
The North Is Coming: Could A Reunification Spark Growth for The Korean Economy?

Stephen P. Wagner

Faculty Sponsor: Dr. John A. Tures

Program: Political Science

North Korea's Kim Jong-un has recently made an effort to shake hands with President Donald J. Trump and South Korea's President, Moon Jae-in. For its two biggest rivals, this was the first-ever meeting between leaders of United States and North Korea; also, South and North Korea met for the first time since the Korean War ended in 1953.

This paper will examine whether North Korea could unify peacefully or conflict with its neighbor South Korea. In more detail, it will measure different cases of countries that have unified peacefully or with war. The paper will determine whether (GDP) growth is positively identified before and after unification between both peaceful and conflict cases.

Literature Review

Rug.nl, *The Groningen Growth and Development Centre (GGDC)*, presents us with the data for my cases that we are examining. The Groningen Growth and Development Centre writes, "The GGDC provides unique information on comparative trends in the world economy in the form of easily accessible datasets, along with comprehensive documentation. These data are made publicly available, which enables researchers and policy makers from all over the world to analyze productivity, structural change, and economic growth in detail" (2017, Par. 2). The database in the (GGDC), Penn World Tables, gives me every year dating from almost a century ago. This is instrumental for me to determine the correlations that can be involved when I look at the times my cases unified.

Chauncy D. Harris, writes about one of my cases which is, the unification of Germany in 1990. Harris says, "A new Germany came into existence on 3 October 1990 (Fig. 1). This Germany had not existed previously, at least not in these boundaries with this population, society, economy, government, and international ties. With an area of 357,043 square kilometers, it is two-thirds the size of the Germany of 1871. It is much smaller than France but slightly larger than the United Kingdom or Italy. It has a population of 78 million, compared with 56-57 million for each of these other countries. It also has a stronger economy than any other country in the European Community. In a central position in Europe between east and west and north and south, it has more international boundaries than any other country in Europe: land boundaries are with France, Luxembourg, Belgium, the Netherlands, Denmark, Poland, Czechoslovakia, Austria, and Switzerland" (1991, par. 2). Overall, the academic journal Harris presents will help identify the relevant timeframe for the unification of Germany and show that unification was done peacefully.

Tung Chee Hwa, the Chief Executive of Hong Kong, delivers a speech talking about the details and characteristics on the unification of Hong Kong and China. Hwa says, "July 1, 1997 was a day to which we in Hong Kong had looked forward with pride and confidence. Pride to at last be reunited with China, and to become masters of our own destiny. Confidence in that we can and will make our city an even better place for our children and grandchildren. Hong Kong is our home, and we treasure its distinctive character and system of government. China is our country, and that patriotism which is, in the words of Adlai Stevenson, 'the tranquil and steady dedication of a lifetime' is a natural feeling for us to have (1997, pg. 745). All in all, Hwa gives a speech labeling the specific time frame of unification with China and will help identify the unification peacefully.

Isaac Kfir, an author that describes one of my cases with conflict, talks about the Yemen unification as well as the civil war that is still present. Kfir mentions, "Yemen's history, social structure, economics and, most importantly, tribal nature, as a way to explain why the area that has come to be known as Yemen has experienced so much conflict. What makes the book appealing is Rabi's easy style, his expansive knowledge of the region, and use of Arabic sources" (2015, pg. 399). Basically, Kfir's book review helps us understand the unification of Yemen; also, the major conflict that is still present in the country. Overall, it will help us identify their conflicted unification as they are still in a civil war today.

Also, another contributing source to my research on conflicted cases will be by Ngo Vinh Long. Long writes, "The problems of reconciliation and accommodation following the Vietnam War are still extremely pronounced. Polarization in social, economic, and ideological terms created by the long war is still evident. Repression of civil society during the war

and military “victory” created difficulties for national reconciliation, integration, and development.” (2013, pg. 474). Moreover, Long talks about the Vietnam war, and explaining the military task of overthrowing the Saigon government leading to unification in 1975. Withal, this source will help identify the unification and go into detail about the conflicted case.

According to *USA Today*, “North Korean leader Kim Jong Un and South Korean President Moon Jae-In on Friday pledged to make peace, but many details in their joint declaration have yet to be worked out. That’s because the two leaders may agree on broad principles that can have different interpretations to each, and lead to lengthy negotiations or failure down the road” (2018, par. 1-2). This will be a source helping with my theoretical rationale.

The British Broadcasting Company goes on to say, “But some handshakes can have particular significance. One such handshake took place in June, 2018, between North Korea Kim Jong-un and US President Donald Trump. It was the first time that a serving US president had met with the leader of North Korea. This week, the two leaders are set to meet again in Vietnam.” (2018, par. 1-3)

Consumer News and Business Channel writes, “North Korea could account for up to 24 percent of the Korean Peninsula’s total gross domestic product in 20 years under reunification with the South, UBS estimated in a report this week. The rogue state currently accounts for 1.1 percent of the regional economy. Tensions around the nuclear state have eased after North Korean dictator Kim Jong Un met with the leaders of South Korea and the U.S. While it’s far from clear whether the two halves of the peninsula will ever reunify, they may be closer to establishing two peaceful, independent states, which by UBS’ analysis would also help growth. A peace treaty formally ending the Korean War and opening the North-South border would increase foreign investment, helping the economy, UBS economist Li Zeng and analyst Yong-Suk Son said in a Tuesday report” (2018, par. 1-3).

Analytical Model of a Theory and Hypothesis

Basically, a theory is a connection between two variables, and are too general to test directly. Alan Monroe says “Although the term theory is used in a wide variety of ways, it could be defined as a set of empirical generalizations about a topic. A theory consists of very general statements about how some phenomenon, such as voting decisions, economic developments, or outbreaks of war, occurs. But theories are too general to test directly, because they make statements about the relationship between abstract concepts—such as economic development and political alienation—that are complex and not directly observable. To actually investigate the empirical applicability of a theory, it must be brought down to more specific terms” (2000, 17-18). A theory is too abstract to test and must be more specific in order to be testable. For there to be a connection, you must have an independent and dependent variable present. The independent variable causes the dependent variable to happen. Monroe states, “Independent variables are those presumed in the theory underlying the hypothesis to be the cause and dependent variables are the effects or consequences. Although this distinction is sometimes difficult to make, in most hypotheses it is apparent. The statement may include explicit language to that effect—for example, “causes,” “leads to,” or “results in” (2000, 20). My theory: A country unifying peacefully has greater economic standing than a country unifying through war. My independent variable would be peaceful unification or not and my dependent variable would be a country’s economic standing.

In addition, a hypothesis is a solution to vague theories and happen to be more specific than theories. With a hypothesis, you will have a positive or negative relationship as well. Monroe says, “Hypotheses make statements about variables. These statements can take a variety of forms, as shown in Figure 2.1. If the hypothesis makes a statement about only one property or variable, then it is referred to as a univariate hypothesis. A multivariate hypothesis makes a statement about how two or more variables are related” (2000, 19). In this case, our hypothesis would be a univariate hypothesis, because we have only one variable which is (GDP). Hypothesis is this: The four countries we analyzed are more likely to unify peacefully instead of a conflicted one, due to the outcome of having a higher GDP. Independent variable would be peaceful or conflictual unification, and the dependent variable would be higher or lower gross domestic product.

Also, I can distinguish that there is a relationship within the hypothesis. In a positive relationship, as one variable rises the other will as well. In a negative relationship, one variable will rise, and the other variable will begin to fall. Monroe explains “In a positive or direct relationship between two variables, as one variable rises, the other tends to rise; for example, ‘The more education one has, the greater one’s income.’ In negative or inverse relationships, the opposite occurs, that is, as one variable rises, the other tends to fall” (2000, 19). Neither is what I have here, I can determine that the relationship is a nominal one. Monroe explains “In nominal relationships, the hypothesis does predict the direction, but one or both of the variables are such that they cannot be described in quantitative terms” (2000, 20). To conclude this, I can determine that it is a nominal relationship as it is shown in the hypothesis, peaceful unification can’t be described in quantitative terms, but will increase the GDP.

Theoretical Rationale

For my theoretical rationale, I will connect my theory to a specific source that gives a clear understanding of why this could be a factor that in analyzing my four cases could help North Korea more likely in unifying peacefully instead of a conflicted one. Logically, I figured unifying peacefully wouldn't come with any negative outcomes, and conflicted case of unification would be more at risk of negative outcomes to economic standing. Therefore, my theoretical rationale would be a peaceful unification by North Korea would be more reliable to greater economic standing than a unification with war. A great source to back that up is from a headline in the *British Broadcasting Company* states, "At the end of April, 2018, he shook hands with another man in a move that was called one of the most important handshakes in over 50 years. North Korea's Kim Jong-un and South Korea's Moon Jae-in shook hands at the border between the two countries, before symbolically stepping back and forth across the border. Since the Korean war ended in 1953, North and South Korea have been enemies. But after this meeting the two leaders agreed to turn their border into a 'peace zone'" (2018, par. 10-12). This is a great example of North and South Korea showing steps forward to a peaceful unification.

Now, combining this peaceful unification with great economic opportunities is our next goal for our rationale. Another great source to help make the distinction is another article from the *usatoday.com*. *USA Today* states, "In order to promote balanced economic growth and co-prosperity of the nation... adopt practical steps towards the connections and modernization of the railways and roads on the eastern transportation corridor.' The project, first agreed to in 2007, would be an economic benefit for North Korea, which wants to improve its infrastructure" (2018, par. 13-14). All-important, with a peaceful unification at hand, there could be economic growth in many different areas not just for North Korea, but South Korea as well. This not only helps with our rationale, but opportunities to identify the correlations.

Lastly, a source that is valuable in helping correlation is the *Consumer News and Business Channel*. *Cnbc.com* writes, "North Korea remains tiny and backward. Its centralized economy is the only one whose income level has fallen over the past 30 years, for a GDP of under \$17 billion versus Vietnam's \$205.3 billion in 2016, according to UBS. Survival is highly dependent on China, and sanctions to counter North Korea's nuclear threat have put further pressure on the economy. In the creation of two peaceful, independent states, North Korea's per capita GDP could multiply at least 8.3 times in 20 years, with an implied annual growth rate of 11.2 percent to 17.4 percent, the UBS report said. Reunification would send that implied annual growth rate to 20.6 percent." (2018, par. 6-8). This source lays out what two independent states could do to their economic growth, more specifically, GDP, if they unified peacefully.

Research Design

Alan D. Monroe at Illinois State University states, "People use the term research design in two different ways. In this chapter, research design refers to the logical method by which we propose to test a hypothesis. But in a broader sense research design can refer to a whole proposal for a research project that would also include the review of the literature, details of how data will be collected, and possibly even a budget for the proposed expenditures" (31). Essentially, this is the concept of what a research design is.

So, what exactly are the differences between a peaceful unification and one with conflict? Well, I look at two cases that are with peace: Hong Kong/China, and East/West Germany. According to Hwa, the chief executive officer of Hong Kong, says, "China has undergone dramatic changes since she opened up to the outside world in 1978. The economy has grown at a remarkable rate, averaging close to 10 percent per annum. This is a tribute to the vitality and energy of the Chinese people and the quality of China's leaders. These leaders have the ability and the acumen to steer China successfully into the 21st Century. It is this ability and acumen that will ensure the implementation of the "one country, two systems" concept as we move forward into the future. We feel no sense of threat in China's rising prosperity. What is happening there is not the growth of some monolithic giant, but the transformation of the lives of millions of men and women. It is a process that should warm the heart. It is a process that needs peace and stability if it is to be seen through. And a point that everyone in Hong Kong profits from is the fact that the U.S. and China make a good economic fit. What you produce, China needs. What China makes, you want. That makes for trade, and we in Hong Kong stand ready to service that trade" (1997, par. 4-5). Basically, Hwa gives his speech on how Hong Kong and China will be peacefully unifying under the basic law of "one country, two systems."

Furthermore, I have the peaceful unification of West and East Germany. Harris, from the American Geographical Society mentions, "Unification of East and West Germany was achieved peacefully in 1990. Agreements on international problems of the eastern boundary, military alliances, size of military forces, and foreign troops were codified in a treaty signed on 12 September by the four post-World War II occupying powers and the two Germanies. Internal problems of unification were addressed by treaties between the two Germanies on 18 May and 31 August. These dealt with state boundaries, the capital, environmental pollution and costs, and a host of economic, political, social, and judicial factors.

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United on 3 October, the new Germany promises to play a significant role in international affairs” (1991, Par. 1). Essentially, Harris presents how East and West Germany came together peacefully on October 3rd, 1990.

On the other hand, I look at two of my other cases that were involved with a conflictual unification. These cases are Yemen and Vietnam. According to Long, “Although it has been four decades since the Agreement on Ending the War and Restoring Peace in Vietnam was signed in Paris on January 27, 1973, the problems of reconciliation and accommodation are still extremely pronounced in Vietnam. Hence, political and social integration has been extremely difficult to bring about, seriously affecting the efforts at building a free, democratic, and prosperous society for all as once envisioned (2013, pg. 474). Long mentions what a conflicted unification with war is and identifies the struggles that come with it.

Additionally, I have my last conflict case of Yemen. Isaac Kfir mentions in his book review of *Yemen: Revolution, Civil War, and Unification* “Rabi explores how North and South Yemen sought to develop their respective ‘states’ while still fighting. The North, with its strong link to the Imamate, which came under the control of ‘Ali ‘Abdullah Salih, adopted a patrimonial system that was to have a lasting determinant effect on Yemen. In the South, the Popular Republic of Yemen emerged. The PRY was under the rule of the Yemeni Socialist Party. The Party under the author of ‘Abd ‘al -Fatta’A Isma sought doctrinal purity as it strove to establish a purely Marxist/Socialist Arab State. South Yemen descended into internal strife between the pragmatist and dogmatists, in that the former wanted to modify the revolution to suit the need of the state, whereas the latter clung to revolutionary principles. In other words, not only were the two Yemen’s in a state of war with each other, there was also an additional conflict within Southern Yemen. Rabi concludes his review by describing the unification of the two Yemens in 1990” (2015, pg. 400). Kfir shows us how the Democratic Republic of Yemen (South Yemen) and Yemen Arab Republic (North Yemen) were at a constant state of war until the conflicted unification ended in 1990. In addition, Yemen is in conflict yet again to this day, “Rabi concludes the book with some dire predictions, as the country faces an ongoing Houthi rebellion and an intensification of Saudi and Iranian intervention in Yemen’s domestic affairs. These factors coupled with the dire economic situation serve to make Yemen a failed state, as opposed to a failing state or fragile state” (2015, pg. 401). Not to mention, the present civil war today, but the civil war that happened in 1994, shortly after unifying which I will look at for my difference of means test.

In addition, these are the four cases, two of peace and two of conflict, I’m going to measure in comparison with their GDP in a time series. This time series will be measured at the starting year of 1950, which is as far as the reliable data will count for in the past, then it will be measured up to the year 2014. So, all of my unification dates for each specific country will be accounted for; also, this will give a solid perspective of how GDP has grown substantially or negatively. However, there will be some instances where data won’t be retrievable by some countries for specific dates.

After a solid representation of “Rgdpe,” expenditure-side real gross domestic product at chained purchasing power parity, in our graphs, I will then run a difference of means test. Monroe states, “There are many instances where one may want to evaluate the relationship between a nominal or ordinal variable and interval variable. Typically, this occurs when we are comparing two groups defined by the nominal or ordinal variable to see whether they are different on the interval variable. We might, for example, have a sample of individuals and wish to determine whether the difference in income between males and females was large enough to be considered significant. A number of statistical tests could be used to do this, such as the *t-test* and *difference of means*” (151). Basically, the difference of means test will help in determining if there is any significance. When this is being done, I will balance each country’s year before and after. For example, I will look at several years before unification, including unification date, and several years after unification. Each country will have a different number of balanced years depending on the data that was retrievable. Monroe explains “The term *significance* has a special meaning in statistics. Significance refers to the *probability that a relationship between variables could have occurred by chance in a random sample if there were no relationship between them in the population from which the sample was drawn*” (99). Essentially, this is the raw definition of significance and will be valuable for our correlations. With each case we will be measuring the expenditure-side real gross domestic product at chained purchasing power parity (Rgdpe), which is our main variable. According to www.rug.nl, which accurately defines (Rgdpe), says, “Expenditure-side real GDP at chained PPPs, to compare relative living standards across countries and over time” (2017, par. 13). This will be considered an interval measurement being the highest level of measurement. Monroe explains “The highest level of measurement is the interval level. An interval variable provides an exact number of whatever is being measured. This may be an actual count, for example, the total number of votes received by a candidate in a district or a person’s annual income” (85). In this case, we will be looking at each year for each country ten years before and after unification giving exact numbers of their overall “Rgdpe.”

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Statistical Analysis

For my main variable being measured in this time series Rgdpe, below, we saw that China and Germany had data for every year from 1950. As you can see, Vietnam and Yemen didn't have obtainable Rgdpe for previous years dating back to 1950-1988 (Yemen) and 1950-1970 (Vietnam). Unfortunately, we won't be able to determine the Rgdpe before their unification dates, but I'm able to see if there is any growth after unification. I can determine that both conflicted cases, Vietnam and Yemen, are almost linear.

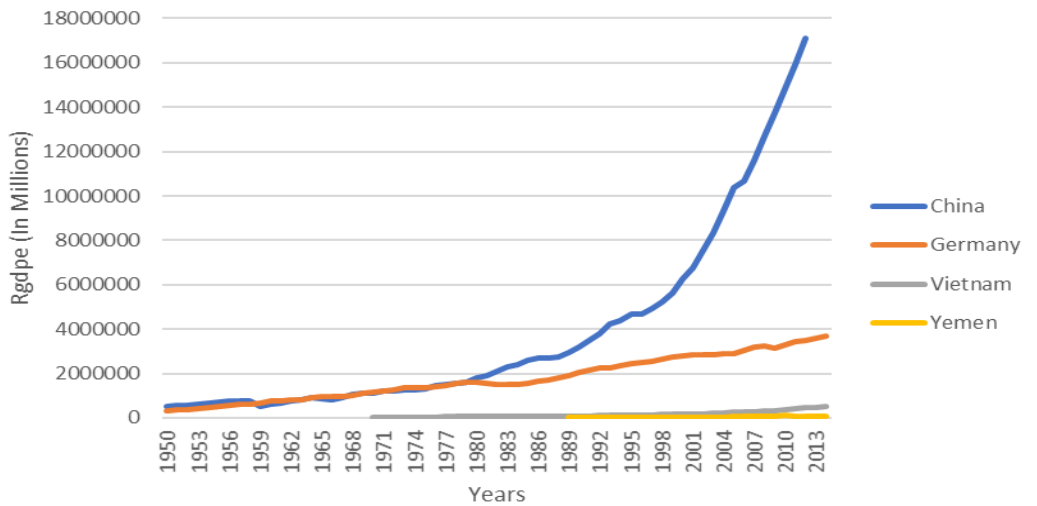
So, I will make a more distinct graph showing just the conflicted cases individually for each case.

As mentioned previously, China unified with Hong Kong in 1997. Therefore, I will look at the growth before and after this date. As seen, from about 1995-1996 there was a linear line of growth during this period, but after unification in 1997 there was substantial increase that keeps rising until about 2005. China grew to almost 11,000,000 Rgdpe.

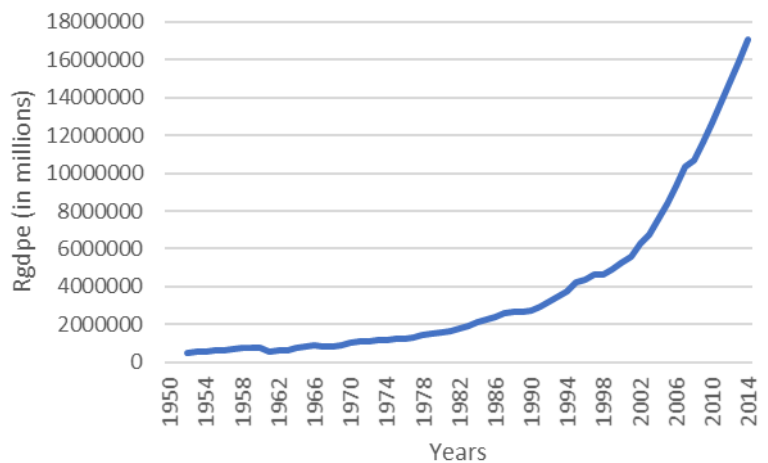
Now, when I look at Germany, which I previously mentioned about their unification in 1990 between West and East Germany, there was gradual growth with China up to about 1979. Then, it slightly started to fall until it hit unification date in 1990. Germany started to steadily incline in Rgdpe reaching to almost 4,000,000. That has doubled for Germany since unification, which was at 2,000,000 as seen below.

Next, I will be looking at Vietnam more distinctly to see if there is any growth or decline. Pictured below, you can see that I don't have the Rgdpe for the dates before their unification, as mentioned previously. Moreover, I have Rgdpe mentioned (in thousands), so I can see if there was drastic growth or decline. First, Vietnam had its war from 1955-1975. In 1975, Vietnam's conflicted unification ended. So, 1975 will be the date that I look for any substantial changes in growth or decline. Vietnam shows a steady growth in Rgdpe, then grows exponentially after 1990. Despite the Rgdpe being in the thousands, it still showed massive growth from what previously marked about 30,000 in 1975 to 500,000 in 2014. Although not being much, it shows growth which I will compare with my peacefully unified cases eventually.

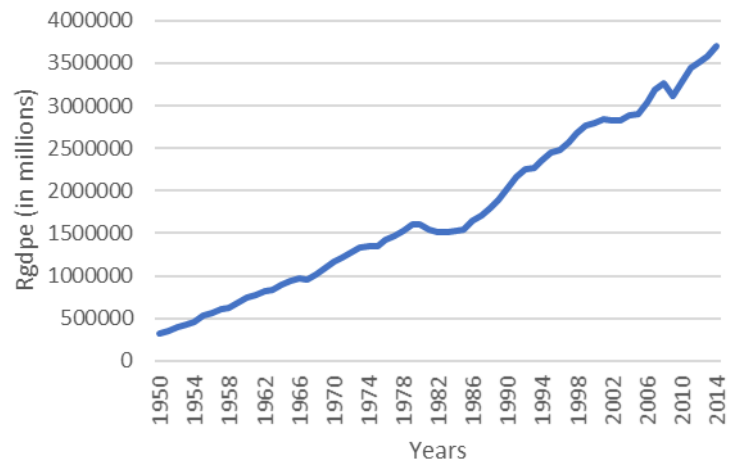
Countries Rgdpe



China Rgdpe

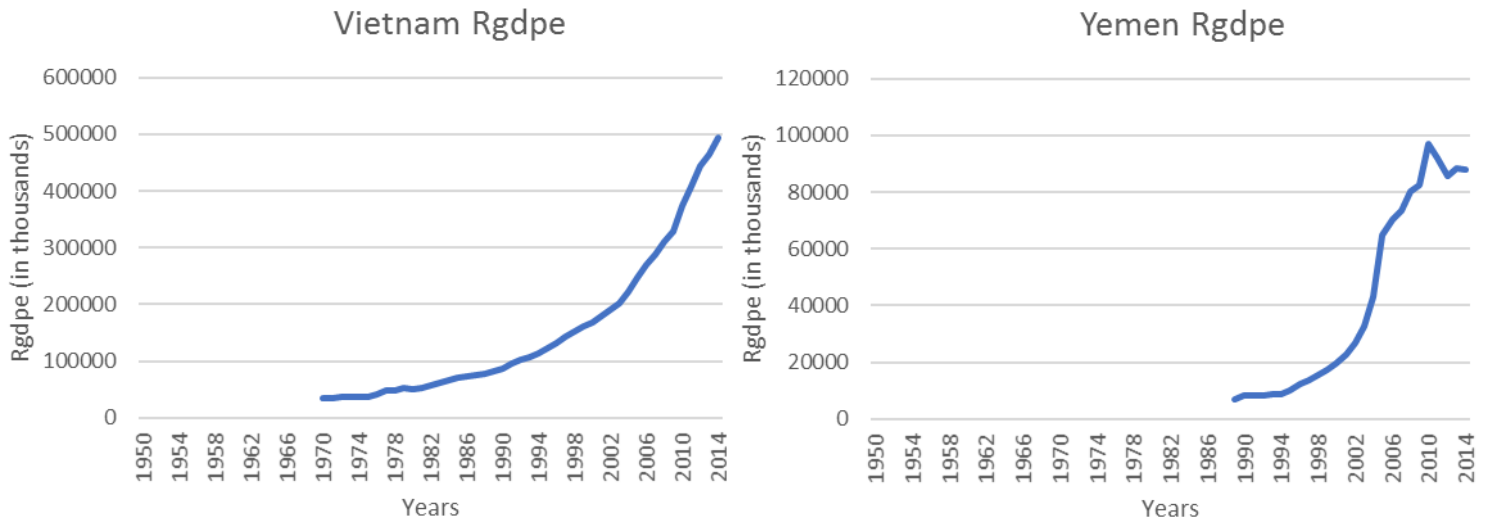


Germany Rgdpe



Lastly, I have Yemen who unified in 1990, as mentioned by Kfir. After unification, Yemen shows a period of linear for about 4 years, then begins to rise quite a bit. In 2009, Yemen experiences a sharp decline that almost brought them down 20,000 in a 5-year span. Yemen started at unification around 10,000 and ending below 90,000.

Now, I'm going to do the difference of means test to find any significance. Below is China's data for the difference of means test. When I look for significance, it must be .05 or lower, looking for my "t" ratio. A negative t-ratio indicates that growth is higher after unification. Additionally, as you can see (column B) is labeled after unification (including unification date) and (column A) is before unification. In this case, we are looking at 11 years before and 11 years after. China appears to have significance at -5.56, which is significant at the .05 level or less.



Next in my difference of means test, is Germany. As I did for China, I chose an equal balance of years to test before and after unification. This was 21 years before and 21 years after. This also appears to have significance at -13.52. Again, to have significance it must be significant at the .05 level or less.

Data Summary			
	A	B	Total
n	11	11	22
$\sum X$	37338576.7	79712309.5	117050886.2
$\sum X^2$	1324117284	6248325331	7572442616
SS	5669063613	4719141623	1344756265
mean	3394416.06	7246573.59	5320494.82

Results

Mean _a - Mean _b	t	df	p	one-tailed	<.0001
-3852157.52	-5.56	20		two-tailed	<.0001

For independent samples, these results pertain to the "usual" t-test, which assumes that the two samples have equal variances.

<i>Data Summary</i>			
	A	B	Total
n	21	21	42
$\sum X$	32025193.6	58345872.2	90371065.8
$\sum X^2$	4976684825	1647863972	2145532455
SS	9281326926	2679692120	2010254203
mean	1525009.22	2778374.86	2151692.04

Results

Mean _a - Mean _b	t	df	p	one-tailed	<.0001
-1253365.6	-13.52	40		two-tailed	<.0001

For independent samples, these results pertain to the "usual" t-test, which assumes that the two samples have equal variances.

Vietnam will be my next country measured with the difference of means test. I only had retrievable data from 1970 and after. Therefore, I will be doing 6 years before and 6 years after unification. It shows that Vietnam has significance at -7.73, and the chances the results are attributable to chance are less than .05.

<i>Data Summary</i>			
	A	B	Total
n	6	6	12
$\sum X$	217344.652	293698.488	511043.140
$\sum X^2$	7880121890	1445085956	2233098145
SS	7005572.95	74392560.3	567223821.
mean	36224.1087	48949.748	42586.9284

Results

Mean _a - Mean _b	t	df	p	one-tailed	<.0001
-12725.639	-7.73	10		two-tailed	<.0001

For independent samples, these results pertain to the "usual" t-test, which assumes that the two samples have equal variances.

Lastly, I will be testing Yemen for any significance. Unfortunately, Yemen was going to be the only country that would have an unbalance for years before and after, but instead I will use the civil war in 1994 for Yemen as a better way of determining significance, like previously mentioned. Yemen originally only had retrievable data until 1989 and unification was in 1990. Ultimately, I did 6 years before the civil war (including civil war date in 1994) and 6 years continuing. Surprisingly, Yemen shows significance at -4.51 which, again, is statistically significant at the .05 level or less.

	A	B	Total
n	6	6	12
$\sum X$	49145.8227	88948.6123	138094.435
$\sum X^2$	405140816.	1380868116	1786008932
SS	2588833.81	62225511.5	196836183.
mean	8190.9705	14824.7687	11507.8696

Results

Mean _a –Mean _b	t	df	p	one-tailed	0.000563
-6633.7983	-4.51	10		two-tailed	0.001126

For independent samples, these results pertain to the "usual" t-test, which assumes that the two samples have equal variances.

Conclusion

In my findings, all four cases showed significance at the .05 level or less. For my peacefully unified cases, China had a t-ratio of -5.56 (average growth after unification is better than average growth before unification), while Germany had a statistically significant t-ratio of -13.52. For my conflict unification cases, Vietnam had a significant t-ratio of -7.73, while Yemen had a significant t-ratio of 4.51. This means that both peacefully and conflict cases showed significant economic growth. Germany's peaceful unification performed the best, and the country is a leader in Europe. China's reunion with Hong Kong finished third, but China's economy is now one of the strongest in the world, however. Yemen may have improved after unification, but is experiencing a terrible civil war. In general, all states improved their economies after unifying with another country, but those that did so peacefully performed the best.

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