963	1.959	-0.611	0.385	0.181	0.003	0.000	0.086	-0.104	0.184	-0.104	0.031	0.006	0.002
1.2	43	-0.247	1.292	-0.515	1.582	-0.268	0.311	0.466	0.004	-0.003	0.095	-0.081	0.178	-0.078	0.031	0.041	0.002
1.3	60	0.001	0.193	0.060	0.247	0.059	0.040	0.230	0.004	-0.001	0.039	0.017	0.081	0.018	0.012	0.223	0.005
1.8	44	-0.311	0.591	-0.450	0.399	-0.139	0.108	0.222	0.003	-0.021	0.035	-0.035	0.029	-0.014	0.007	0.062	0.003
1.9	171	-0.234	0.767	-0.316	0.528	-0.082	0.071	0.171	0.003	-0.010	0.033	-0.019	0.028	-0.009	0.003	0.005	0.002
2.1	87	0.631	1.046	0.434	1.192	-0.197	0.170	0.214	0.003	0.010	0.019	0.007	0.019	-0.003	0.003	0.146	0.003
2.2	83	1.563	1.751	0.166	1.012	-1.397	0.222	0.000*	0.001	0.025	0.032	0.002	0.016	-0.022	0.004	0.000*	0.001
2.3	27	0.562	0.809	0.270	0.762	-0.293	0.214	0.027	0.002	0.011	0.023	0.004	0.010	-0.007	0.005	0.054	0.002
3.1.a	159	-0.003	0.006	-0.002	0.006	0.001	0.001	0.047	0.002	-0.002	0.005	-0.002	0.005	0.001	0.001	0.076	0.003
3.1.b	130	-0.004	0.009	-0.004	0.009	0.001	0.001	0.480	0.005	-0.003	0.007	-0.003	0.007	0.000	0.001	0.608	0.013
3.2	105	0.265	0.351	0.165	0.297	-0.101	0.045	0.021	0.001	0.009	0.013	0.005	0.011	-0.004	0.002	0.029	0.002
3.3	131	0.213	0.762	0.618	0.636	0.404	0.087	0.000*	0.001	0.022	0.074	0.041	0.046	0.019	0.008	0.036	0.002
4.1	195	-1.528	2.002	-1.722	1.995	-0.194	0.202	0.160	0.002	-0.032	0.023	-0.039	0.019	-0.007	0.002	0.001*	0.001
4.2	195	-1.007	1.121	-1.055	1.045	-0.048	0.110	0.518	0.006	-0.030	0.022	-0.036	0.019	-0.005	0.002	0.002	0.001
4.3	190	0.800	1.989	0.535	0.929	-0.266	0.159	0.119	0.002	0.021	0.080	0.008	0.015	-0.014	0.006	0.025	0.002
5.1	183	-6.879	12.813	-6.804	11.165	0.076	1.256	0.930	0.017	-0.026	0.029	-0.030	0.023	-0.004	0.003	0.141	0.003
5.2	64	0.462	1.127	0.841	1.033	0.379	0.191	0.037	0.002	0.011	0.023	0.016	0.025	0.005	0.004	0.171	0.004
6.1	117	0.159	0.401	-0.041	0.133	-0.200	0.039	0.000*	0.001	0.038	0.050	-0.007	0.020	-0.044	0.005	0.000*	0.001
6.9.a	210	1.646	12.460	-2.809	9.463	-4.455	1.080	0.000*	0.001	-0.004	0.059	-0.022	0.036	-0.018	0.005	0.001*	0.001
6.9.b	211	-2.093	14.799	-5.391	13.945	-3.299	1.400	0.024	0.002	-0.013	0.053	-0.029	0.040	-0.016	0.005	0.001*	0.001
6.9.c	207	-0.481	2.168	-0.739	1.820	-0.258	0.197	0.159	0.002	-0.015	0.057	-0.028	0.040	-0.013	0.005	0.011	0.002
6.10	130	1.109	3.116	0.496	2.831	-0.613	0.369	0.154	0.002	0.018	0.081	0.010	0.065	-0.008	0.009	0.506	0.006
7.1	223	-0.055	0.353	-0.052	0.262	0.003	0.029	0.859	0.013	-0.001	0.011	-0.001	0.011	0.000	0.001	0.607	0.010
7.2.a	206	1229.9	10463.3	4104.1	39202.3	2874.2	2827.0	0.221	0.003	0.026	0.064	0.030	0.042	0.004	0.005	0.492	0.005
7.2.b	184	0.005	0.252	0.021	0.241	0.016	0.026	0.547	0.007	0.010	0.063	0.014	0.036	0.004	0.005	0.532	0.006
7.2.c	170	-0.005	0.018	-0.004	0.013	0.001	0.002	0.467	0.005	-0.003	0.049	-0.013	0.032	-0.010	0.005	0.031	0.002
7.3	181	-383.14	2445.67	-82.61	362.14	300.53	183.77	0.092	0.002	-0.009	0.054	-0.014	0.056	-0.005	0.006	0.203	0.004
7.5	57	1.384	10.855	1.368	8.595	-0.016	1.834	0.974	0.025	0.011	0.102	0.002	0.038	-0.009	0.014	0.558	0.007
7.6	223	0.196	0.385	0.327	0.809	0.131	0.060	0.028	0.002	0.027	0.047	0.029	0.050	0.002	0.005	0.689	0.017
7.8	168	0.465	0.509	0.465	0.556	0.000	0.058	0.995	0.050	0.008	0.012	0.007	0.009	-0.002	0.001	0.000*	0.001
7.9	181	0.448	0.545	0.453	0.552	0.004	0.058	0.823	0.010	0.013	0.022	0.010	0.013	-0.003	0.002	0.000*	0.001
7.10	48	-0.756	0.777	-0.686	0.778	0.070	0.159	0.533	0.006	-0.015	0.015	-0.015	0.031	0.000	0.005	0.976	0.050
8.1.a	23	-0.003	0.018	0.005	0.012	0.008	0.005	0.098	0.002	-0.002	0.013	0.003	0.008	0.005	0.003	0.136	0.003
8.1.b	23	-0.002	0.008	0.002	0.005	0.004	0.002	0.025	0.002	-0.002	0.006	0.002	0.004	0.004	0.002	0.028	0.002
8.3	17	2.108	2.844	1.044	2.397	-1.064	0.902	0.300	0.004	0.031	0.060	0.017	0.062	-0.014	0.021	0.574	0.008
8.4	29	0.094	0.671	-0.272	0.443	-0.367	0.149	0.058	0.002	0.034	0.104	-0.038	0.052	-0.072	0.022	0.011	0.002
8.5	30	-0.475	1.580	-0.068	0.502	0.407	0.303	0.222	0.003	-0.044	0.086	-0.010	0.039	0.035	0.017	0.056	0.003
8.8	14	-0.101	0.112	-0.038	0.033	0.064	0.031	0.015	0.001	-0.052	0.022	-0.036	0.021	0.016	0.008	0.039	0.002
8.12	102	-0.403	1.360	-0.448	0.956	-0.045	0.165	0.810	0.008	-0.013	0.095	-0.050	0.071	-0.037	0.012	0.005	0.002
8.14	218	0.725	0.771	-0.201	0.782	-0.927	0.074	0.000*	0.001	0.044	0.035	-0.003	0.040	-0.047	0.004	0.000*	0.001
8.15	216	1.923	2.311	6.423	3.167	4.499	0.267	0.000*	0.001	0.189	0.124	0.183	0.118	-0.006	0.012	0.704	0.025
8.16	209	1.018	1.417	2.687	1.567	1.670	0.146	0.000*	0.001	0.154	0.114	0.140	0.062	-0.014	0.009	0.211	0.004

Note: * indicates significance at α=0.05 after Holm-Bonferroni correction