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Bakalářská práce Analysis of Medial Bias in Reporting of Global Warming and Correlation between Global Warming and Current American Economic System,

Based on Infinite Economic Growth

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Bakalářská práce

Analysis of Medial Bias in Reporting of Global Warming and Correlation between Global Warming and Current American Economic System, Based on Infinite Economic Growth

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1 Introduction

The theme of global warming has been frequently discussed in recent years. Although many scientific researches have been done and hundreds of scientific articles have been written, it is impossible for the scientific community to unify their opinion on global changes of climate. I am going to discuss the theme of global warming in my Bachelor's thesis and I will comment on its causes and consequences as portrayed in media.

At the present time, the issue of global warming includes also influence on money/economy and politics. The most financially supported projects are primarily those which prove negative impact of people on climate development. Of course, the mass media play a major role in influencing people. If they bring negative news, their audience is increasing.

Therefore, another part of my work will be dedicated to medial bias in reporting of global warming. I will compare various articles, especially from American sources, then I will try to summarize their main idea.

In the following chapter, I will attempt to describe correlation between global warming and current American economic system, based on infinite economic growth and what impact of global warming on American economic system would have.

In conclusion, I will summarize all gathered information and attach my own opinion of global warming.

2 Global Warming

2.1 Explanation of the term

In the beginning it is necessary to explain difference between terms *global* warming and *climate change*, because these terms are frequently interchangeably used by the general public.

"Definitions

Global warming: the increase in Earth's average surface temperature due to rising levels of greenhouse gases.

Climate change: a long-term change in the Earth's climate, or of a region on Earth". [1]

In the Oxford English Dictionary the term is explained more in detail:

"Global warming – the gradual increase in the overall temperature of the earth's atmosphere due to increased levels of carbon dioxide and other pollutants." [2]

2.2 Brief history of global warming

Already in ancient times, people have suspected that their activity could change local climate. For example by cutting down forests. But there were larger shifts of climate in the remote past. The discovery of ice ages proved, that climate could radically change, which seemed beyond anything, that human activity would cause. The question remains whether are people responsible for climate change or the Earth is getting warmer spontaneously.

In 1896 Swedish scientist Svante Arrhenius declared, that humanity can raise planet's average temperature by burning fossil fuels, which adds carbon dioxide gas into the Earth's atmosphere. Theory called *greenhouse effect* was disproved.

But in 1930s, people felt, that region of United States and North Atlantic had significantly warmed during previous fifty years. Scientists assumed that it is just a phase of some natural cycle, with unknown causes. However, there was an advocate of *greenhouse warming*, Guy Steward Callendar. He insisted on connection between increasing concentration of the carbon dioxide gas and global temperature. His theory was later entitled *Callendar effect*.

Callendar's claims had provoked several scientists into beginning researches of climate. Studies took ages. Mathematical models of climate, analysing temperatures of previous years, or attempts to forecast weather. With improving technology, they gathered more accurate data, and in late 1960s scientists proved, that average temperatures would rise within the next century. But the next century seemed to be far enough to start any policy action, apart from putting more effort into researches to find out what was happening.

The *global warming* term was for the first time used in the 1975 Science article by Wallace Broecker, geochemist of Columbia University. Earlier studies investigating human impact on climate changes were called *inadvertent climate modification*. It was because although many scientists accepted that human activity could be cause of climate change, they did not know what change to expect. So Broecker's term was ground-breaking. This term became the dominant popular in 1988, when NASA scientist James E. Hansen had testified to Congress about climate. Hansen's testimony was reported in media, and after that use of the term had increased.

Popularity of the term proves the diagram (Picture 1 in Appendices), showing Google searches in the United States from January 2004 to July 2015. Until 2010, *global warming* searches greatly outnumbered searches using the term *climate change*. However, in the present days, searches of these terms had almost equalized.

But temperature change is not the only effect of changing climate. Thus scientific community prefers the term *climate change*, referring to a wider range of phenomena than just increase in temperatures, for example changes to precipitation patterns and sea level.

The theory of global warming turned into a political issue.

In February of 1979 took place the First World Climate Conference. The conference is reckoned as the first significant global recognition of human's role in climate change. The conference followed a series of conferences organised by the United Nations. In 1988 the United Nations and World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to gather available scientific data, to estimate possible impacts, and to propose a global response.

In December of 1997 the Kyoto Protocol was negotiated. The Kyoto Protocol is an agreement under which industrialized countries will reduce their emissions of greenhouse gases. The Kyoto Protocol came into force on the sixteenth of February 2005. Currently, there are 192 parties signed to the protocol, including the European Union, United States of America, Russian Federation, Great Britain and other countries from all around the world.

After losing presidential elections in 2000, Al Gore started a campaign to educate people about the dangers of global warming. In 2007 Gore won the Nobel Peace Prize jointly with the IPCC.

Barack Obama was inaugurated as a president of the United States of America in January 2009. One of his goals is to prevent climate change. He has established a new office in the White House – the White House Office of Energy and Climate Change Policy. On the web page of the White House is stated that:

"The Obama administration is taking action to combat climate change. In June 2013, President Obama outlined the Climate Action Plan— the steps his Administration would take to cut carbon pollution, help prepare the United States

for the impacts of climate change, and continue to lead international efforts to address global climate change. For the sake of our children and future generations, we must act now. And we are". [3]

2.3 Major representatives and opponents of global warming

Climate change has many supporters in all social classes. Between the most renowned propagators belongs for example Naomi Oreskes. Naomi Oreskes is an American historian of science, Professor of the History of Science and Affiliated, Professor of Earth and Planetary Sciences. Professor Oreskes focuses her researches on ecology. She also contributes with her opinions to several publications, for example The Times, The Washington Post, Nature, Science and others. Her 2004 article The Scientific Consensus on Climate Change in the Science magazine brought a deluge of criticism. When Al Gore mentioned article his book An Inconvenient Truth the opinion of her article had changed and Naomi Oreskes had found her advocates.

What is her opinion of the climate change situation?

"Naomi Oreskes says that those fighting action on climate change are not focusing on science, but on economics". ^[4]

Aforementioned Al Gore, former Vice President of the United States, is another well-known defender of climate change. Gore has been involved with environmental matters since 1976, when he has taken up a career as politician. Al Gore during his functioning pushed forward proposals to protect environment. Gore has received a number of awards including the Nobel Peace Prize for informing the world of the dangers posed by climate change, joint with the Intergovernmental Panel on Climate Change, in 2007.

However Gore's involvement in environmental issues has been criticized as well. For example, he was accused of profiting from his advocacy, when supported taxpayer subsidies of green-energy technologies, in which he has a personal investment. He has also been criticized for his above-average energy consumption in owning multiple, large houses, which was reported as using high amounts of electricity, or using private jets.

His opinion of climate change is renowned:

"The warnings about global warming have been extremely clear for a long time. We are facing a global climate crisis. It is deepening. We are entering a period of consequences". [5]

One more politician supporting the theory of climate change caused by human is Hillary Clinton. In her speech to League of Conservation Voters she displayed her opinion clearly:

"The science of climate change is unforgiving, no matter what the deniers may say. Sea levels are rising; ice caps are melting; storms, droughts and wildfires are wreaking havoc. ... If we act decisively now we can still head off the most catastrophic consequences." [6]

Hillary and her husband, former president of the United States, Bill Clinton contend with climate change using their family, Clinton Foundation, which is, besides other issues, concerned about the matter of climate change.

But most of all can be seen protecting the environment so-called *green* celebrities.

It does not matter, if they are driving electric automobiles, attaching solar panels on the roofs of their residences, or donating money to environment protecting organizations, this begs the question: Are they doing it, because they care about climate change, or is it just a manipulation of public opinion?

Czech scientists are also interested in climate change. One of the supporters is Jan Hollan, astronomer and expert on climate change at Global Change Research Institute of Czech Academy of Sciences. During interview for Ekolist.cz, he mentioned that:

"We are on a steep slope and it will be difficult to slow down." [7]

When he referred to the amount of carbon dioxide in the atmosphere.

Unlike supporters, deniers of climate change have got representatives from Czech Republic. Probably the most renowned opponent of global warming is our ex-president, Václav Klaus. He uttered, that:

"Global warming caused by humans is a pointless fiction. It can be assumed, that when the ocean gets warmer, it is going to snow more over the Antarctica and mass of icebergs is going to rise." [8]

Klaus has expressed his disagreement with the global warming theory caused by humans in some of his books, for example "Blue, not green planet" or "What is endangered: climate or freedom?".

Rick Perry is an American politician and the next one on my list of opponent of climate change. This man is a supporter of development of fossil fuels and is cool about environment protection.

"I don't believe that we have the settled science by any sense of the imagination to stop that kind of economic opportunity...Calling CO2 a pollutant is doing a disservice the country, and I believe a disservice to the world," Perry said. [9]

Perry at least has had a few glimmers of environmentalism, especially, when he signed legislation that pointed two billion dollars toward new water infrastructure, water conservation, and helping poor communities with irrigation techniques. But purportedly, he did it only to get a political benefit.

Donald Trump, American real estate mogul, writer, television personality and currently also one of the candidates for the office of the president of the United States. During the presidential debates, some of them on the topic of climate change, Trump has declared, that climate change is a fraud. His personal accounts on social networks are overflowing by comments on this topic as well. I chose this one:

"NBC News just called it 'The Great Freeze' — coldest weather in years. Is our country still spending money on the GLOBAL WARMING HOAX?"

— via Twitter in 2014 [10]

To top it all, Trump thinks, that the theory of global warming was created by Chinese in order to make United States manufacturing non-competitive.

2.4 Probable causes of global warming

Global warming is still considered to be a theory, therefore all of causes and effects stated below are just hypothetical. In a simplified way, there are two popular opinions. That the global warming is caused by a human activity and on the other hand, that the global warming is natural and beyond human possibilities.

At scientific conferences has been the cause of climate change one of main topics for discussion. During these discussions has been presented an argument that majority of scientist agrees with the theory of anthropogenic climate change. In 2009 a student at the University of Illinois Kendall Zimmerman sent a survey to Earth scientists containing two primary questions:

"1. When compared with pre-1800s levels, do you think that mean global temperatures have generally risen, fallen, or remained relatively constant?

2. Do you think human activity is a significant contributing factor in changing mean global temperatures?" [11]

The result of the study was that 97% of the climate scientists, as they identified themselves, answered affirmatively to the second question. In 2013 John Cook, the Climate Communication Fellow at The University of Queensland, in his paper also stated that 97% of scientists agreed with human made global warming. [12]

These claims have not been only presented and used as an argument in debates but also criticized for methodological errors and declared false by the opponents of anthropogenic climate change. Whether it is 97% or not, most of the leading scientific organizations from all over the world belong to the group of scientists, who believe the global warming is caused by human activity. Amongst these organizations are intergovernmental bodies like IPCC or World Meteorological Organization (WMO), governmental agencies, but also academies of sciences – in 2005 representatives from eleven international academies signed joint statement about climate change and necessity to reduce causes of global warming –and, of course, scientific societies, for example American Physical Society and American Meteorological Society. [13]

The leading among environmentalists and most commonly used by the general public cause is increasing concentration of the carbon dioxide in the Earth's atmosphere. This gas comes from various sources, natural and man-made. CO_2 has been naturally entering the atmosphere for millions of years. Animals release carbon dioxide in the process of breathing. Plants are both sources, because of respiration, and absorbers, because of photosynthesis. When plants and animals die, they begin to putrefy. During this process, CO_2 arises as well. There are bigger natural sources of the gas, for example volcanoes. When volcanoes are erupting, solid and gaseous emissions, including carbon dioxide, are produced. The oceans are the largest CO_2 producers. However processes taking place in the oceans are also absorbing carbon dioxide.

Since the Industrial Revolution human activities have an effect on the flow of CO2. People started to burn fossil fuels at those times. Fossil fuels contain high percentage of carbon. The fuels include coal, petroleum, natural gas and obviously products made of these raw materials. Fossil fuels are frequently used these days, for example power plants are propelled by burning coal or burning gasoline for transportation.

Another problem increasing concentration of CO2 is the deforestation. Destruction of forests and rainforests affects the CO2 balance even in two ways. Firstly the burning releases CO2 into the atmosphere and secondly the number of trees removing CO2 by photosynthesis is reduced.

Development of agriculture also influences the environment. As the population growths so growths people's total consumption. It leads to plundering a nature to gain room for fields and cow houses. Both of those constructions are sources of an environmental issue. Crops on the fields are commonly supported to grow by chemical fertilizers. I think there is no need to explain, that it is not environmentally friendly.

Regarding the cow houses, there is being made another greenhouse gas – methane. The process takes place in the intestines of herbivorous animals. With the increase of the amount of concentrated livestock, the level of methane released into the atmosphere is increasing too.

But according to anthropogenic global warming sceptics, the climate is changing naturally and it has nothing to do with amount of CO2 in the atmosphere. There are certain occurrences in the history that support their statement. They refer

to warming in the twentieth century, when the warming became during industrially insignificant period (around 1910) and from 1940 – during Post War Economic Boom – temperatures fell, which does not correspond with the theory. Another event which sceptics mention is The Little Ice Age. It was a period of cooling of the Northern Hemisphere that according to NASA took place from sixteenth to nineteenth century. The Little Ice Age occurred after the Medieval Warm Period lasting from about 950 to 1250 and the Holocene Climate Optimum, another warm period about 6000 years ago. These events show that climate is changing in natural cycles.

The anthropogenic global warming sceptics attribute these events as well as the present climate changes to different causes. They think that the climate is influenced by the solar activity. Piers Richard Corbyn, the owner of the WeatherAction — company working at long range weather and climate forecasting, advocate this theory. His researches had shown close relationship between solar activity and temperature changes in the history.

In a way it is not surprising, the sun affects us directly when it sends to us the heat. Connected with influence of the sun are clouds that have powerful cooling effect. In the early twentieth century scientists discovered, that clouds are formed when water vapour rising up from the sea meets particles known as cosmic rays that penetrate the Earth's atmosphere. But when the sun is more active, a phenomenon known as the solar wind is stronger therefore fewer cosmic rays get through the atmosphere and fewer clouds are formed. [14]

There is another natural occurrence in the past that has changed the Earth's climate. It is shifts in the Earth's orbit. According to NASA:

"Three variables of the Earth's orbit—eccentricity, obliquity, and precession—affect global climate. Changes in eccentricity (the amount the orbit diverges from a perfect circle) vary the distance of Earth from the Sun. Changes in obliquity (tilt of Earth's axis) vary the strength of the seasons. Precession (wobble in Earth's axis) varies the timing of the seasons". [15]

Climate changes caused by these variations in the Earth's orbit are named Milankovitch cycles after Milutin Milankovitch (1879-1958) – a Serbian astrophysicist who developed this theory relating Earth motions and long-term climate changes.

2.5 Anticipated consequences of global warming

Scientists cannot agree even on the effects of the global warming, no matter what the cause is. One side predicts that global warming will have catastrophic impact on our planet, the other side claims that life on Earth had survived even more dramatic changes of climate.

The most obvious effect of global warming is the increase in average temperatures. According to National Oceanic and Atmospheric Administration (NOAA) the average global temperature has risen by 0.8 degrees Celsius over the past 100 years. Further they add that since 2000 we have experienced nine of the warmest years on record.

But in some areas people has been experiencing colder than normal winters. Some climatologists claim that it is also effect of global warming. How? Climate change can allegedly cause the jet stream to move south and bring with it cold, Arctic air.

But there are other extreme weather occurrences that may be caused by global warming. For example hurricanes may be more intense.

"And even if they become less frequent globally, hurricanes could still become more frequent in some particular areas," said atmospheric scientist Adam Sobel, author of "Storm Surge: Hurricane Sandy, Our Changing Climate, and Extreme Weather of the Past and Future" (HarperWave, 2014). "Additionally, scientists are confident that hurricanes will become more intense due to climate change." This is because hurricanes get their energy from the temperature difference between the warm tropical ocean and the cold upper atmosphere. Global warming increases that temperature difference... [16]

Scientists also forecast heat waves, droughts, floods, wildfires, blizzards and rainstorms will occur more often and more intensively, according to computer models of the climate.

The next effect of global warming is also obvious. It is melting of ice caps and mountain glaciers. According to NASA, Greenland and Antarctica contain about 75% of the world's fresh water, which can dramatically raise the sea level. It would be a tragedy for low-lying coastal states all around the world. But in the documentary film

"The Great Global Warming Swindle" professor Syun-Ichi Akasofu, the founding director of International Arctic Research Center (IARC) of the University of Alaska Fairbanks, stated that ice caps are naturally expanding and contracting. This phenomenon is new for us, because we had not satellites. So the fragments of ice floating on the sea showed by media is happening all the time.

Global warming poses another threat – extinction of species. Experts predict that if the warming trend will continue at its current rate, many species will not be able to migrate or adjust to climate change and it will lead to their extinction. For example corals are extremely sensitive organisms. Increasing of sea temperature make coral reefs to bleach and die. The most vulnerable are plants, amphibians, reptiles, birds and insects, but predators like polar bears are suffering as well. In media you could have read articles about drowned polar bears that had to swim for miles because they could not find any iceberg they use to rest on. Animals and plants are already moving from their native habitats because of rising temperatures. They are moving northward or to higher altitudes according to National Academy of Sciences and researches at the State University of New York. Evidence of the migration is the grizzly-polar bear hybrid also known as the pizzly bear. Theory suggests that due to climate changes polar bears moved southward and grizzly bears moved northward thus their migration routes crossed each other and it led to inception of the pizzly bear.

Climate change may also have impact on human health. According to Centers for Disease Control and Prevention (CDC), global warming is increasing number of people at risk of heat-related death. It concerns primarily old people and young children, but also people living in urban areas, where the urban heat island effect exacerbates the effects of high temperatures. Warmer temperatures would expand the range of many disease-causing pathogens and insects too. IPCC claims that increased temperature will tend to expand the geographic range of malaria transmission to higher altitudes as well as many other vector-borne infections (such as dengue fever, Lyme disease, encephalitis and other 'usually' tropical and subtropical diseases). But again, there are people who do not agree with IPCC like a professor Paul Reiter, medical entomologist at the Pasteur Institute in Paris and member of the World Health Organization. He stated that mosquitos are more resistant and can survive in a cold environment. [17]

"In fact, the most catastrophic epidemic on record anywhere in the world occurred in the Soviet Union in the 1920s, with a peak incidence of 13 million cases per year, and 600,000 deaths." [18]

3. Media and Global Warming

The mass media are significant mediators of a communication amongst scientists, politicians and the public. Many studies proved that mass media are the main source of information about climate changes for the public. Considering the complexity of climate science and economic stakes of publishers, it is relatively difficult to inform general public about climate changes including all important connections both objectively and in an interesting way.

The same piece of information does not impress everybody in a same way. Many researches have been done to examine connection between form of a message and effect on recipient. For example Jon Krosnick, professor of political science, communication and psychology at Stanford University, and his colleagues gathered from their research that it is necessary to consider individuality of each viewer, listener and reader. They found out that people who do not have confidence in scientists are not influenced by their statements about climate changes. Adam Corner, the Research Director for the Climate Outreach & Information Network (COIN), an Honorary Research Fellow in the School of Psychology at Cardiff University and a climate change freelancer for the Guardian, and his co-workers made another experiment. The experiment was based on two different articles about climate change – one of them supported anthropogenic causes of climate changes, the other one did not. The experiment proved that readers more sceptical to climate changes perceived these articles in a different way than non-sceptical readers.

3.1 History of Global Warming in an American Press

As I already mentioned, in the end of nineteenth century climate scientists started to research changes of climate and its causes. At the same time journalists started to write about these researches and changes. As the scientists changed their opinion so the journalists kept changing message of their articles.

In 1895 New York Times published an article headlined: *PROSPECTS OF ANOTHER GLACIAL PERIOD - Geologists Think the World May Be Frozen Up Again.*, but only seven years later, in 1902, Los Angeles Times released a story with opposite prediction, the title said:

"Disappearing Glaciers...deteriorating slowly, with a persistency that means their final annihilation...scientific fact...surely disappearing." This article was followed by thirty years of reporting about upcoming new ice age. During this period journalists wrote about glaciers advancing southward and other signs of a new ice age. [19], [20]

At the turn of the 1920s and 1930s journalists made a turn to the global warming. It had suggested itself, because people began to feel it is getting warmer. This trend continued for over another thirty years. One of the articles published by Washington Post in 1939 stated that:

"Gaffers who claim that winters were harder when they were boys are quite right... weather men have no doubt that the world at least for the time being is growing warmer" [21]

Another turn took place in 1970s when journalists had put global warming on the shelf and had settled down to a global cooling again. At that time scientists recorded lower temperatures than before. But Americans worried more about Cold War and threat of a nuclear war than new ice age.

Aforementioned Broecker's article and John Hansen's testimony influenced reporting about climate changes in the 1980s. Journalists and scientists changed their opinion again, so people read about global warming. Stephan Schneider, lead author of the IPCC explained to Discover magazine in 1988 that:

"On the one hand, as scientists we are ethically bound to the scientific method, in effect promising to tell the truth, the whole truth, and nothing but – which means that we must include all doubts, the caveats, the ifs, ands and buts. On the other hand, we are not just scientists but human beings as well. And like most people we'd like to see the world a better place, which in this context translates into our working to reduce the risk of potentially disastrous climate change. To do that we need to get some broad based support, to capture the public's imagination. That, of course, means getting loads of media coverage. So we have to offer up scary scenarios, make simplified, dramatic statements, and make little mention of any doubts we might have. This "double ethical bind" we frequently find ourselves in cannot be solved by any formula. Each of us has to decide what the right balance is between being effective and being honest. I hope that means being both." [22]

Since 1980s in the press appeared articles about global warming issue mostly.

Political movement of global warming also influenced the press and other media. Margaret Thatcher was the Prime Minister of the United Kingdom of Great Britain and Northern Ireland and the Leader of the Conservative Party from 1975 to 1990. She was also the first world leader that warned about impacts of global warming and need for nations to joint together. She did so in 1989 during a speech to the United Nations General Assembly. Mrs Thatcher contributed to the founding of the IPCC and creation of the Environmental Protection Act in 1990. However later she became sceptical about climate change policy. [23]

In her latest book *Statecraft* published in 2003 she devoted one chapter, headed *Hot Air and Global Warming*, to reappraisal of her earlier opinions related to climate change. ^[24]

3.2 Current Reporting of Global Warming in the United States

Probably the biggest boom in media caused already mentioned Al Gore with his documentary film and book with the same title: An Inconvenient Truth. His documentary film won an Academy Award and after acceptance of the Nobel Peace Prize in 2007 news about climate change gone ballistic.

(Picture 2 in Appendices)

This extensive media coverage of climate change lasted to 2010. During this period journalists published the most articles about global warming or climate change.

Then, for a few years interest in climate change was on decline. Another event that has brought attention of media, and public as well was speech of Pope Francis dedicated to this issue. He showed of support for president Obama's plan to cut carbon emissions. Then took place 2015 United Nation Climate Change Conference which was held in Paris, France. Main point of the conference was negotiation of a new global agreement to reduce climate change by cutting down emissions of carbon dioxide.

The interest in the topic of global warming and climate change has risen again.

The topic of climate change caught attention not only in the press. It found its place in the television broadcast too. The issue of global warming was not mentioned only in the nightly news, about global warming have been made a lot of documentary movies and also series. The issue was several times discussed even during the Sunday shows.

(Picture 3 in Appendices)

The topic of climate change and global warming has made it in the radio broadcast too, of course. Several radio stations in the United States established new sections dedicated to this topic. For example Minnesota Public Radio (MPR) has broadcasted a weekly *Climate Cast* and made the recordings accessible on their website. Some radios were even created to share their opinion of the climate change issue. To these radios belongs for example *Climate Radio*. Recording of their broadcast can be accessed on the internet as well.

But what information have media given to public?

In media reporters superficially presented both points of view on human-caused climate change. In a study named *Balance as Bias* Boykoff brothers said:

"Despite the highly regarded IPCC's consistent assertions that global warming is a serious problem with a "discernible" human component that must be addressed immediately, balanced reporting has allowed a small group of global warming skeptics to have their views amplified." [25]

In media has always dominated an opinion that global warming is caused by human activity. Media are influenced by many factors. For example there is a big political leverage. Politicians usually require yes/no answers, but as have been mentioned the climate science is complex and filled with uncertainties. This is why have many scientists been polarized. As time passed, one group of scientists have been more and more confident of human impact on the climate, the other group believe that climate change is caused by natural occurrences. Both sides have made researches and both sides have presented their results in media. It might be difficult to orientate in all the data and charts they are showing. Probably the most influential is the IPCC. They are considered as the leading international organization in researching climate change. Results of the IPCC are often presented in media. According to study of William Freudenburg from 2010:

"Mass media in the U.S. continue to suggest that scientific consensus estimates of global climate disruption, such as those from the Intergovernmental Panel on Climate Change (IPCC), are 'exaggerated' and overly pessimistic."

(Picture 4 in Appendices)

But only a small part of news is presented by scientists. So in media have also appeared scientifically unsupported statements. Journalists used to attribute every extreme weather occurrence like hurricanes, storms, droughts, etc. to the global warming without presenting any irrefutable evidence. Articles with catastrophic scenarios are also very common. News about extinction of polar bears and flooded cities are all over the internet. Nigel Calder was a British science writer and editor of The New Scientist. According to him journalists have to dramatize everything to impress. He belonged to the group of anthropogenic climate change sceptics. He said:

"Governments are trying to achieve unanimity by stifling any scientist who disagrees. Einstein could not have got funding under the present system." [26]

There is another category of news about climate change – scandals. In media appeared for example The Climatic Research Unit email controversy also known as *Climategate*. Climategate began in 2009 when an anonymous attacker hacked a server at the Climatic Research Unit at the University of East Anglia and copied thousands of emails and internal documents to show alleged data manipulation. This attempt was not successful. [27]

More scandals happened when several scientists resigned from scientific organizations due to corruption and declared that global warming is a fraud. One of them was Harold Lewis. He was a Professor of Physics at the University of California in Santa Barbara. He published his letter of resignation from the American Physical Society to Curtis Callan Jr., President of APS, in which Lewis stated that:

"It is of course, the global warming scam, with the (literally) trillions of dollars driving it, that has corrupted so many scientists, and has carried APS before it like a rogue wave. It is the greatest and most successful pseudoscientific fraud I have seen in my long life as a physicist. Anyone who has the faintest doubt that this is so should force himself to read the ClimateGate documents, which lay it bare. (Montford's book organizes the facts very well.) I don't believe that any real physicist, nay scientist, can read that stuff without revulsion. I would almost make that revulsion a definition of the word scientist." [28]

Media are very powerful these days and it is easy to influence and control opinions of a whole society through them. According to Business Insider in 2011 was 90% of American media owned just by six corporations. These are following: GE, News Corp., Disney, Viacom, Time Warner and CBS. For comparison, in 1983 the same percentage of media was owned by fifty companies. [29]

It means that these 6 corporations control most of information which Americans read in newspapers, hear on radio and see on television. On the Picture 5 (see in appendices) are some of the media companies that those corporations own, or at least owned in 2011.

GE owns among others Comcast which is the biggest international mass media company and NBC. News Corp. possesses the television station Fox, Wall Street Journal and New York Post. Disney is an owner of ABC broadcasting company and television station ESPN. Viacom owns for example Paramount Pictures and MTV,

Time Warner possesses television company CNN and television station HBO. And finally, CBS owns beside others television network Showtime. [30]

It follows that American media are significantly influenced by these giant corporation and what they consider suitable for publishing.

3.3 Global Warming in Czech Media

The topic of global warming and climate change in Czech media as Jan Vávra and his colleagues mentioned in their study, passed through several phases. The analysis involved Czech media coverage of climate change from 1996 to 2005 and was divided as follows:

- 1st phase (1996 1999) so called *anchoring* a period of expert articles about an existence of climate change and its effects,
- 2^{nd} phase (1997 2000) specialization at that time started to appear sceptical articles and there were also more debates about economic and political impacts,
- 3^{rd} phase (1999 2002) *routinization* historical connections began to appear and media started to discuss alternative energy sources and "political and lobby interests standing behind"
- 4th phase (2001 2003) a period of *crisis* by then in media was presented a possibility of worse consequences of global warming and climate change was shown as a problem of great complexity. On the other hand, even doubts that climate change is caused by human activity were getting stronger,
- 5^{th} phase (2003 2005) self-fulfilment at this period climate change was understood as a real phenomenon and also it was connected with particular natural occurrences.

Another analysis of Czech media made in 2007 discovered that articles are more focused on politicians and their opinions of climate change and that the most quoted person is a former president of the Czech Republic Václav Klaus, who is also the most frequently connected person with global warming in the Czech press, followed by Al Gore and George Bush. In 2007 the highest number of articles about climate change published a daily *Právo*, but more space was provided by way of more detailed articles in *Hospodářské noviny*.

After 2009 the number of articles and interest in global warming decreased.

(Picture 6 in Appendices)

Research of the Czech press from 1997 to 2010 proved that popular articles outnumber the scientific ones and that articles approaching to the natural issue outnumber the social issue articles. The sensational and catastrophic articles were the most common in Czech newspapers. Regarding the geographical orientation domestic and foreign articles are represented equally in the Czech press. [31]

(Picture 7 in Appendices)

3.4 Global Warming in Popular Culture

Climate change and its possible catastrophic impacts inspired movie-makers. One of the first movies with this topic is 1995 *Waterworld*. The movie is a post-apocalyptic adventure in which is the future Earth due to melting ice caps flooded. The melting is caused by hundreds of years of global warming. [32]

Next movie inspired by global warming is 2004 *The Day After Tomorrow*. This catastrophic sci-fi movie show rapid changes of weather all over the world caused by great global change. ^[33]

The latest movie containing the topic of climate change is 2015 *Mad Max: Fury Road*. The movie is made by George Miller who was an environmental activist.

"In *Fury Road*, he has created a film that envisions a near-future world ravaged by drought and extreme weather events. From the beginning of production, Miller instructed his crew to imagine that "all the worst-case scenarios you read in the news have come to pass." [34]

Global warming has also appeared in the television series. Very often there are environmental characters or a story of an episode is environmentally-based. In the *How I Met Your Mother* series, one of the main characters is an environmental lawyer, in the *Modern Family* series too. Even in animated comedy series appeared the topic of climate change. For example in 2002 in the *Futurama* series when:

"Planet Express is hired to scoop a slab of ice from Halley's Comet and drop it in the ocean to combat global warming. But when they find the comet all out of ice, the inventor of the environment, Al Gore, holds a Global Warming convention. There Professor Farnsworth reluctantly admits the process was sped up by the pollution

emissions of all robots. This leads President Nixon's head to invite all of Earth's robots to the Galapagos Islands for a big party (during which they will be destroyed)." [35]

In the second television creation of a cartoonist Matt Groening *The Simpsons* have been mentioned global warming as well. "True to Groening's intention, the show has frequently used biting satire to examine societal problems, including climate change. Its characters visit the rapidly melting Springfield Glacier, deliver chilling proclamations about rising temperatures and flooding lowlands, and speculate that global warming concerns are baseless." [36]

Climate change has appeared in music too, of course. Besides other artists these musicians included this topic in their songs: Neil Young, REM, Ozzy Osborne, Michael Jackson, Bob Dylan, Miley Cyrus or Johnny Cash.

4 Global Warming and Current American Economic System

4.1 Current American Economic System

The economy of the United States of America is the strongest national economy in the world. The US economy is a *mixed economy*. The Oxford English Dictionary explains the term like: "mixed economy is an economic system combining private and state enterprise" Private enterprise is a basis of the market economic system. In the United States it works like: "The United States has a market economy in which individual producers and consumers determine the kinds of goods and services produced and the prices of those products." In market economy the government is not much influential. That is the reason why the US has mixed economy – in this economy the government plays a big role. The government:

- "provides services and goods that the market cannot provide effectively, such as national defense, assistance programs for low-insome families, and interstate highways and airports"
- "provides incentives to encourage the production and consumption of certain types of products, and discourage the production and consumption of others"
- "sets general guidelines for doing business and makes policy decisions that affect economy as a whole"
- "establishes safety guidelines that regulate consumer product, working conditions, and environmental protection" [37], [38]

The economy of the United States is based on infinite growth. This growth can be observed on the American Gross Domestic Product (GDP) which is:

"The broadest quantitative measure of a nation's total economic activity. More specifically, GDP represents the monetary value of all goods and services produced within a nation's geographic borders over a specified period of time." [39]

The infinite growth is demonstrated on the graph on Picture 8 in Appendices.

4.2 Effects of Global Warming on Economy

This economic growth is under threat of climate change. According to Robert E. Rubin, American lawyer and former United States Secretary of the Treasury, ignoring climate change might ruin the American economy. During an interview for the Washington Post in 2014 he said:

"The cost of inaction over the long term is far greater than the cost of action." [40]

The economy might face several threats, for example worsened agricultural conditions or decreasing labour productivity, because: "dramatically rising temperatures in much of the country will make it far too hot for people to work outside during parts of the day for several months each year" Another threat pose intensive superstorms and hurricanes which cause serious losses. He says that Hurricane Katrina and Hurricane Sandy caused losses to the extent of 193 billion dollars. ^[41]

Because preventing global crisis costs something, to cover these costs he recommends to:

"Raise taxes; or significantly cut spending on defense, our social safety net, and public investment including infrastructure, education and basic research." In the end of the interview he spoke to reader's souls:

"We do not face a choice between protecting our environment or protecting our economy. We face a choice between protecting our economy by protecting our environment — or allowing environmental havoc to create economic havoc." [42]

The Union of Concerned Scientists (UCS) agrees with Robert Rubin's opinion. Besides that, according to them, climate change may cause mass migration – increase number of so called *climate refugees* because of disasters on their territories.

A study carried out by *Risky Business* about influence of climate change on economy, shows that there are more threats. According to them global warming may increase energy expenses. Due to higher temperatures it is expected that people will be spending more energy on air-conditioning. Besides other things, rising temperature might lead to increase in number of committed crimes in the USA. In the study they stated:

"A growing body of rigorous quantitative research across multiple disciplines has found that weather, and in particular temperature, affects the incidence of most types of violent and non-violent crime in American cities and rural areas alike" [43]

Already mentioned heat-related mortality might affect economy as well. In economic terms the probable costs of those deaths could reach 710 dollars per person each year by the end of the century. The southern states would suffer the most, of course. [44]

In a book *Co nesmite vědět!* written by Michael Morris, he says that the real threat is not a global warming, but the effort of a few families to rule the world. He specifically has in mind the Rockefeller, the Rothschild, the Gates, the Clinton and the Gore families. According to Morris they are financed by public funds of IPCC – "organization in support of lies about climate." Michael Morris claims that whole global warming is only a fiction and lies about CO2 whose meaning is "an effort to launch world taxes, to enslave mankind in a faster and more effective way and to grant power to a new world rule." [45], [46]

Morris bear his statements out by the letter of Harold Lewis mentioned in the previous chapter. In the letter Harold Lewis mentioned that global warming is a scam and that scientists employed in big international organizations like APS and IPCC are corrupted. He also recommended to read the Climategate documents in the letter which he used to resign from APS after 67 years of service. According to him, the documents prove that scientist at the University of East Anglia falsified data and used tricks to make the climate change look like caused by human activity. Even the Director of the University admitted publicly that data were manipulated with. "He conceded that there is no global warming, but on the contrary, the Earth is getting colder." [47]

4.3 Funding of Global Warming

Researches of climate and fighting global warming as well are extremely costly. It is invested more than 300 billion American dollars every year into this sphere. Where do scientists, governments and organizations have their money from?

According to a study *The Global Landscape of Climate Finance* made by Climate Policy Initiative, in 2014 have been spent 391 billion dollars into climate

actions to reduce or protect from climate change. The money has been invested from both sectors public and private. From the public sector has been contributed 38% of total investment or 148 billion dollars. Major public investors are Development Finance Institutions (DFIs) – 88% of public sector total, Governments and their agencies – 10% and Climate Funds – 1%. The private sector contributed to the total investment by the sum of 243 billion dollars, which is remaining 62% of the total 391 billion. Major private investors are Project Developers – 38% of private sector total, Corporate Actors – 24%, Commercial Financial Institutions – 19%, Households – 18% and Private Equity, Venture Capital and Infrastructure Funds – 1%. [48]

Climate change researches are primarily paid by governments and intergovernmental organizations. For example IPPC is funded by United Nations Environment Programme (UNEP), the World Meteorological Organization and its member countries through the IPCC Trust Fund. [49]

The source of funding is dependent on the organization that conducts the research. Academies and universities are subsidized by governments and then there are of course also private organizations researching the climate.

Most of the world countries or rather governments agree with the theory of manmade global warming and are taking actions to prevent climate change, but sometimes they act in the name of climate change in an improper way. In many countries, for example in the United Kingdom of Great Britain and Northern Ireland, United States of America, Canada, India, Czech Republic and many more, governments subsidize electric cars, but the truth is that during the production of an electric vehicle and its recharging is produced a huge amount of CO2 emissions. In the outcome electric cars offer no savings in energy or emissions in comparison with combustion vehicles. The biggest problem with the electric cars is their batteries. They contain acids and other chemicals that are not really environmentally friendly and are very difficult to recycle. Simply, the technology is not advanced enough yet. [50]

Anthropogenic global warming sceptics need funding as well. There are working several global warming sceptic organizations in the United States. Their main goal is to cast doubts upon the facts about global warming presented by the majority of scientists confirming anthropogenic climate change. These organizations are frequently funded by the fossil fuel industry. In this respect, probably the most active

and significant are the fossil fuel billionaires Koch brothers. The Koch Industries has been established by Fred C. Koch when he founded oil refinery firm that later became known under this name. The industrial conglomerate is now headed by two of his four sons – Charles G. Koch and David H. Koch. Koch brothers have funded through their Koch foundation a range of these sceptic organizations and a few of them they established. They established for example organization called Americans for Prosperity (AFP) or co-founded Cato Institute. These organizations are active in more sectors than climate change. Koch brothers have invested into these organizations denying manmade global warming: American Enterprise Institute (AEI), American Legislative Exchange Council (ALEC), Competitive Enterprise Institute, Heritage Foundation and others. They have donated millions of dollars to these organizations. [51], [52]

There is one more infamous donor of global warming sceptics. It is the ExxonMobil. The ExxonMobil is one of the largest multinational oil and gas corporations. They have been accused of bribing members of the American Congress and giving money to lobbying groups that deny climate change. All of that happened years after they promised that they will stop funding climate change denial. The ExxonMobil has also funded several of the above mentioned organizations. ^[53]

As has been already indicated, it is the money what runs debates over climate changes. Some global warming activists and a study of an environmental sociologist Robert Brulle from the Drexel University claim that a large amount of money flows through third-party, making the money untraceable. These funds are called Dark money and allegedly they give an unfair advantage in a debate over global warming.

"In the end, Brulle concluded public records identify only a fraction of the hundreds of millions of dollars supporting climate denial efforts. Some 75 percent of the income of those organizations, he said, comes via unidentifiable sources." [54]

But according to James Taylor and his article on the Forbes website, Brulle's paper is unsubstantiated, and furthermore he claims that:

"The undeniable truth is global warming alarmists raise and spend far more money – including far more untraceable special interest "dark money" – than global warming skeptics." [55]

He also pointed out that in media appeared articles about the dark money funding shortly after publishing of the paper. Taylor highlighted Suzanne Goldenberg,

who writes for the UK Guardian. In her article, she claimed, that sceptics spent 1 billion dollars to deny science, although in Brulle's paper figures a sum of 900 million dollars. It makes difference of 100 million dollars. According to Taylor to oppose global warming activism was spent "only" 46 million dollars out of the 900 million. In comparison with billions of dollars raised and spent by environmental groups it is a drop in the ocean. ^[56]

5. Conclusion

In my opinion I achieved all the goals of the thesis. I explained the prime terms of the climate change issue. A part of the thesis I dedicated to a history of climate science and development in observing of global warming. I also looked up probable causes and anticipated effects of the global warming on our environment as they are described in media. I mentioned in the thesis also some of the organizations and people associated with the climate change issue.

The next chapter I devoted to connection between media and global warming. In the beginning I described a brief history of the reporting about global warming in the American press, when journalists kept switching between news about global warming and new ice age. Then I proceeded to current reporting about this topic. Nowadays the question is, if the global warming is caused by human activity or if it is a natural occurrence. Despite the fact that majority of scientists believe that climate change is an effect of accumulating carbon dioxide in the Earth's atmosphere, there are still groups of people claiming the opposite. I described the kinds of news that appear the most in media and gave a few examples of them. In another part of this chapter I briefly described Czech media coverage of climate change according to a study of Jan Vávra. Global warming has been so much discussed that the topic made it to the popular culture. This is content of another subchapter. I mentioned several movies and television programmes, where appeared the issue of climate change.

The last chapter I dedicated to correlation between global warming and current American economic system. I started with characterization of the system. Then I continued with effects of global warming on the economy according to theories of economists and scientists. The end of this chapter and my thesis is dedicated to finance sources of the both sides – believers in anthropogenic global warming and sceptics.

In my opinion, the issue of global warming is in media frequently exaggerated. The news do not seem to me like objective, often they are accompanied by misleading photographs which are not directly connected to the topic. I found it quite difficult to orientate in the data and information. I consider myself neither sceptic nor "believer". I think that global warming is not caused only by human activity. In my opinion the climate is changing naturally, but the carbon dioxide in the atmosphere intensifies

or accelerates the effect. I doubt that if we stop release the carbon dioxide absolutely, the climate would stop warming. It is important to care about the environment, but there are more problems and pollutants to take care of than carbon dioxide.

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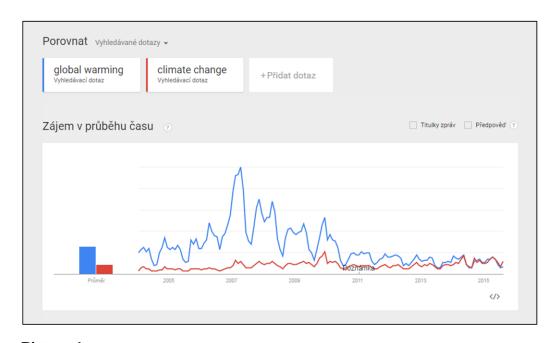
8. Abstract

The Bachelor thesis explains the topic of global warming and its possible causes and consequences. Also in more detail describes effects of global warming on the American economic system. In the thesis are mentioned eminent organizations and personages dealing with the issue. A part of the thesis deals with analysis of Czech and American media – specifically the way of informing of the general public and how are media influenced.

9. Resumé

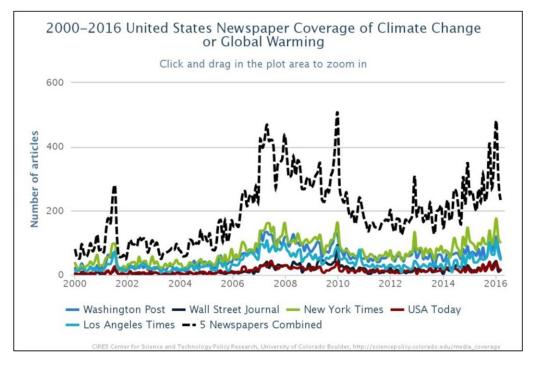
Tato bakalářská práce vysvětluje téma globálního oteplování i jeho možné příčiny a následky. Dále také podrobněji popisuje dopady globálního oteplování na americký ekonomický systém. V práci jsou zmíněny významné organizace a osobnosti zabývající se touto problematikou. Část práce je věnována analýze českých a amerických médií – konkrétně tomu, jakým způsobem předávají informace široké veřejnosti, a čím jsou ovlivňována.

10. Appendices



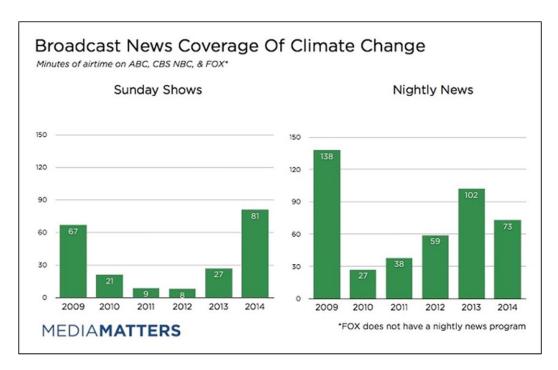
Picture 1

Google Trends. [online]. [cit. 2016-03-20]. Dostupné z: www.google.com/trends



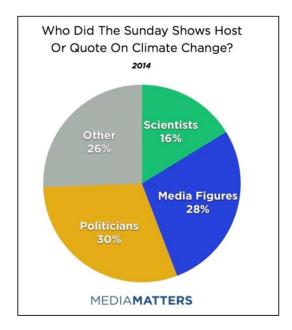
Picture 2

ICE CaPs. *CIRES*: Center for science and technology policy research. [online]. [cit. 2016-04-20]. Dostupné z: http://sciencepolicy.colorado.edu/icecaps/research/media_coverage/usa/index.html



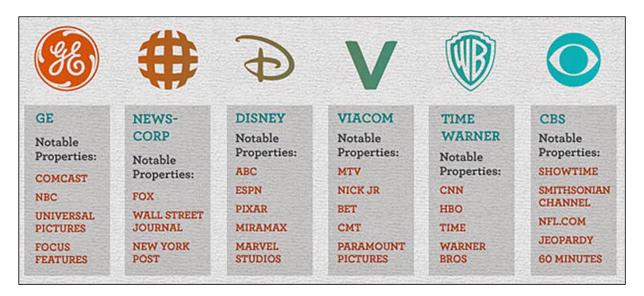
Picture 3

KEVIN KALHOEFER. STUDY: How Broadcast Networks Covered Climate Change In 2014. Media *Matters*: For America. [online]. 28.01.2015 [cit. 2016-03-20]. Dostupné z: http://mediamatters.org/research/2015/01/28/study-how-broadcast-networks-covered-climate-ch/202232



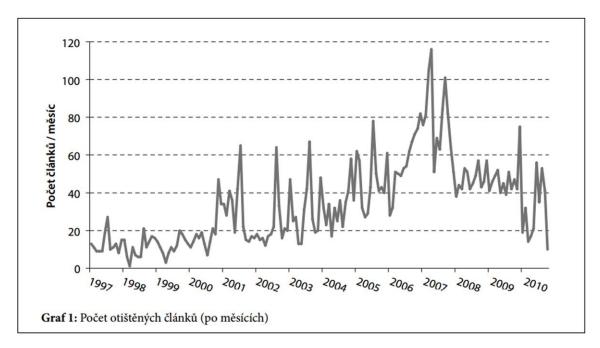
Picture 4

KEVIN KALHOEFER. STUDY: How Broadcast Networks Covered Climate Change In 2014. Media Matters: For *America*. [online]. 28.01.2015 [cit. 2016-03-20]. Dostupné z: http://mediamatters.org/research/2015/01/28/study-how-broadcast-networks-covered-climate-ch/202232



Picture 5

These 6 Corporations Control 90% Of The Media In America. *Business Insider*. [online]. 14.06.2012 [cit. 1970-01-01]. Dostupné z:http://www.businessinsider.com/these-6-corporations-control-90-of-the-media-in-america-2012-6



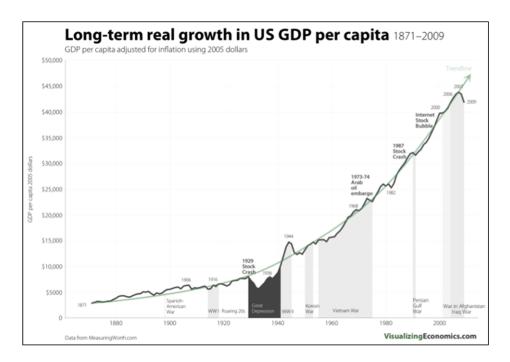
Picture 6

VÁVRA, Jan et al. Obraz změn klimatu v českých denících v letech 1997-2010. In: Naše společná přítomnost II. Praha: Karolinum, 2014, pg. 22

Rok Celkový počet článků		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010*	Celke
		154	131	142	232	349	272	378	391	563	673	943	567	569	299	5663
	1															
Komplexnost (%)	Katastrofické	20	31	30	38	49	43	43	44	39	43	43	41	45	42	42
	Senzační	34	40	39	46	41	42	42	45	47	45	46	43	38	45	43
	Bulvární	8	8	9	6	4	5	5	5	3	3	3	3	4	3	4
	Seriózní	38	21	22	10	6	10	11	6	11	10	8	13	12	10	1
	•															
Odbornost (%)	Vědecké	32	25	43	35	40	31	38	36	36	34	36	38	39	34	30
	Populámí	68	75	57	65	60	69	62	64	64	66	64	62	61	66	64
Problematika (%)	Sociální	35	40	43	36	45	64	55	49	48	45	42	43	42	42	45
	Přírodní	55	52	51	59	52	33	42	47	51	54	55	54	56	56	52
	Jiné	10	8	6	5	3	3	3	4	1	1	2	2	2	1	**
Geografie (%)	Domácí	40	50	56	61	52	53	54	49	52	52	45	52	45	58	50
	Zahraniční	60	50	44	39	48	47	46	51	48	48	55	48	55	42	50

Picture 7

VÁVRA, Jan et al. Obraz změn klimatu v českých denících v letech 1997-2010. In: Naše společná přítomnost II. Praha: Karolinum, 2014, pg. 30



Picture 8

Roger Pielke Jr. Is Economic Growth Coming to an End?. The Breakthrough. [online]. 26.09.2012 [cit. 2016-03-20]. Dostupné z:http://thebreakthrough.org/index.php/voices/roger-pielke-jr/is-economic-growth-coming-to-an-end/