# Social Welfare: Investing in Your Nation

## *Introduction*

Does it literally pay to invest in your nation's welfare? Is it worth it, economically, to provide health care, education, basic sanitation needs, and monetary loans? Politicians have argued about this for centuries, and doubtless will continue to contest the idea regardless of the number of quantitative and substantive studies determining the issue one way or the other.

The answer to this question is at the root of most national policies, not only internal but also external. If a politician believes that it is profitable to spend money on social welfare, then not only will social welfare programs within the state be funded, but the country will be more likely to send humanitarian aid abroad, also. Conversely, if such programs are seen to be an economic drain on the country, then they will be less likely to be funded, having only the controversial claim of humanitarianism to back them up. (The claim that such policies are humanitarian is controversial due to, among other things, the counter-argument that encouraging individuals to achieve on their own merit is more conducive to self-betterment.) Obviously, the presence or absence of funding for such programs impacts a tremendous proportion of humanity.

The term "social welfare" can be defined with varying degrees of complexity, from definitions as simple as "governmental provision of economic assistance to persons in need"[1] to meanings requiring entire articles or even books to describe. In this study, I have examined social welfare as reflected in four categories of investment: investment in public education; investment in public health care; investment in sanitation facilities; and

[1] Harman, Gilbert, et. al. Cognitive Science Laboratory, Princeton; Wordnet 2.0 Cogsci database. Available on-line at: http://www.cogsci.princeton.edu/cgi-bin/webwn?stage=1

monetary investment in individuals, that is, loans given to private sector. These factors work together to "help the individual utilise his ability for his own welfare and welfare of the community."[2]

## *Hypothesis*

The alternative hypothesis for this paper is that investing in your nation's welfare is economically viable; it will cause your nation's wealth to increase. Therefore, there is a positive correlation between emphasis on education, sanitation, loans, and health care spending, and gross domestic product (GDP). The null hypothesis is that investing in your nation's welfare has no direct effect on GDP, and that any relationship between the aforementioned areas of social welfare and GDP is purely due to chance, and not statistically significant.

The dependent variable within these hypotheses is gross domestic product (GDP). The independent variables, which the alternative hypothesis suggests explain GDP, are: pupil-teacher ratio in primary schools (to indicate investment in education), public health expenditures as a percentage of GDP (to indicate investment in public health care), domestic credit to private sector as a percentage of GDP (to indicate investment in private businesses, homes, schooling, etc.), and the percentage of the population with access to improved sanitation facilities (to indicate investment in public sanitation). The first three independent variables are derived from 2000 data; the public sanitation data from 2000 was missing, so 2002 data was used in its stead.

[2] Durgabai Deshmukh, *Social Welfare and Economic Development*, (Bangkok, Thailand: United Nations Asian Institute for Economic Development and Planning, 1966), 4.

## *Literature review*

As George Martin describes it, in the capitalist West, social welfare manifests two underlying themes:

> 1. Social welfare has an economic function. It is tied to a society's mode of production, particularly its labor supply. The economy's influence is mediated by the social relations of production (such as class relations) and political and organizational processes. Historically, this can be analyzed as the progression from poor relief to income maintenance.
>
> 2. Social welfare reflects a moral value to care for the less fortunate. It is an expression of human solidarity and is related to the particular ideologies of societies. This can be seen as the progression from charity to social service.[3]

While the bulk of the literature on social welfare focuses on the second underlying theme that Martin identifies – that of a moral imperative to care for those less fortunate than we – Martin and others acknowledge that the two parts of social welfare are intertwined in reality, and are only separated in academic texts for discussion purposes.[4] Durgabai Deshmukh concurs with this, stating, "Economists and administrators are increasingly becoming aware of the social determinants of economic development."[5]

However, the primacy of those themes has remained in debate: should (and does) social welfare first serve moral goals, or economic aims? As Deshmukh writes, "differing view points have come to be expressed on the role that is, and that should be assigned to welfare work in the programmes of economic development in the developing countries."[6] From the moralistic aims of social welfare[7], some turn to the economic side, citing that as

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[3] George Martin, "Historical Overview of Social Welfare," in *Social Welfare in Society,* ed. George Martin and Mayer Zald (New York, NY: Columbia University Press, 1981), 11.
[4] Ibid, 11.
[5] Deshmukh, *Social Welfare and Economic Development*, 4.
[6] Ibid, 3.
[7] Andrew Polsky, *The Rise of the Therapeutic State*, (Princeton, NJ: Princeton University Press, 1991).

the most important aim of social welfare, or simply using economic gains as a justification for implementing the moralistic social welfare agenda.

While not as popular as the moralistic literature, support does exist for the sound economic practice of providing social welfare structures. Deshmukh notes, "education and health … have an immediate bearing on production."[8] Later, she cites several examples of Asian countries that are enjoying the benefits of social welfare through the creation of "a new force behind the economic development drive" and "growth in Society's capacity and performance in producing goods and services."[9] Jeffry Galper claims that he has "explored and found unconvincing the liberal thesis about the nature of the welfare state", proposing that in reality, "welfare state programs have been so organized that, in practice, they support and nurture market institutions."[10] Galper notes that many social services programs channel people into the labor market, thereby supporting that market, and that in some cases, individuals who are not currently seen as fit for society (in prison or in mental institutions) still serve society's capitalistic goals by producing goods while in the custody of the state.[11] Edward Berkowitz and Kim McQuaid agree with Galper, claiming that the social welfare advances made in the early 1900s were a result of "upper-class reformers anxious to discover some calculus of

[8] Deshmukh, *Social Welfare and Economic Development*, 10.
[9] Ibid, 12.
[10] Jeffry Galper, "The Political Functions of Social Services," in *Social Welfare in Society,* ed. George Martin and Mayer Zald (New York, NY: Columbia University Press, 1981), 169.
[11] Ibid, 171-177.

industrial felicity by which workers, their employers, and the general public might all benefit."[12]

As another example of a particular part of social welfare benefiting the economy, Dr. June Nualtaranee states that:

> [F]inancial intermediaries have played an important role in economic development since they can reduce the cost of acquiring information, conducting transactions, and facilitate saving mobilization. By providing these services, to economy, financial intermediaries can enhance resource allocation and accelerate growth. A large theoretical literature and empirical research shows that countries with more developed financial system will grow faster than countries with less developed financial system[13]

While some literature reinforces the positive aspects of social welfare as assisting in economic gains, other work highlights the less-desirable negative side of the cycle. That is, when social welfare falters, so too does the economy. James O'Connor writes that "federal, state, and local welfare, health, and education budgets are being frozen or cut across the entire country. And the growing poverty of the state spills over into the private sector…"[14] An absence of medical funding, for example, causes hospital prices to rise, which in turn reduces the amount of money in the private sector that is available for non-medical purposes. Just as there can be a positive growth spiral initiated by an increase in social welfare spending, there can also be a negative feedback loop.

Despite this disagreement over how to balance the two aspects of social welfare and economic development, the literature generally seems to be in agreement that they cannot be separated from each other. "Economic objectives cannot be divorced from

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[12] Edward Berkowitz and Kim McQuaid, *Creating the Welfare State: The Political Economy of Twentieth-Century Reform,* 2d ed (New York, NY: Praeger, 1988), 55.
[13] Dr.June Nualtaranee, "Financial Growth and Economic Development." Available on-line at: http://wb-cu.car.chula.ac.th/Papers/fingrowt.htm.
[14] James O'Connor, "The Fiscal Crisis of the State," in *Social Welfare in Society,* ed. George Martin and Mayer Zald (New York, NY: Columbia University Press, 1981), 523.

social objectives, and means and objectives go together … the two have to be considered together."[15] And the vital role of the state in achieving this social and economic well-being is granted by these writers, although a dearth of statistical and cost-benefit analyses in the field leads Durgabai to state that "such cost-benefit studies should be extended to social welfare programmes as well." [16] Such studies might also serve in the political arena, to convince constituents and politicians to support social welfare programs – or to reject them, if they are in truth an economic drain. This study attempts to make a beginning at filling that need for analytical research.

## *Data and analysis*

### Data and sources

Data for this study was derived from the World Bank Group's online World Development Indicators database. It was retrieved over the Internet in the period between April 20 and April 30, 2005. The data for the first three variables identified above – pupil-teacher ratio in primary schools, public health expenditures as a percentage of GDP, and domestic credit to private sector as a percentage of GDP – was from the year 2000. The data for the final variable – the percentage of the population with access to improved sanitation facilities – was only available for 2002, so that year's data was used instead of 2000.

[15] Deshmukh, *Social Welfare and Economic Development*, 7.
[16] Ibid, 11.

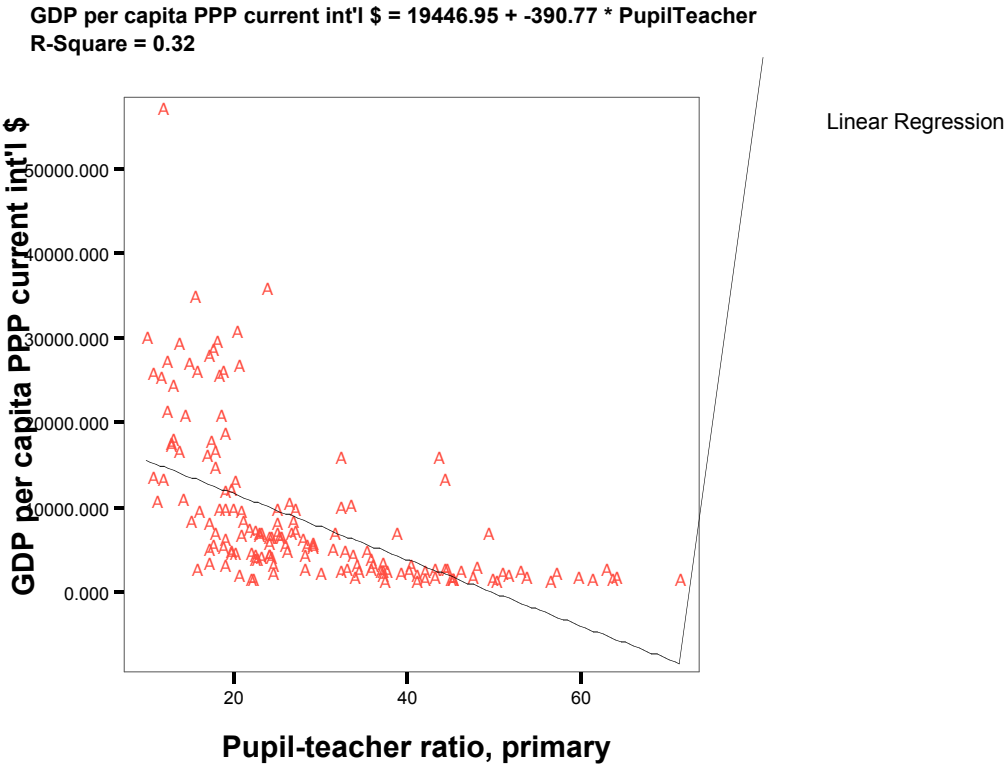
## Methodology

The methodology employed in this study was a combination of correlations and multiple regression analysis; in conjunction, further tests of correlation were employed to verify that the independent variables did not suffer from multicollinearity; that is, to verify that the independent variables each measured a distinct and separate indicator. SPSS software was used in performing the data analysis. Graphs of all of the regressions are available either in the body of this paper, or in one of the appendixes. In Appendix III, there is a list of all countries included in this study.

## Analysis

The analysis addresses each independent variable's relationship to the dependent variable, followed by the results of a multivariate regression of all independent variables with the dependent variable, and then considers the possibility of any two independent variables suffering from multicollinearity. The analysis section concludes with a discussion of the implications of the data for the hypotheses.

*Pupil-teacher ratio in primary schools*




Although this independent variable is the one with the weakest correlation with the dependent variable, I have chosen to address it first because of education's primacy in many social welfare programs. I believe that despite the relatively low $R^2$ of 0.32, the correlation between education and GDP is significant. This relationship is supported by various literature which claims that the capacity to create wealth "resides in people, their health, their education, their knowledge, their skills…"[17] Specific countries have also found a relationship between education and wealth; for example, in the UK, "between 1994-5 and 2003-4, spending on higher education rose by 25.2 per cent, and GDP

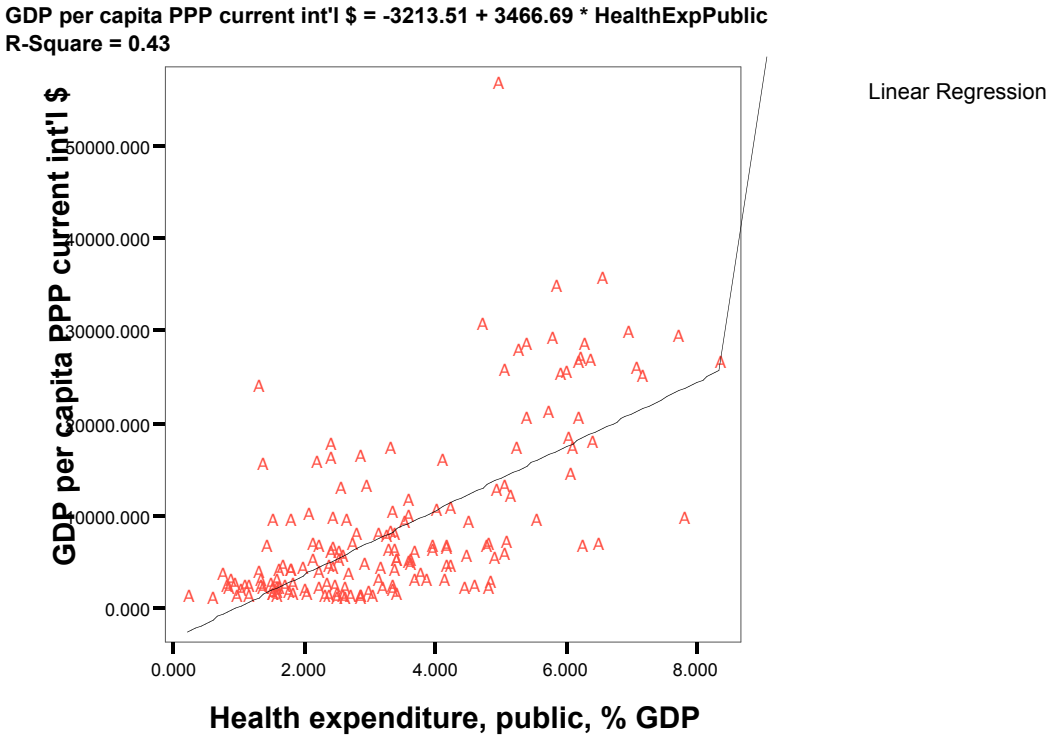
[17] Deshmukh, *Social Welfare and Economic Development*, 4.

rose by 27.3 per cent. This therefore provides the basis for a reliable comparison of change in HE spending and size of GDP."[18]

Unfortunately, it was difficult to obtain data that reflected the expenditures upon education as a percentage of GDP, which forced me to use pupil-teacher ratio as an indicator of such education spending. Since teachers must be paid, and small class sizes are one of the first things to be abandoned as school budgets are cut and teachers removed from the payroll, it is logical to presume that the presence of a small student-teacher ratio indicates a relatively large budget for education. Therefore, the negative correlation, above, between GDP and pupil-teacher ratio hints at a positive correlation between GDP and education expenditures. In short, this indicates that as education spending increases, so too does a country's GDP; this implies support for the alternative hypothesis, that it is financially worthwhile to invest in your country's education.

[18] Association of University Teachers, UK higher education, public spending and GDP. Available on-line at: http://www.aut.org.uk/media/html/spendingandgdp1.html.

*Public health expenditures as a percentage of GDP*

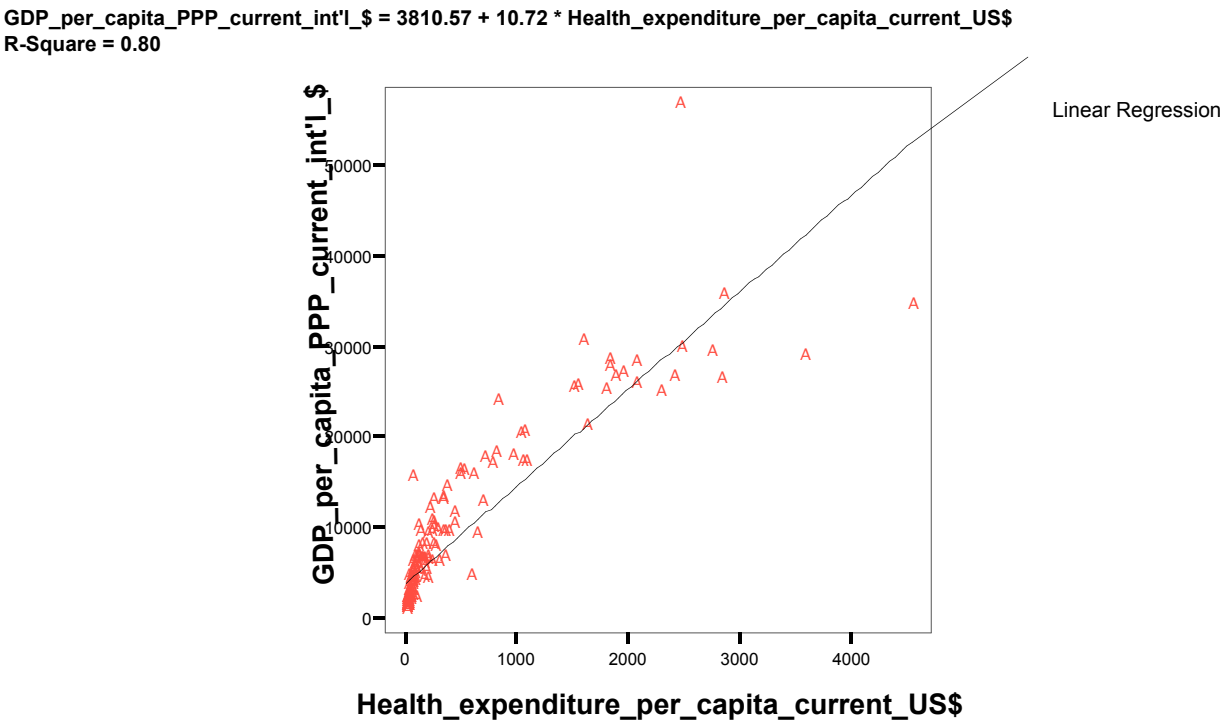



Health care is important to consider as a way of investing in your nation's future. Purely economically, spending on health care makes sense, because individuals who are healthier are more likely to work more days. For example, "Adequate RN staffing results in improved patient outcomes, (including reduced length of stay) and reduction in costly overtime, sick time, and turnover costs."[19] Also, good preventive health care results in less spent on expensive emergency care; this frees up funding to be spent on other

[19] Gail Myers, New York State Nurses Association, Statement before the Joint Assembly Ways and Means and Senate Finance Committees on the Executive Budget Relating to Health Issues, February 10, 2003. Available on-line at: http://www.nysna.org/programs/practice/testimonies/budgetII.htm.

developmental goals. "Each dollar invested in preventive health services saves $3.48 in health care costs and $5.82 in losses due to absenteeism."[20]

I initially considered two different health expenditure figures for this study. The first was a total measure of health expenditures per capita; the second (above) is a measure of only *public* health expenditures, as a percentage of GDP. The total measure of health expenditures (below) had a more obvious relationship with GDP, with an $R^2$ of 0.80; the measure of public health expenditures had a less obvious, but still significant, relationship with GDP, with an $R^2$ of 0.43.

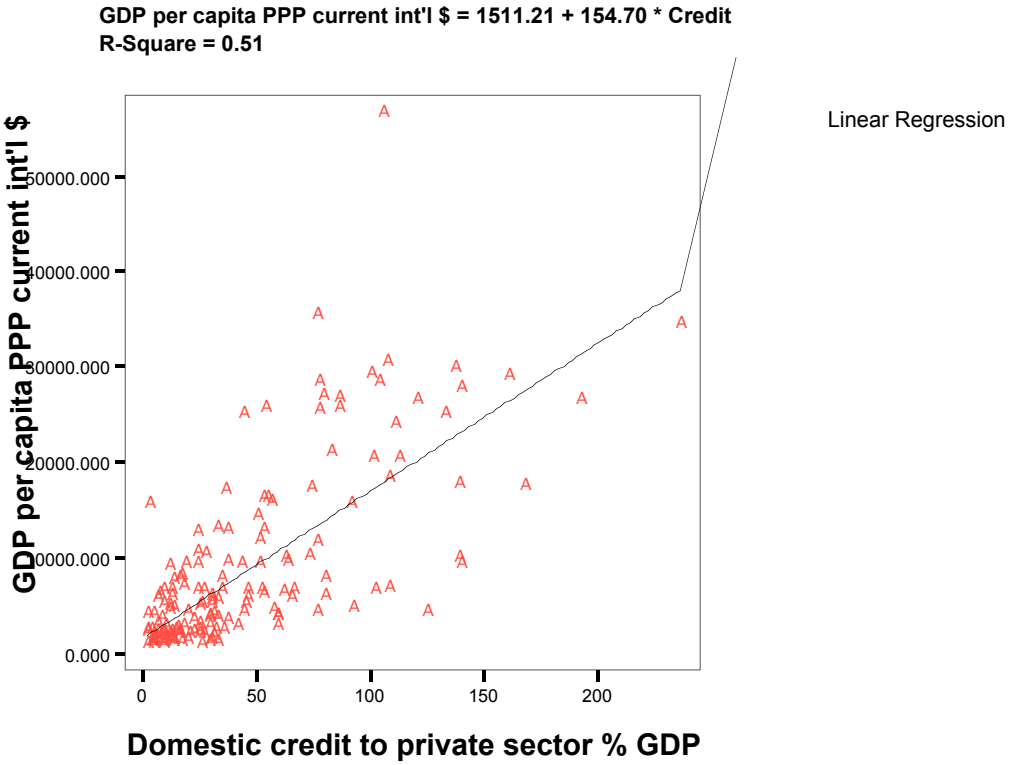



[20]Ian Dixon and Courtney Rees, Preventive Care and Services in Workplace Health Plans, *Benefits & Compensation Digest* v41 no12, pp 28-31, Dec 2004. Available on-line at: http://www.ifebp.org/knowledge/ichothcs.asp.

Despite this, I selected the data that reflected only public health expenditures. I made this decision for several reasons. First, the data on public health expenditures indicated something about the *government's* willingness to invest in its peoples' health. The data on health expenditures in general, on the other hand, only indicated *individuals'* willingness to spend on their health, which does not directly relate to my alternative hypothesis. Second, the measure of health expenditures in general is a flat per capita measure; the public health spending is given as a percentage of GDP. This difference is important, because the general health expenditure increase correlation with GDP per capita may only indicate that people have more money to spend, and hence are spending more on health care. The public health expenditure statistic, on the other hand, indicates how much of a priority health care spending is, instead of just reflecting an abundance of funds available to spend. Finally, the data on public health spending worked better with the other factors in a multivariate regression than did the statistics on health spending in general, indicating that in concert with the other independent variables, public health spending is a better indicator of GDP.

With an $R^2$ of 0.43, the relationship between GDP and public health spending is clear and positive. This indicates support for the alternative hypothesis, implying that governmental spending on public health is not only humanitarian, but also an economically sound practice.

*Domestic credit to the private sector as a percentage of GDP*

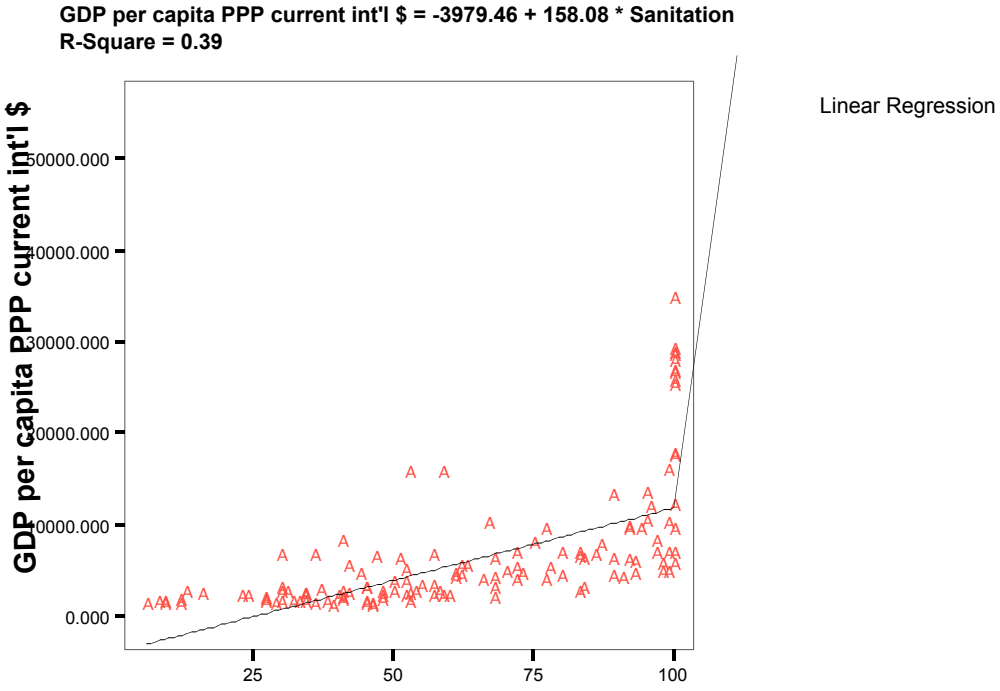



With an $R^2$ of 0.51, the relationship between domestic credit to the private sector (as a percentage of GDP) and GDP itself is clear and positive. The importance of domestic credit being granted to the private sector is in flexibility: that credit allows citizens to start businesses, purchase cars or homes, spend on their children's educations (such as putting them through a private college or private high school, paying for books, or supplying tutors), and otherwise make investments in their future.

This concept is supported by various findings; for example, in South Africa, "There is also evidence that international capital flows and the growth of real domestic credit improve the one year ahead growth outlook."[21] Similarly, Dr. Nualtaranee lists domestic credit as a measure of the level of financial development, and notes that Woo Jung has found "evidence for the causal relationship between financial development and economic growth."[22] Whether this credit is supplied directly by the government or not is immaterial to the effect it has on development. However, it should be noted that governmental policies on banking and the financial structure will inform the disposition of loans regardless of the source of those loans. In brief, granting credit to the private sector encourages that sector to economically and socially better itself. Therefore, the data for this factor supports the alternative hypothesis.

[21] Janine Aron, and John Muellbauer, "Interest rate effects on output: evidence from a GDP forecasting model for South Africa." Available on-line at: http://www.csae.ox.ac.uk/resprogs/smmsae/nontechs/nontech07.html.
[22] Nualtaranee, "Financial Growth and Economic Development."

*Percent of population with access to improved sanitation facilities*




Although improved sanitation has an $R^2$ of only 0.39 when analyzed with GDP alone, it is a strong contributing factor to economic growth. Improved sanitation increases life expectancies and reduces illness, thereby granting the population with more time available as productive adult members of society. This increase in workforce in relation to ill or ailing members of society is key to increasing the GDP of a country. Without providing this basic need of sanitation, it is extremely difficult to achieve at a high level, financially. This supports the alternative hypothesis, suggesting that providing improved sanitation for a country will help it to develop economically.

## *Multivariate regression*

Independently, then, all four independent variables are adequate at explaining GDP. Each factor on its own can help to spur a nation's economy on to better performance. However, when taken in concert, all four factors provide a fairly compelling case for universal provision of social welfare.

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .803[a] | .645 | .633 | 3953.402821 |

a. Predictors: (Constant), Pupil-teacher ratio, primary, Health expenditure, public, % GDP, Domestic credit to private sector % GDP, Improved sanitation facilities (% of population with access) 2002

**Model Summary:** this table shows the statistics for the entire model. The adjusted $R^2$ of 0.633 is fairly significant, indicating that this model is a fairly good predictor of GDP: it explains about 63% of the data.

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3E+009 | 4 | 829397197.0 | 53.066 | .000[a] |
| | Residual | 2E+009 | 117 | 15629393.86 | | |
| | Total | 5E+009 | 121 | | | |

a. Predictors: (Constant), Pupil-teacher ratio, primary, Health expenditure, public, % GDP, Domestic credit to private sector % GDP, Improved sanitation facilities (% of population with access) 2002

b. Dependent Variable: GDP per capita PPP current int'l $

**ANOVA:** The ANOVA results are explained by the $R^2$, as discussed above. The Sum of Squares indicates the points explained by the model. The regression used 4 degrees of freedom, a number of degrees of freedom commonly seen in the use of Student's curve. The F statistic is large, which indicates significance for the model; and the small Sig. (or P) value of 0 indicates that the data is not due to chance.

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -3873.937 | 2423.758 | | -1.598 | .113 |
| | Health expenditure, public, % GDP | 1123.872 | 295.682 | .245 | 3.801 | .000 |
| | Domestic credit to private sector % GDP | 77.641 | 10.595 | .481 | 7.328 | .000 |
| | Improved sanitation facilities (% of population with access) 2002 | 59.181 | 20.800 | .246 | 2.845 | .005 |
| | Pupil-teacher ratio, primary | -10.236 | 40.909 | -.020 | -.250 | .803 |

a. Dependent Variable: GDP per capita PPP current int'l $

**Coefficients:** This table indicates the success of each of the independent variables within this model. The fairly large numbers in the Unstandardized Coefficients column B indicate that the GDP increases (or decreases) by a significant amount for every unit of increment of the independent variable. For example, for every % of GDP that is spent on public health expenditure, the GDP increases by $1123.87; for every additional student added to the pupil-teacher ratio, the GDP decreases by $10.24.

The t value indicates whether the observed effects of the independent variables on the dependent variable are real, or are due to chance. When the t value is outside of the range -1.96 to +1.96, that indicates that the effects of the independent variables are real. The .sig value, similarly, indicates "the chance of getting a test statistic as extreme as, or more extreme than, the observed one"[23], on a purely chance basis. A .sig value that is close to zero means that the statistic is not likely to be due to chance.

In this model, the first three variables have extreme t values and very small sig. values indicating that there is a real relationship between them and GDP; the increase in

[23] David Freedman, Robert Pisani, and Roger Purves. *Statistics,* 3d ed. New York, NY: W. W. Norton & Co., 481.

GDP as the independent variables increase is not due to chance. However, the fourth variable (pupil-teacher ratio, primary) has poor t and sig. values, indicating that perhaps the relationship between GDP and those values is coincidental, and there is no real effect of pupil-teacher ratio on GDP. I included the variable in the model despite that due to the aforementioned prominence of education in literature as an important development goal. I believe that were I to repeat this study, replacing student-teacher ratio with more accurate data on education spending as a % of GDP, I would find that the relationship between education spending and GDP was also real, as indicated by good t and sig. scores.

### *Proof of no multicollinearity*

In order to avoid the hazard of multicollinearity (or multiple variables measuring the same phenomenon) in this model, I performed tests of correlation between all of the independent variables. The results of those tests are reproduced in Appendix 1: Multicollinearity Tests. The $R^2$ values for all of those tests except one were outside of the range of significance, ranging from 0.22 to 0.27. The one test which indicated potential multicollinearity was the comparison between Improved Sanitation Access and Pupil-Teacher Ratio, with an $R^2$ of 0.54. Since common sense tells us that these two variables are extremely unlikely to measure the same thing, being unrelated except as a reflection of the government's interest in providing social welfare, I retained both variables in spite of that $R^2$.

## Findings

In general, the analysis of this data supports the alternative hypothesis. The reasonably significant individual R2 values, definitely significant R2 for the model, extreme t scores, and very low .sig scores for the majority of the model indicate its success in explaining the data. Therefore, the alternative hypothesis can be accepted: It is worth it, economically, to provide health care, education, basic sanitation needs, and monetary loans to the population of a country.

The exception is the data on pupil-teacher ratio. As discussed, this data was included despite that, because of strong literary support for education expense as an indicator of GDP. The problems with pupil-teacher ratio may have arisen because of several factors. Firstly, unlike the other independent variables, it did not measure a percentage – either a percentage of the population, or a percentage of the GDP. Secondly, there were some extreme outliers in the data, such as Tajikistan and Yemen, countries with low GDPs but with pupil-teacher ratios comparable to those found in Europe. This may indicate one of the problems with using pupil-teacher ratio as an indicator of expenditures on education. If education is not required and enforced for all youth of a country, and instead, children are employed as a part of the labor force, then the pupil-teacher ratios for that country might be low, but indicate neither quality education nor significant expenditures on education.

Similarly, larger pupil-teacher ratios in countries with higher GDPs, such as Norway, Ireland, and Japan, might indicate that alternative methods are employed to ensure quality education. In Norway, for example, the government will fund university study for all students; and in Japan, many students attend additional tutorial sessions,

which are not considered a formal part of the school system, but increase the overall quality of Japanese education.

## *Conclusion*

Despite the anomaly found in the pupil-teacher ratios, the data suggests that the alternative hypothesis is sound. It does pay, financially, to invest in a country's health, education, sanitation, and financial structure. Such investments result in a higher GDP, causing the country to develop economically as well as socially.

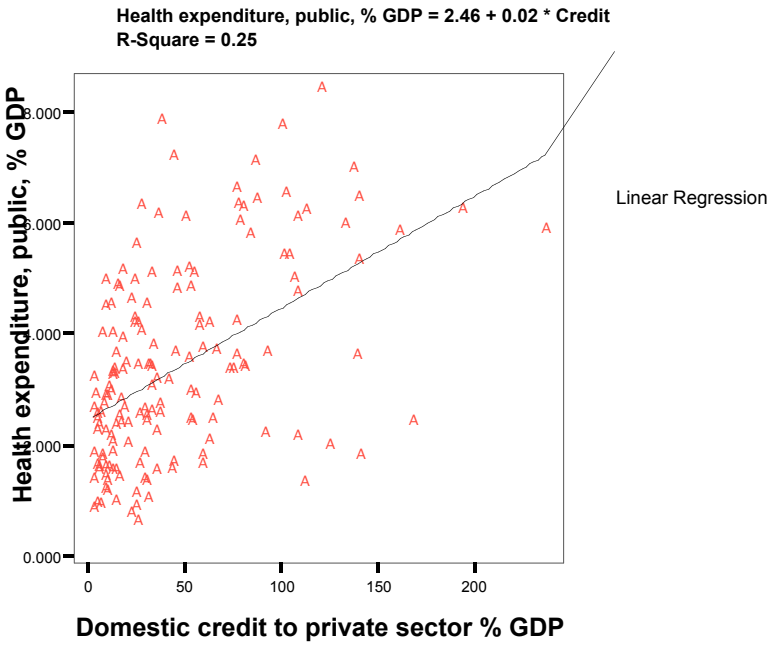
It is important to note, however, that this positive correlation between these variables does not necessarily require a causal relationship. That is, the data might also indicate that as countries have a greater GDP available, more is spent on health, sanitation, and education; and more loans are taken. However, it is definitely true that social and economic development go hand-in-hand. Perhaps this is because many governments exist primarily to serve the people, and hence social services are prioritized in a developing country's budget; but it is entirely likely that in fact, the support of the aforementioned social services allows the population to be more well-educated, healthy, and able to invest, thereby granting them the ability to create more products and more expensive goods and services for export.

In light of this analysis, we have begun to question the correlation between pupil-teacher ratio and education spending. It is possible to achieve economically without a particularly low pupil-teacher ratio, and perhaps this indicates a different way to allocate educational funds within the educational system. For example, an investigation of the role of technology in education might be in order, as technology evolves to extend the capacity of an individual teacher.

# Appendix I: Multicollinearity Tests

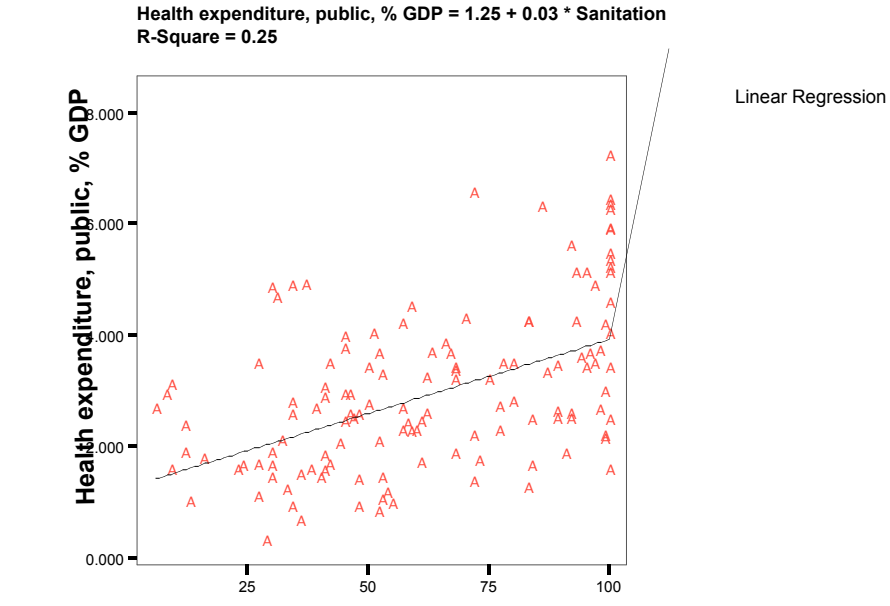
## *Public Health Expenditure and Domestic Credit*

$R^2 = 0.25$



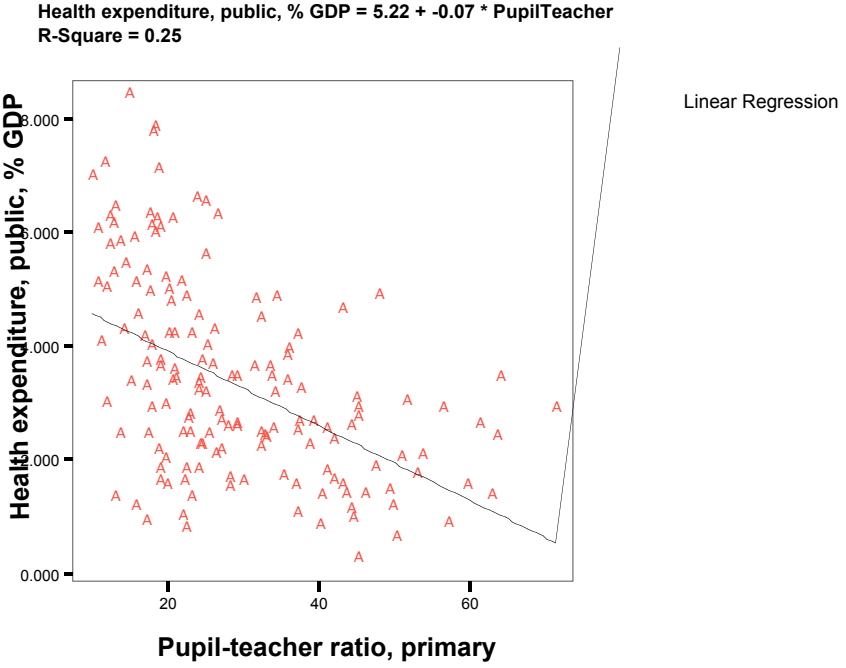

## *Public Health Expenditure and Improved Sanitation Access*

$R^2 = 0.25$



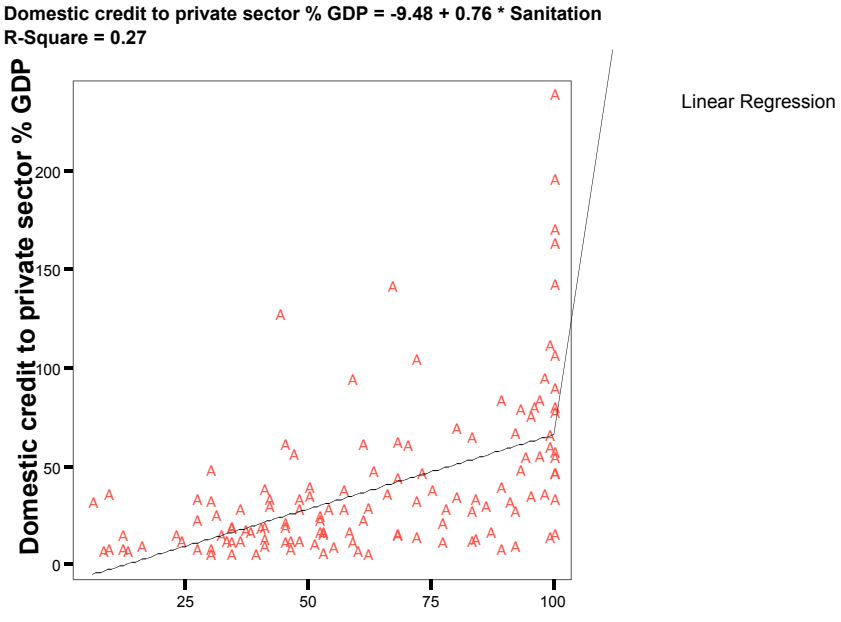
## *Public Health Expenditure and Pupil-Teacher Ratio*

$R^2 = 0.25$



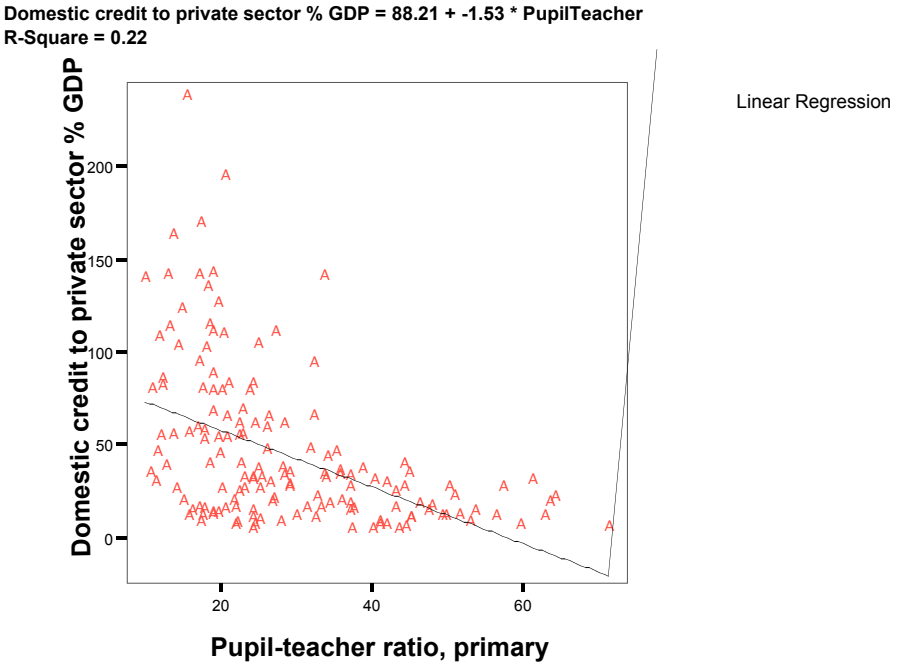

## *Domestic Credit and Improved Sanitation Access*

$R^2 = 0.27$



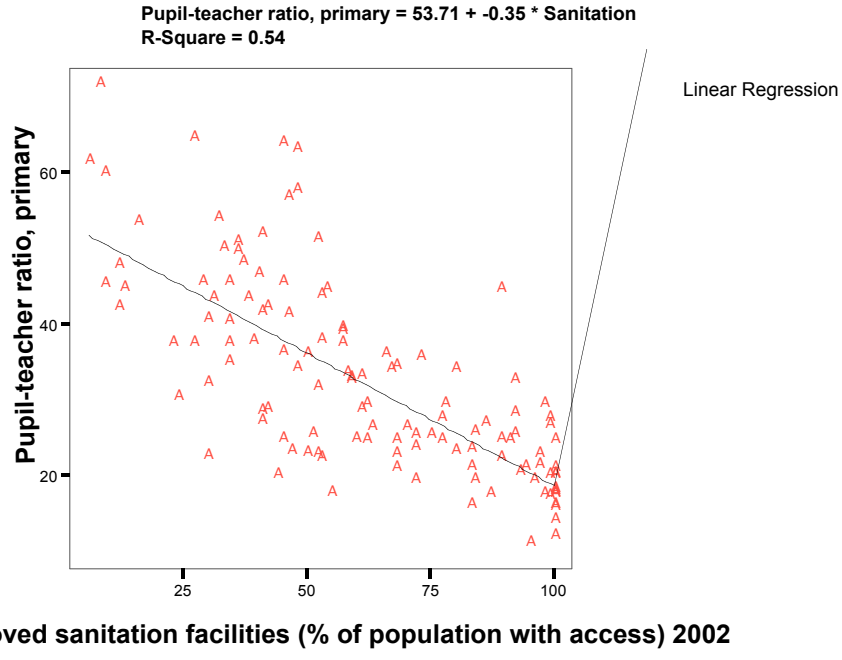
## *Domestic credit and Pupil-Teacher Ratio*

$R^2 = 0.22$




## *Improved Sanitation Access and Pupil-Teacher Ratio*

$R^2 = 0.54$



# Appendix II: Table of Data for Thirty Highest-GDP Countries

| Country | GDP per capita | Pupil-teacher ratio | Public health expenditures | Improved sanitation | Private sector credit |
|---|---|---|---|---|---|
| Luxembourg | 56267.48 | 12 | 4.9335 | [no data] | 105.7215 |
| Norway | 35131.79 | 24 | 6.545 | [no data] | 76.39201 |
| United States | 34113.69 | 15 | 5.8164 | 100 | 236.2088 |
| Ireland | 30027.75 | 20 | 4.6912 | [no data] | 107.5911 |
| Denmark | 29336.57 | 10 | 6.9216 | [no data] | 137.032 |
| Iceland | 28799.05 | 18 | 7.6912 | [no data] | 100.2615 |
| Switzerland | 28526.23 | 14 | 5.7824 | 100 | 160.8616 |
| Austria | 27994.92 | [no data] | 5.3592 | 100 | 103.5155 |
| Canada | 27879.88 | 17 | 6.2656 | 100 | 77.1987 |
| Netherlands | 27228.82 | 17 | 5.2535 | 100 | 139.4287 |
| Belgium | 26490.61 | 12 | 6.204 | [no data] | 79.32339 |
| Australia | 26181.04 | [no data] | 6.3572 | 100 | 86.43356 |
| Germany | 26074.69 | 15 | 8.3528 | [no data] | 120.4762 |
| Japan | 25974.16 | 20 | 6.1788 | 100 | 192.6357 |
| France | 25318.22 | 19 | 7.0494 | [no data] | 86.31084 |
| Finland | 25141.25 | 16 | 5.0317 | 100 | 53.98748 |
| Italy | 24936.17 | 11 | 5.9697 | [no data] | 77.56952 |
| United Kingdom | 24675.17 | 18 | 5.9057 | [no data] | 132.761 |
| Sweden | 24525.53 | 11 | 7.1316 | 100 | 43.67678 |
| Singapore | 23494 | 13 | 1.2672 | [no data] | 110.9527 |
| Israel | 20615.49 | 12 | 5.712 | [no data] | 83.04884 |
| New Zealand | 20009.88 | 18 | 6.162 | [no data] | 112.5902 |
| Spain | 19968.64 | 14 | 5.37 | [no data] | 101.008 |
| Malta | 17862.2 | 19 | 6.0192 | [no data] | 108.2417 |
| Portugal | 17346.12 | 13 | 6.394 | [no data] | 139.1481 |
| Cyprus | 17106.71 | 17 | 2.3688 | 100 | 167.8955 |
| Bahamas, The | 16792.65 | [no data] | 3.304 | 100 | 74.15574 |
| Greece | 16714 | 13 | 5.2283 | [no data] | [no data] |
| Slovenia | 16612.72 | 13 | 6.08 | [no data] | 36.19224 |
| Bahrain | 15869.74 | 18 | 2.8413 | [no data] | 54.81909 |

# Appendix III: List of Countries Included in Study

Albania
Algeria
Angola
Antigua & Barbuda
Argentina
Armenia
Australia
Austria
Azerbaijan
Bahamas, The
Bahrain
Bangladesh
Barbados
Belarus
Belgium
Belize
Benin
Bolivia
Bosnia & Herzegovina
Botswana
Brazil
Bulgaria
Burkina Faso
Burundi
Cambodia
Cameroon
Canada
Cape Verde
Central African Republic
Chad
Chile
China
Colombia
Comoros
Congo Dem Rep
Congo Rep
Costa Rica
Cote d'Ivoire
Croatia
Cyprus
Czech Republic
Denmark
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Eritrea
Estonia
Ethiopia
Fiji
Finland
France
Gabon
Gambia, The
Georgia
Germany
Ghana
Greece
Grenada
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hungary
Iceland
India
Indonesia
Iran
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Korea, Rep
Kuwait
Kyrgyz Repub
Lao, PDR
Latvia
Lebanon
Lesotho
Lithuania
Luxembourg
Macedonia, FYR
Madagascar
Malawi
Malaysia
Mali
Malta
Mauritania
Mauritius
Mexico
Moldova
Mongolia
Morocco
Mozambique
Namibia
Nepal
Netherlands
New Zealand
Nicaragua
Niger
Nigeria
Norway
Oman
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Poland
Portugal
Romania
Russian Federation
Rwanda
Samoa
Saudi Arabia
Senegal
Sierra Leone
Singapore
Slovak Republic
Slovenia
Solomon Islands
South Africa
Spain
Sri Lanka
St. Kitts & Nevis
St. Lucia
St. Vincent & the Grenadines
Sudan
Swaziland
Sweden
Switzerland
Syrian Arab Republic
Tajikistan
Tanzania
Thailand
Togo
Tonga
Trinidad & Tobago
Tunisia
Turkey
Turkmenistan
Uganda
Ukraine
United Kingdom
United States
Uruguay
Uzbekistan
Vanuatu
Venezuela
Vietnam
Yemen
Zambia
Zimbabwe

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