UNIVERSITY OF GOTHENBURG

CORRELATES OF CORRUPTION

BO ROTHSTEIN

SÖREN HOLMBERG

Content

Trust

Happiness

Democracy

Quality of Government

GDP / Capita
vs. Control of Corruption
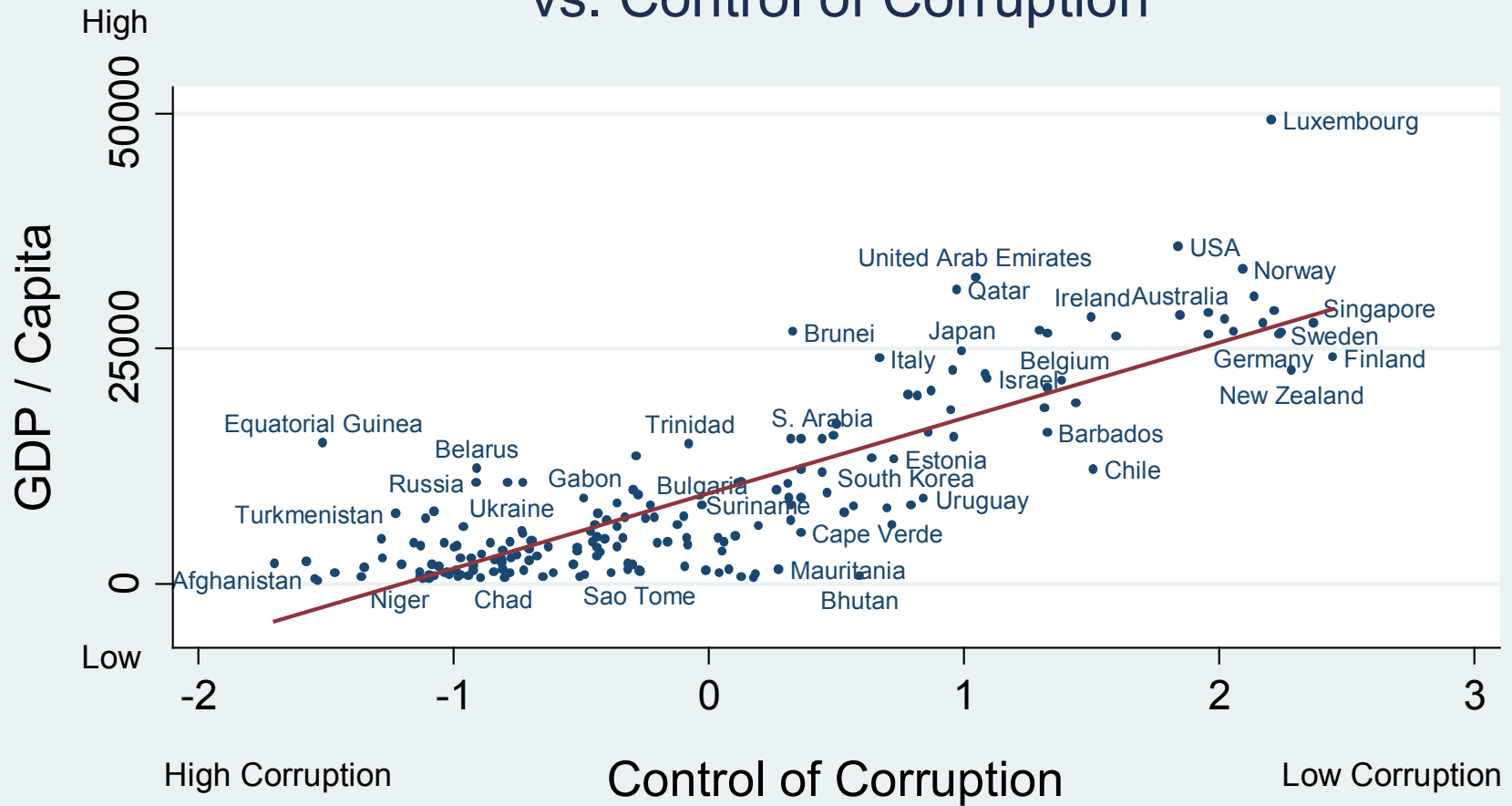
R²=0.71

Sources: Gleditsch (2002), World Bank (2002-2008)

Data runs by: Richard Svensson

Economic Equality
vs. Control of Corruption

Economic Equality (Reversed Gini-index)

High
Low

Denmark
Sweden
Norway
Finland
Slovakia
Austria
Bosnia
Netherlands
Hungary
Ukraine
Albania
Bulgaria
France
Bangladesh
Belgium
Egypt
New Zealand
Russia
Greece
Latvia
Maldives
Turkmenistan
Djibouti
USA
Tunisia
Israel
Nigeria
St Lucia
Singapore
Uganda
Uruguay
Zimbabwe
Nepal
Costa Rica
Liberia
Sao Tome
Suriname
Chile
Panama
Haiti
Angola
South Africa
Bolivia
Belize
Comoros

Control of Corruption

High Corruption
Low Corruption

R²=0.13

Sources: World Development Indicators (1995-2008), World Bank (2002-2008)
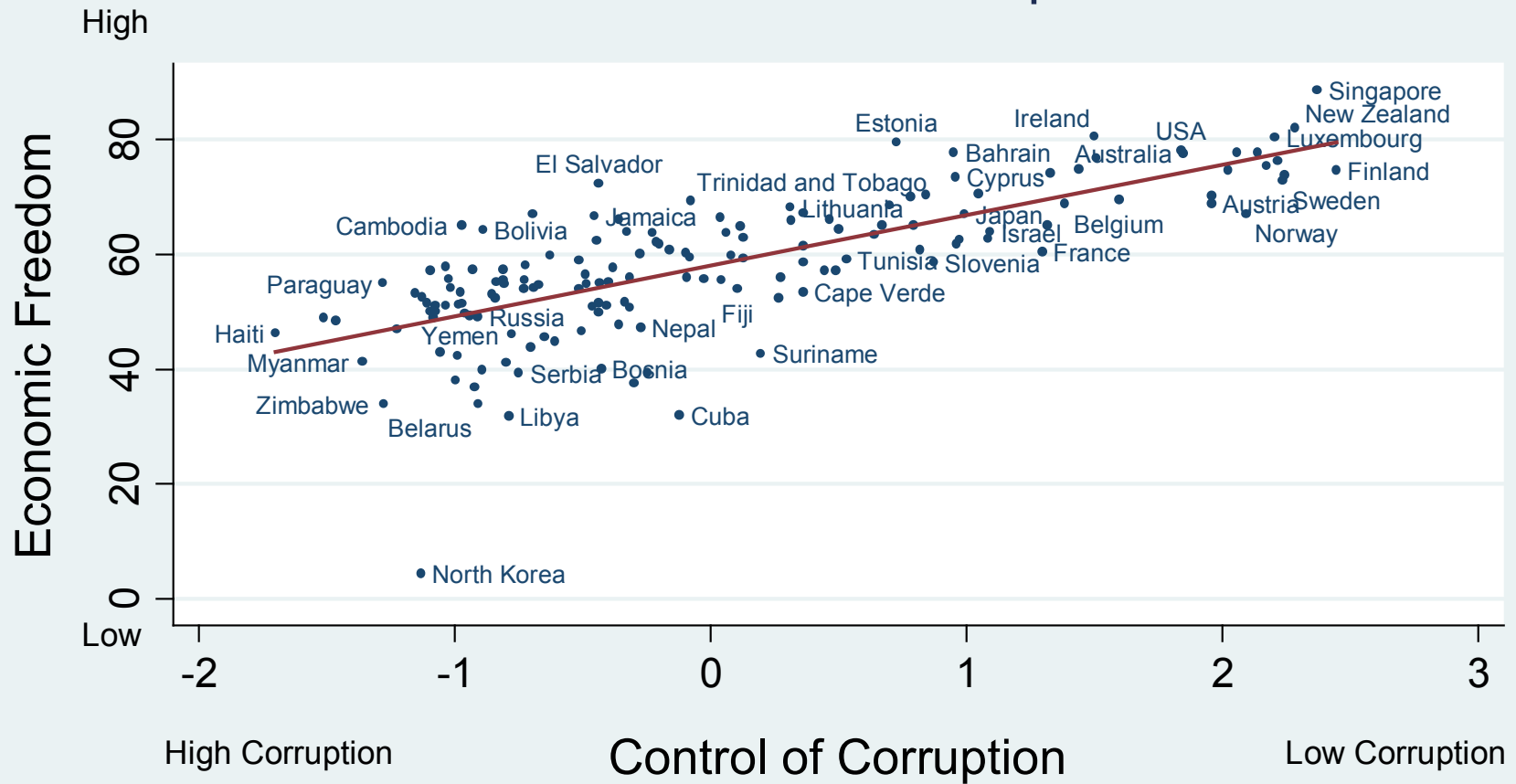
Data runs by: Richard Svensson

5

Economic Freedom vs. Control of Corruption

R²=0.56

Sources: Heritage Foundation (2002), World Bank (2002-2008)

Data runs by: Richard Svensson

GDP / Capita Growth
vs. Control of Corruption

High

GDP / Capita Growth (y-axis)

- Sierra Leone
- Equatorial Guinea
- Turkmenistan
- Afghanistan
- Armenia
- Sao Tome
- Myanmar
- China
- Lithuania
- Estonia
- Georgia
- Russia
- Iran
- Ireland
- New Zealand
- Greece
- Slovenia
- Dem. Rep. Congo
- Australia
- Sweden
- Haiti
- USA
- Finland
- Nigeria
- Japan
- Iceland
- Zimbabwe
- Senegal
- Mauritania
- Israel
- Barbados
- Malawi
- Gambia
- Dominica
- Iraq
- Argentina
- Uruguay
- Venezuela
- Madagascar

20
10
0
-10
-20

Low

Control of Corruption (x-axis)

-2   -1   0   1   2   3

High Corruption   Low Corruption

R²=0.01

Sources: World Development Indicators (2002-2005), World Bank (2002-2008)
(N.B. The data for GDP / Capita growth is for a single year only)

Data runs by: Richard Svensson

Population Below $2 a Day
vs. Control of Corruption
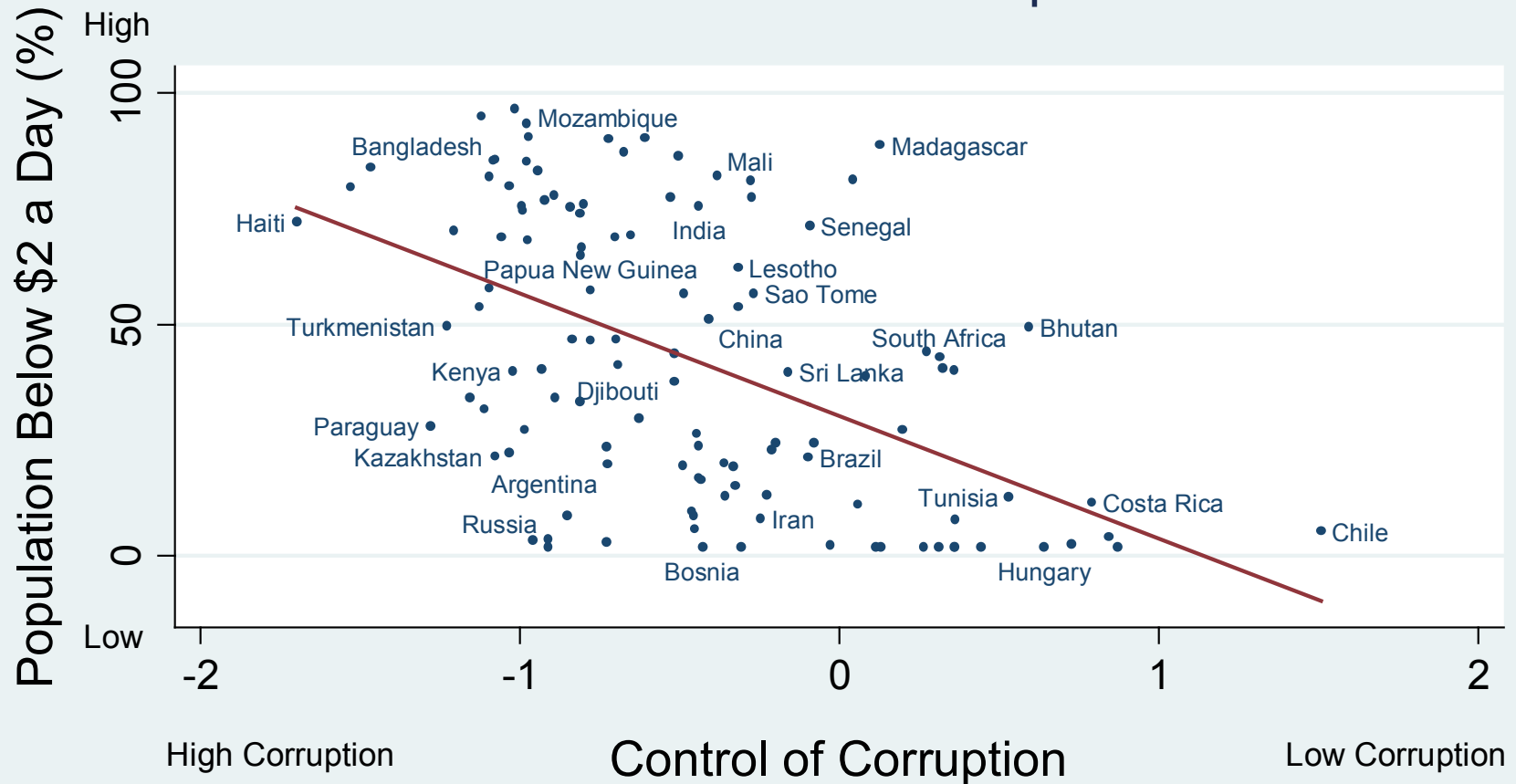
R²=0.26
Sources: World Bank (1995-2008)

Data runs by: Richard Svensson

Foreign Credit Rating vs. Control of Corruption

R²=0.62
Sources: Standard & Poor's (2011), World Bank (2002-2008)

Data runs by: Richard Svensson

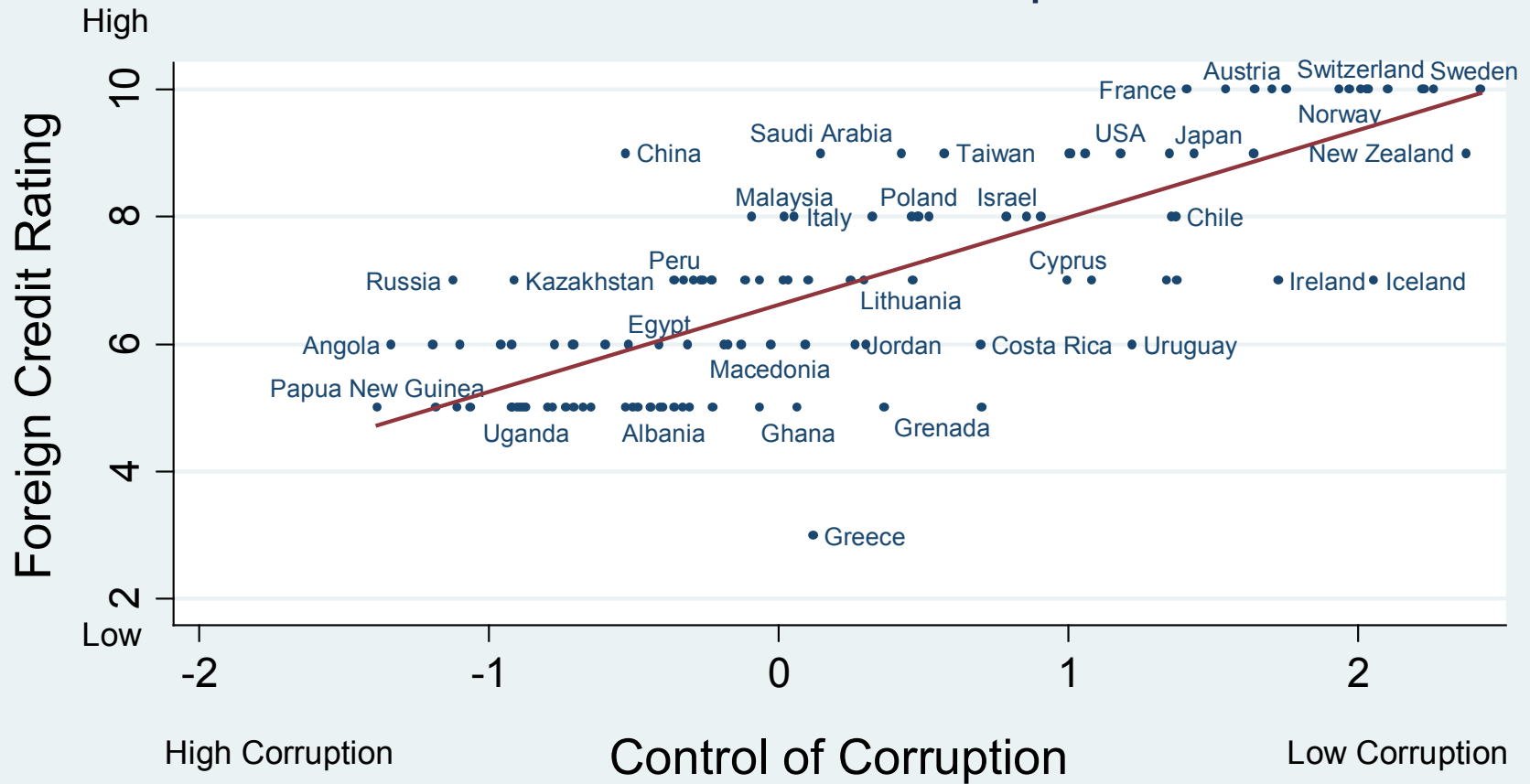# Human Development Index vs. Control of Corruption

High

Human Development Index

Low

High Corruption

Control of Corruption

Low Corruption

Countries shown on the plot include: Norway, Denmark, Finland, Belgium, France, Japan, Italy, USA, Sweden, South Korea, Greece, Israel, Chile, Bahamas, Singapore, Argentina, Mexico, Latvia, Russia, Venezuela, Azerbaijan, Oman, Eq. Guinea, Grenada, Solomon Islands, Tajikistan, Egypt, South Africa, Myanmar, India, Namibia, Botswana, Cambodia, Ghana, Bhutan, Haiti, Nigeria, Benin, Djibouti, Lesotho, Eritrea, Angola, Dem. Rep. Congo, Niger, Sierra Leone, Mali, Burkina Faso.

R²=0.47

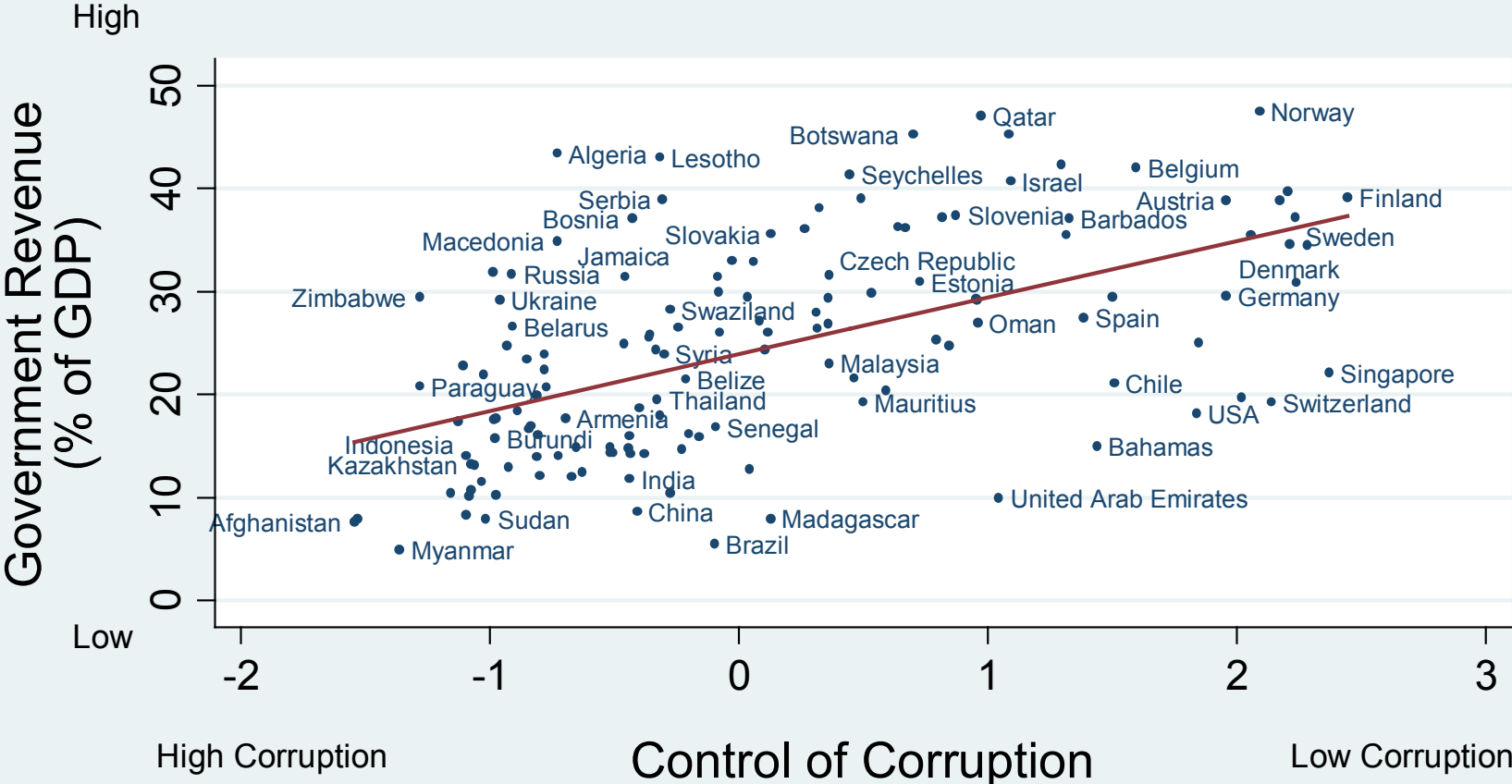Sources: UNDP (2002), World Bank (2002-2008)

Data runs by: Richard Svensson

Government Revenue
vs. Control of Corruption

R²=0.30

Sources: World Development Indicators (1996-2008), World Bank (2002-2008)

Data runs by: Richard Svensson

Tax Revenue
vs. Control of Corruption
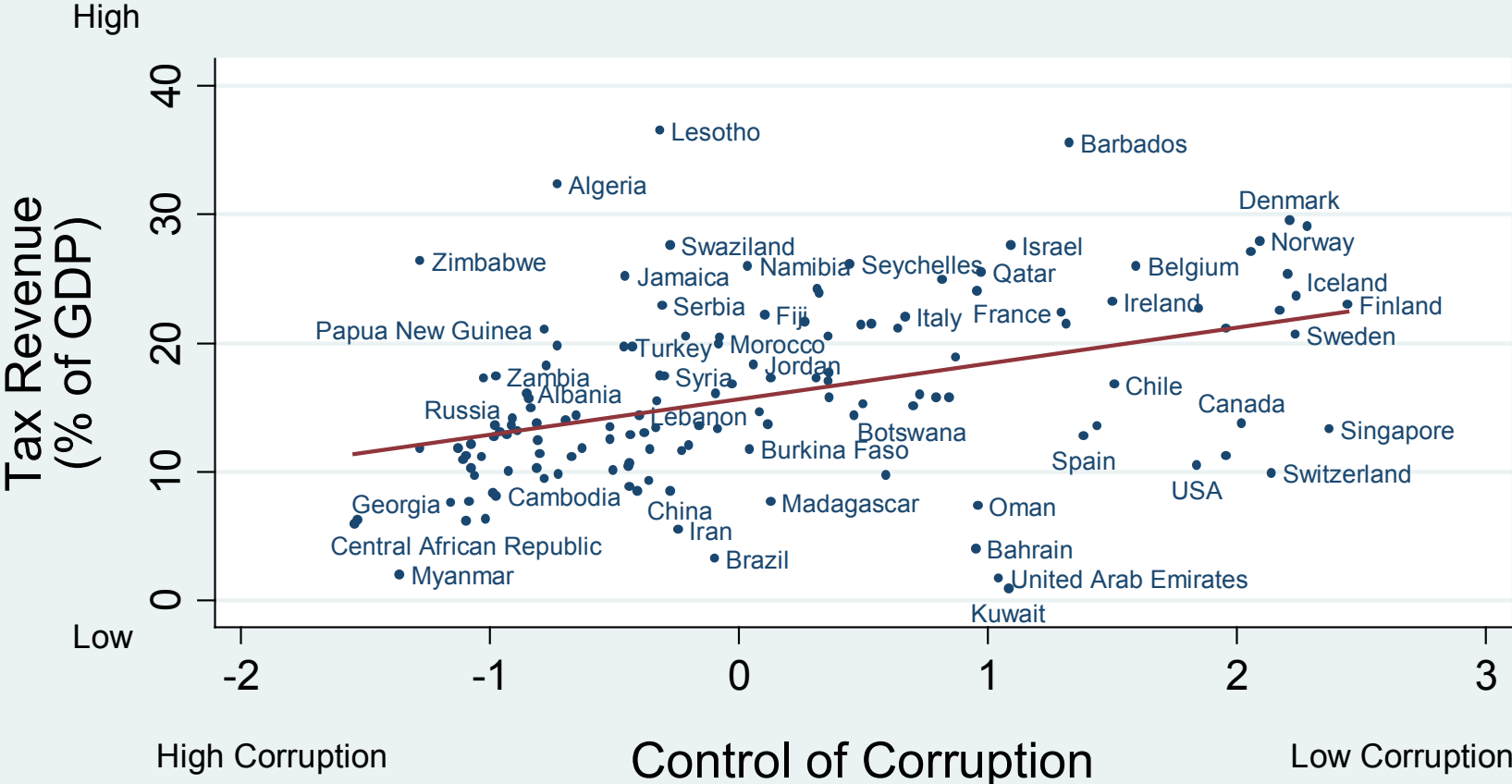
R²=0.17

Sources: World Development Indicators (1996-2008), World Bank (2002-2008)

Data runs by: Richard Svensson

Social Security Laws Index vs. Control of Corruption
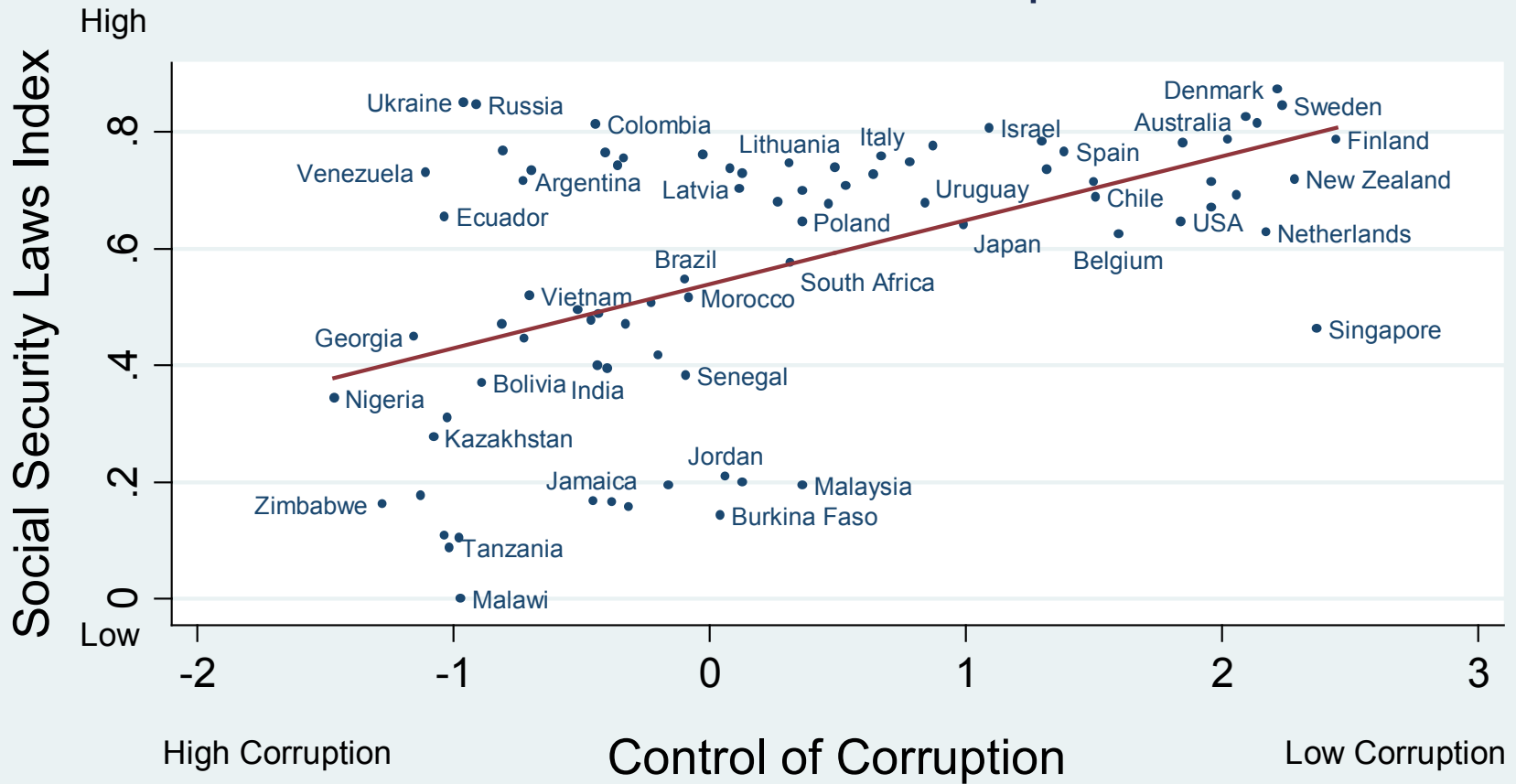
R²=0.27

Sources: Botero et al (1997-2002), World Bank (2002-2008)

Data runs by: Richard Svensson

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Average Schooling Years vs. Control of Corruption

R²=0.65
Sources: Barro & Lee (2000), World Bank (2002-2008)

Data runs by: Richard Svensson

Life Expectancy at Birth vs. Control of Corruption
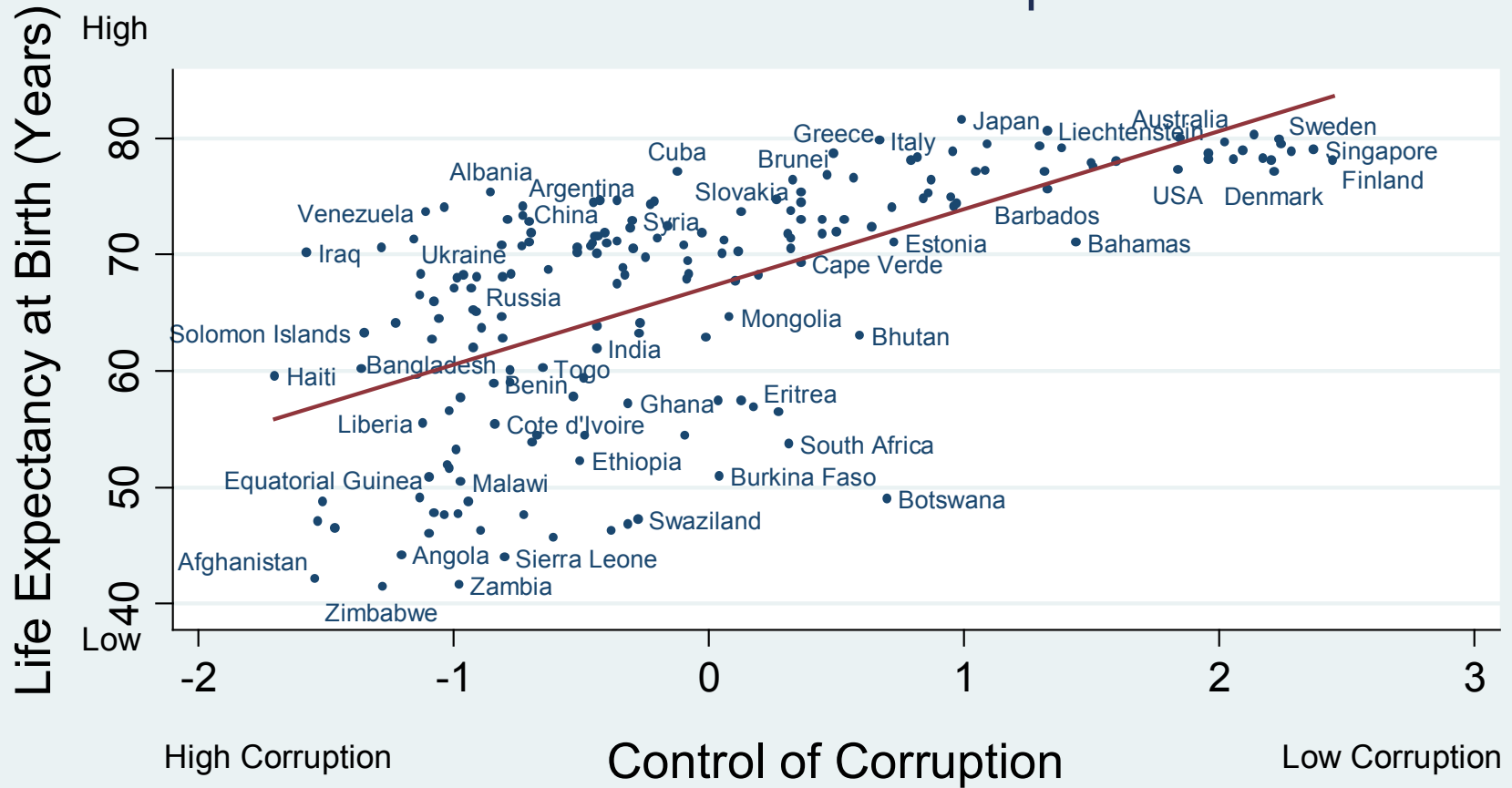
R²=0.41
Source: World Bank (2000-2008)

Data runs by: Richard Svensson

Healthy Life Years
vs. Control of Corruption

High

Low

Healthy Life Years (y-axis: 30, 40, 50, 60, 70, 80)

Control of Corruption (x-axis: -2, -1, 0, 1, 2, 3)

High Corruption

Low Corruption

Labeled countries: Japan, Spain, Australia, Sweden, Greece, Italy, Belgium, Switzerland, Finland, Slovenia, Chile, USA, Denmark, Argentina, Panama, Cuba, Slovakia, Bahamas, Paraguay, Ecuador, Syria, Antigua and Barbuda, Russia, Guatemala, Grenada, Solomon Islands, Mongolia, Myanmar, Tuvalu, Bhutan, Kiribati, Iraq, Yemen, Ghana, Haiti, South Africa, Nigeria, Djibouti, Ethiopia, Mali, Afghanistan, Botswana, Zimbabwe, Mozambique, Swaziland, Angola, Lesotho, Sierra Leone

R²=0.44

Sources: WHO (-), World Bank (2002-2008)

Data runs by: Richard Svensson

Infant Mortality
vs. Control of Corruption
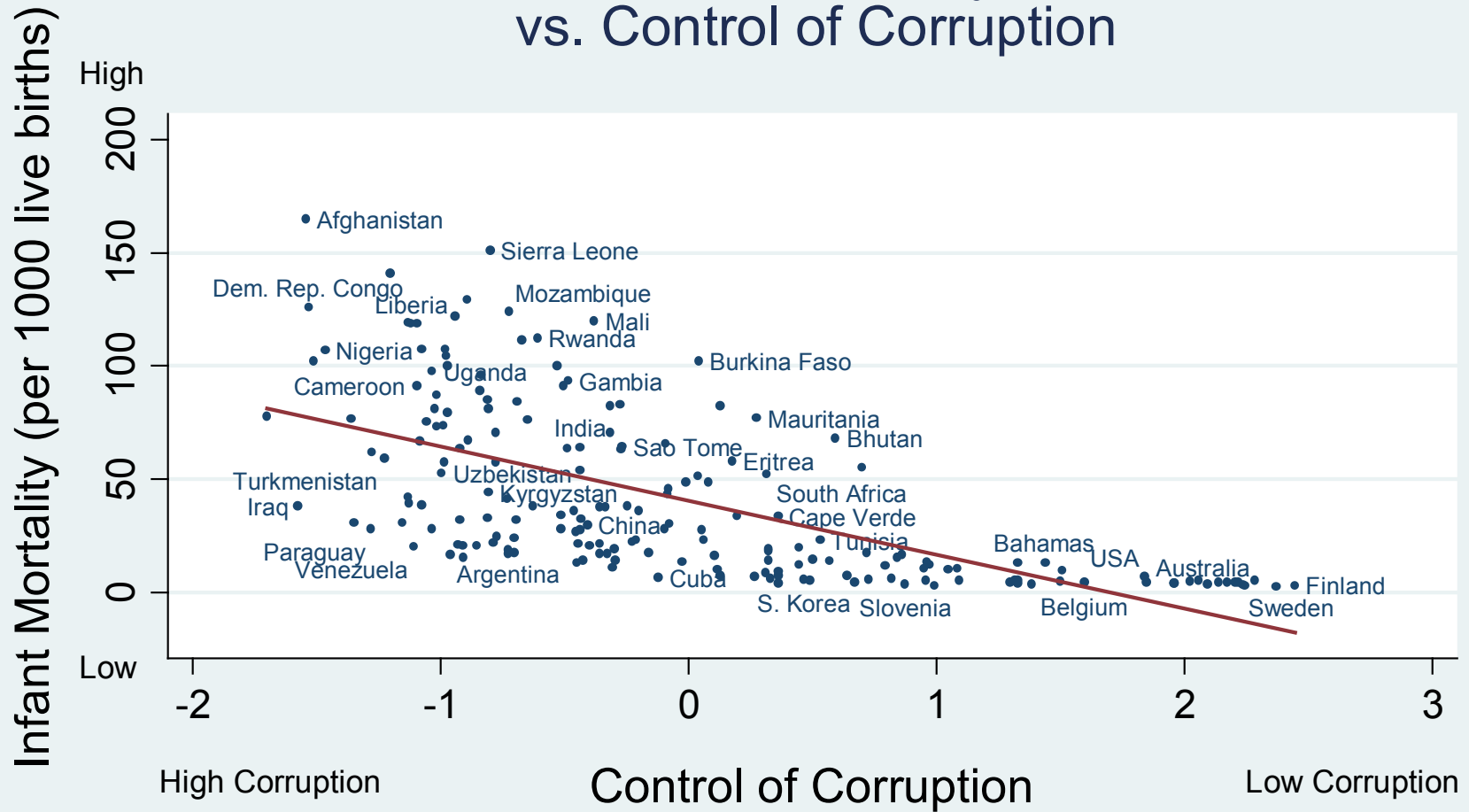
R²=0.40

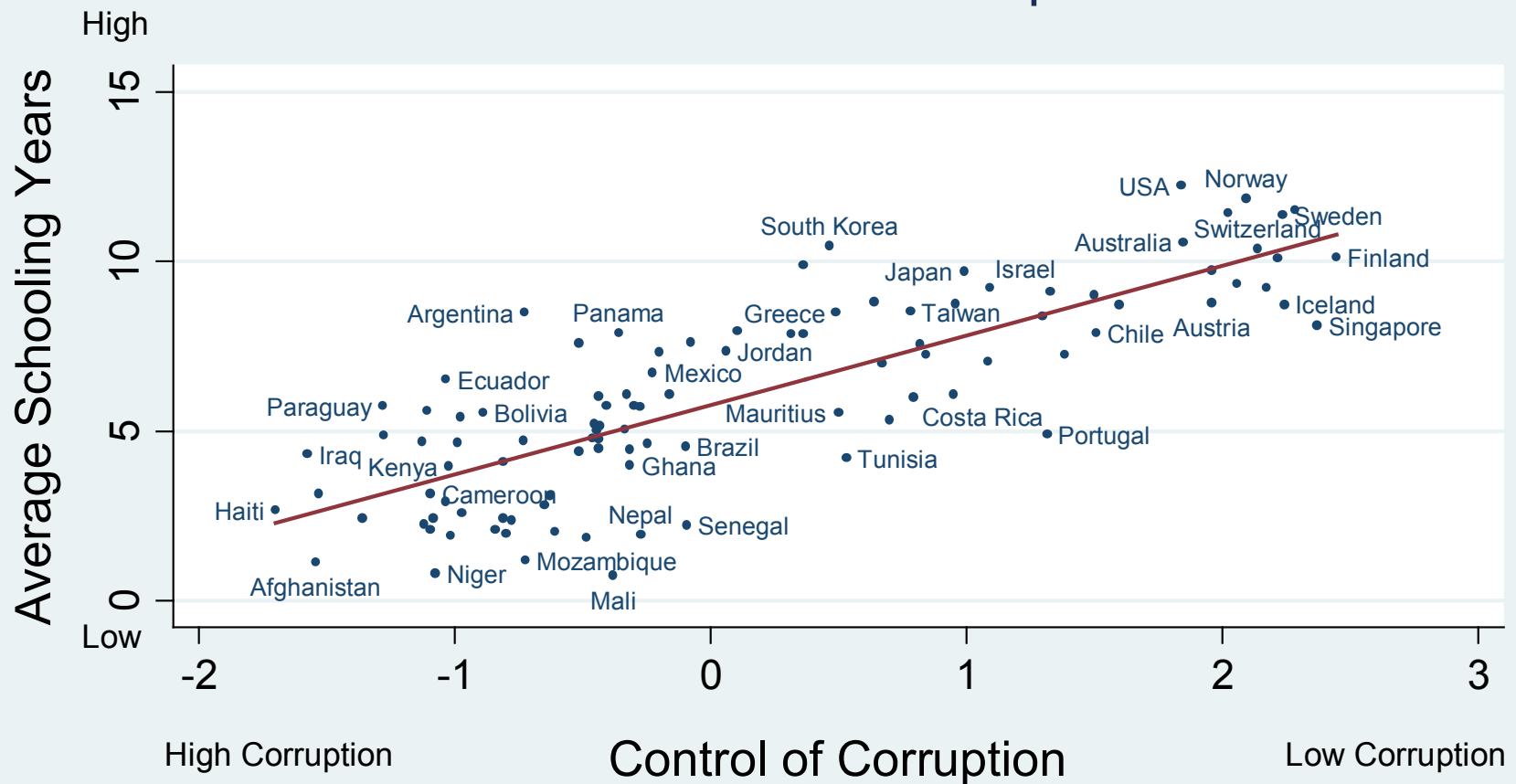Source: World Bank (2000-2008)

Data runs by: Richard Svensson

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Maternal Mortality Ratio vs. Control of Corruption
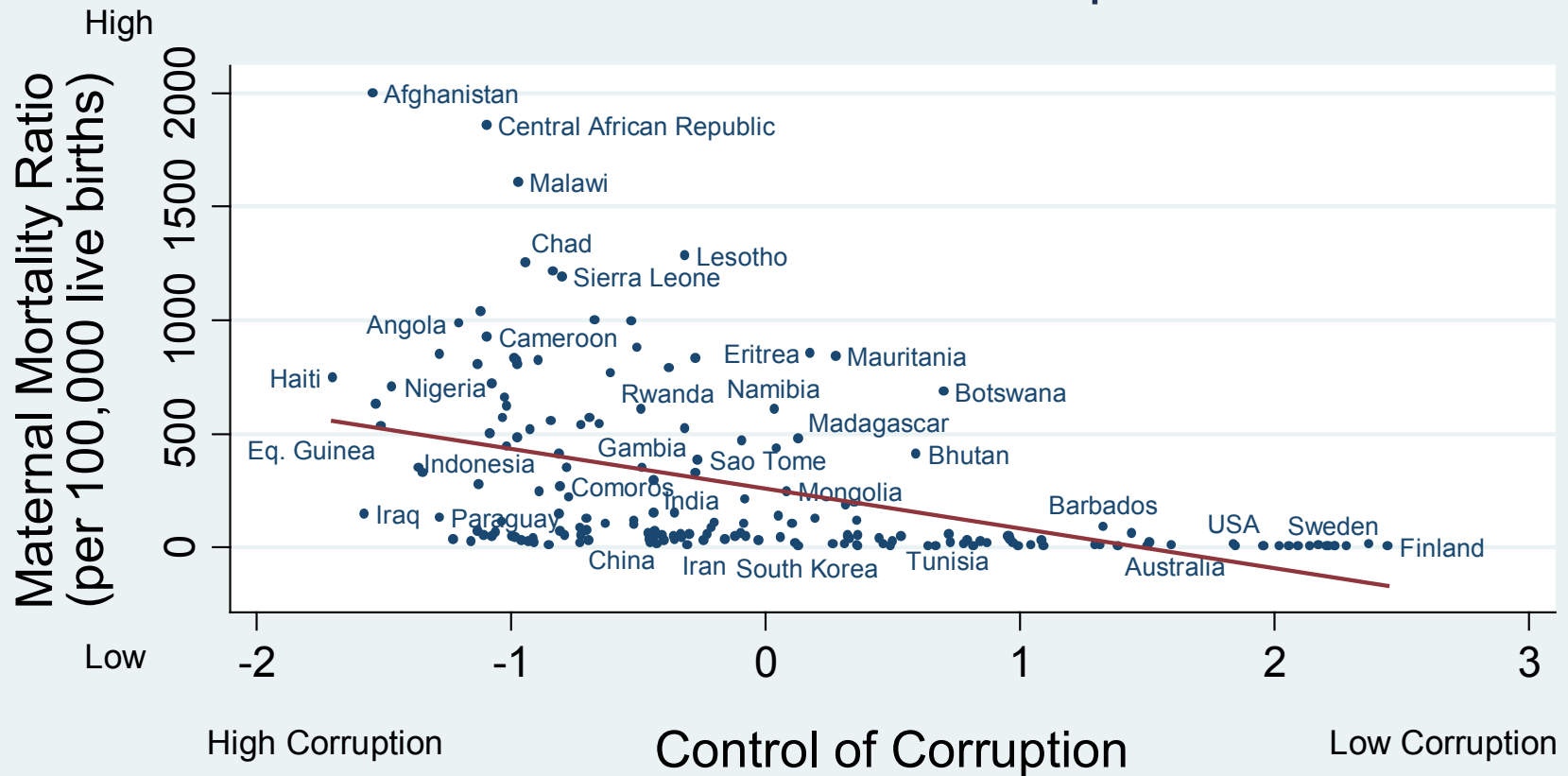
R²=0.22

Sources: Institute for Health Metrics and Evaluation - University of Washington (2002),
World Bank (2002-2008)

Data runs by: Richard Svensson

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Government Expenditure on Health vs. Control of Corruption

R²=0.20
Sources: WHO (2001-2002), World Bank (2002-2008)

Data runs by: Richard Svensson

19

Private Expenditure on Health
vs. Control of Corruption
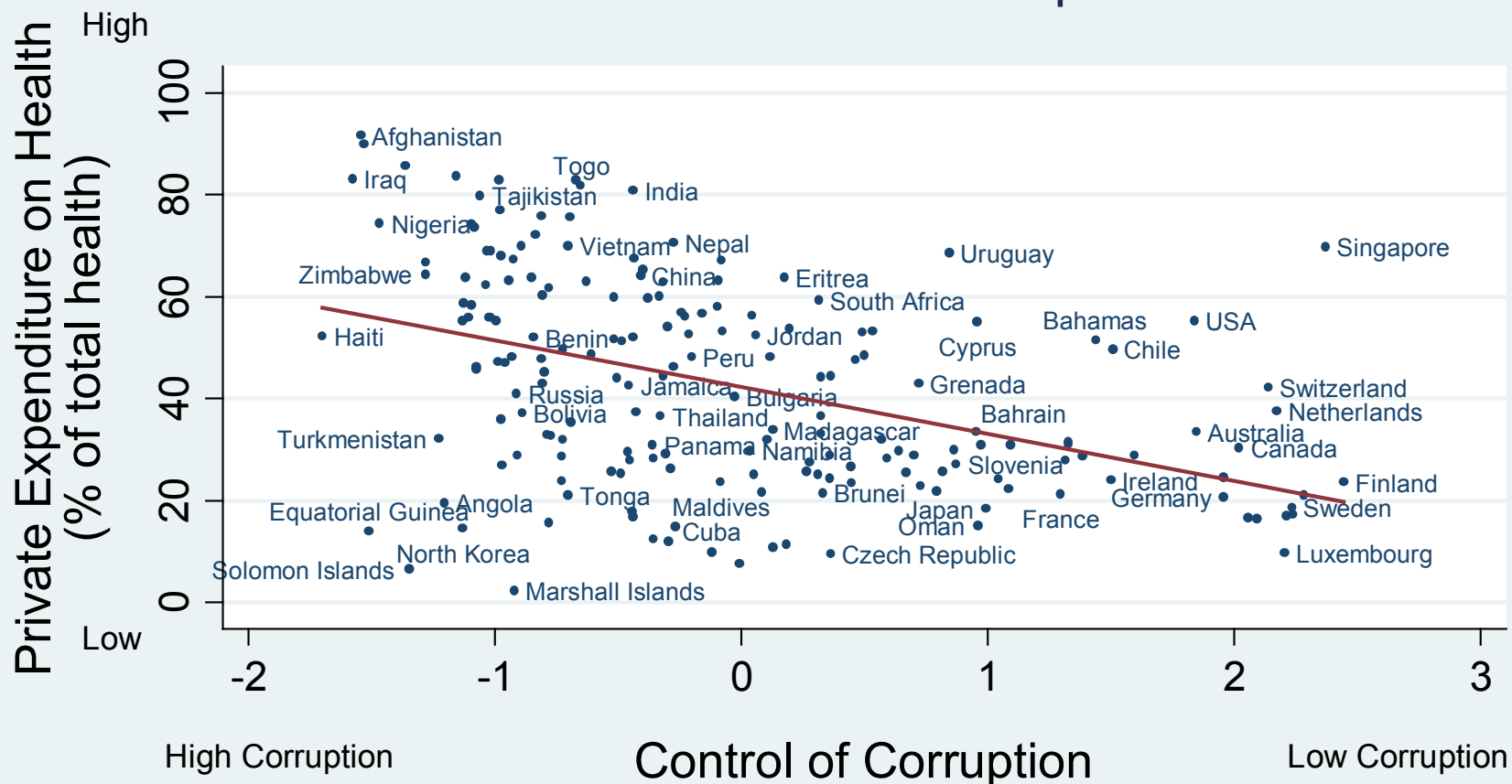
R²=0.20

Sources: WHO (2001-2002), World Bank (2002-2008)

Data runs by: Richard Svensson

Carbon Dioxide Emissions
vs. Control of Corruption

High

Carbon Dioxide Emissions (tons per capita)

Low

Equatorial Guinea
Djibouti
Belize
Suriname
Qatar
Comoros
Swaziland
Mauritius
United Arab Emirates
Kazakhstan
Bolivia
Australia
Gambia
Bahrain
USA
Luxembourg
Angola
Trinidad and Tobago
Mauritania
New Zealand
Bhutan
Russia
Mongolia
Netherlands
Indonesia
Gabon
Belgium
Finland
Myanmar
Bulgaria
Japan
Spain
Austria
Hungary
Israel
Haiti
Chile
Sweden
Afghanistan
Bangladesh
Yemen
Tunisia

-2   -1   0   1   2   3

High Corruption

Control of Corruption

Low Corruption

R²=0.02

Sources: Environmental Performance Index (2000-2005), World Bank (2002-2008)

Data runs by: Richard Svensson

Access to Improved Drinking Water (%) vs. Control of Corruption
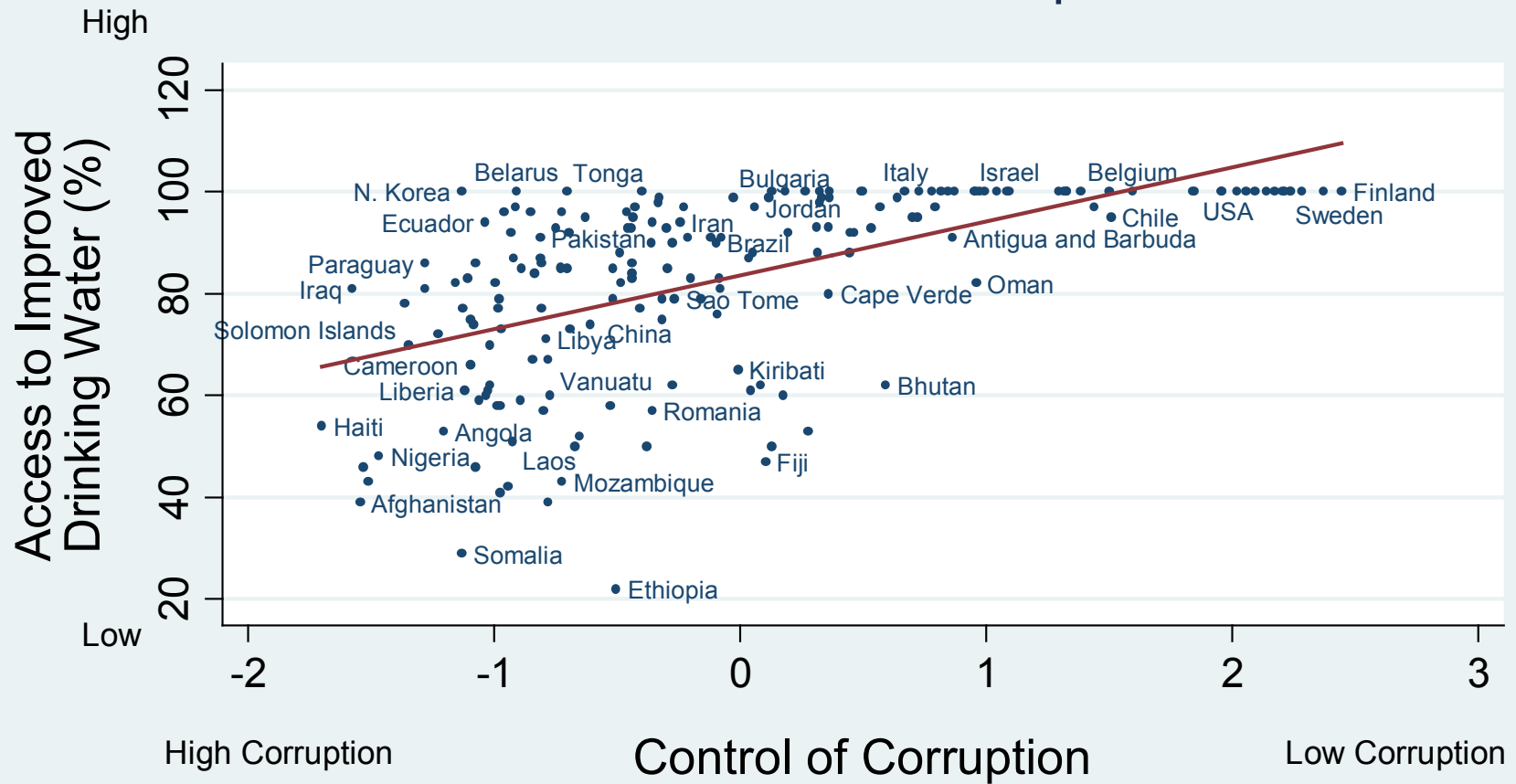
R²=0.34

Sources: Esty et al / WHO (2004), World Bank (2002-2008)

Data runs by: Richard Svensson

Access to Adequate Sanitation vs. Control of Corruption
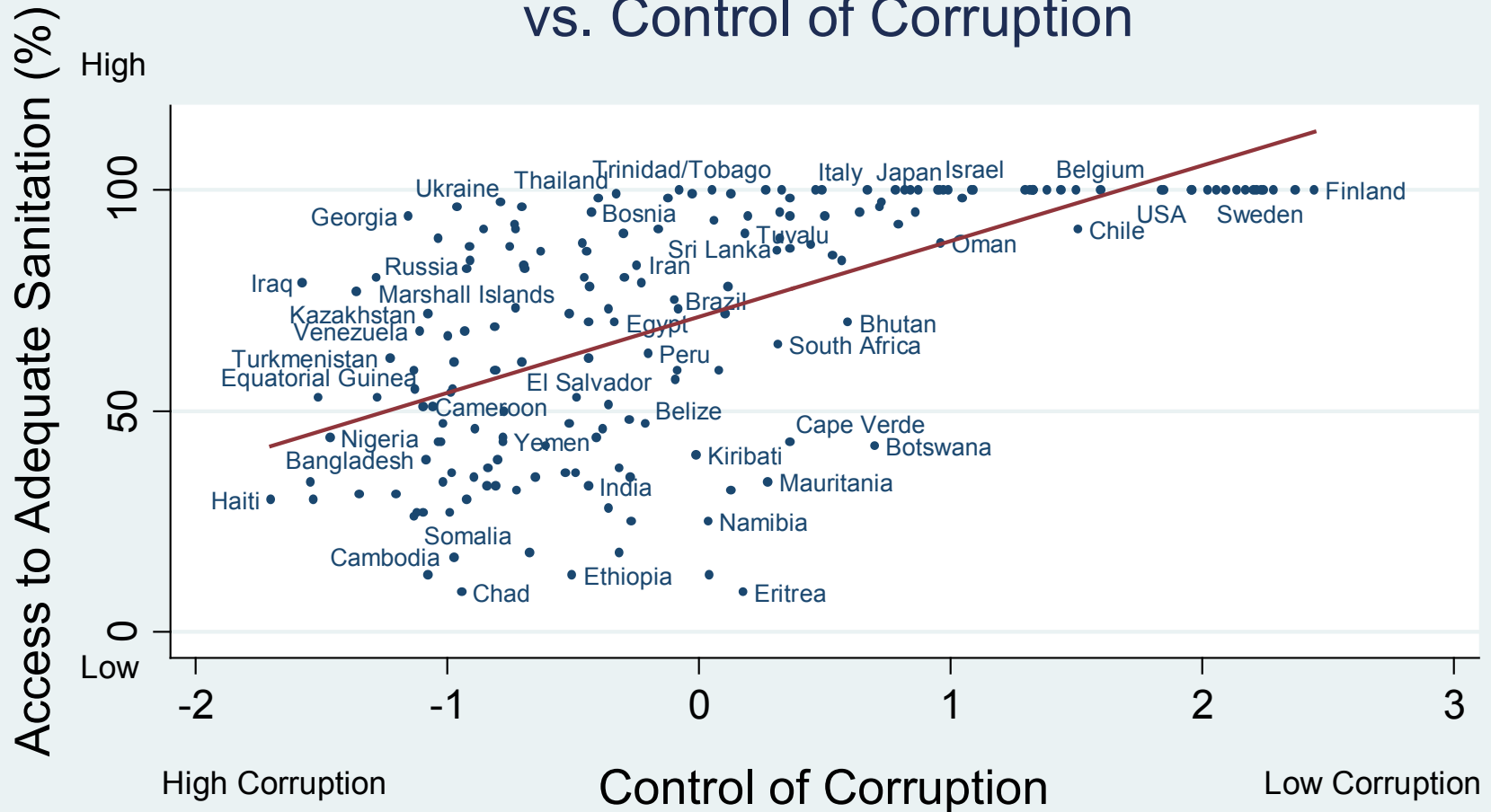
R²=0.38

Sources: Environmental Performance Index (2004-), World Bank (2002-2008)

Data runs by: Richard Svensson

Gender Equality
vs. Control of Corruption

R²=0.20

Sources: World Economic Forum (2005), World Bank (2002-2008)

Data runs by: Richard Svensson
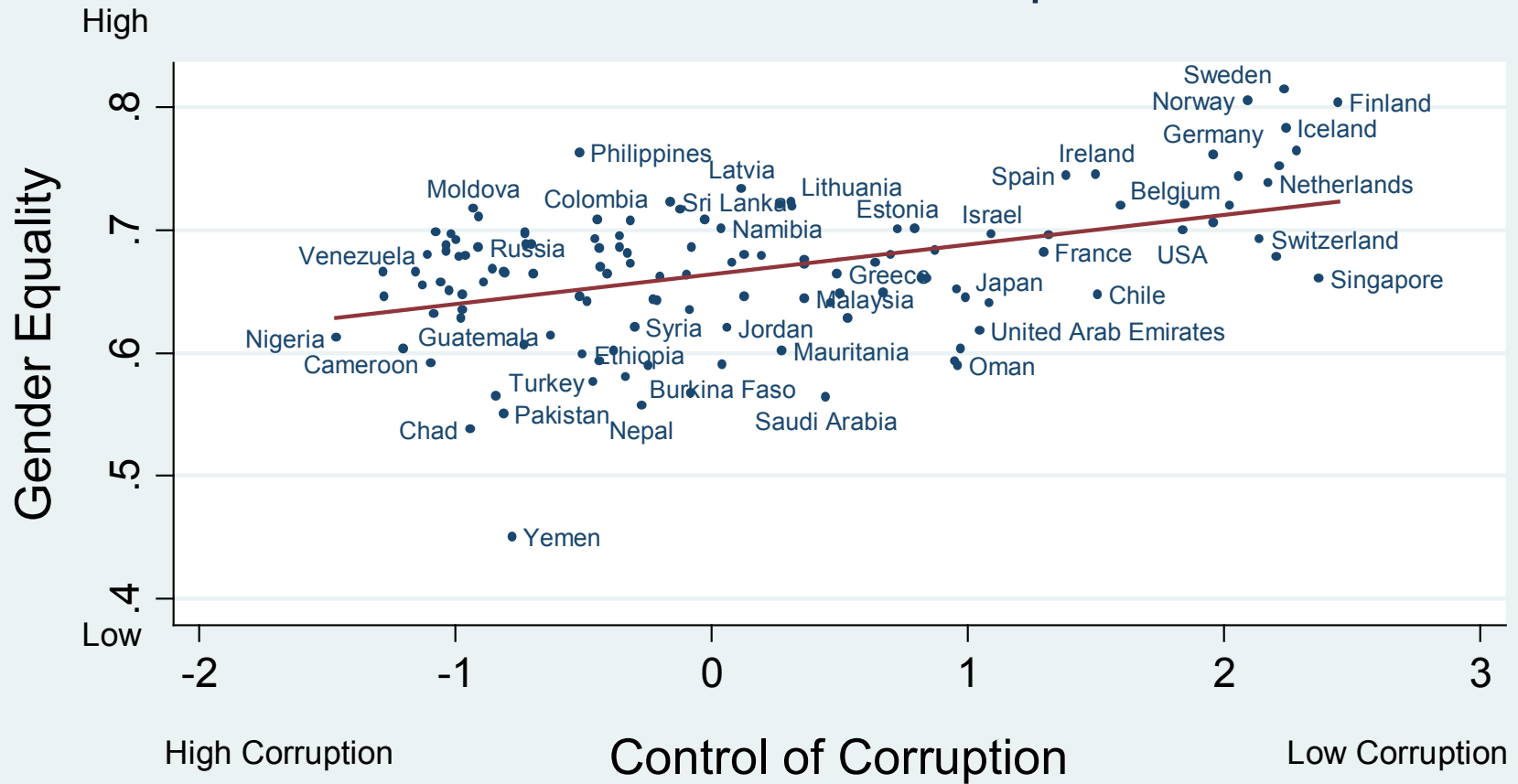
Secondary Education Enrollment (Female) vs. Control of Corruption
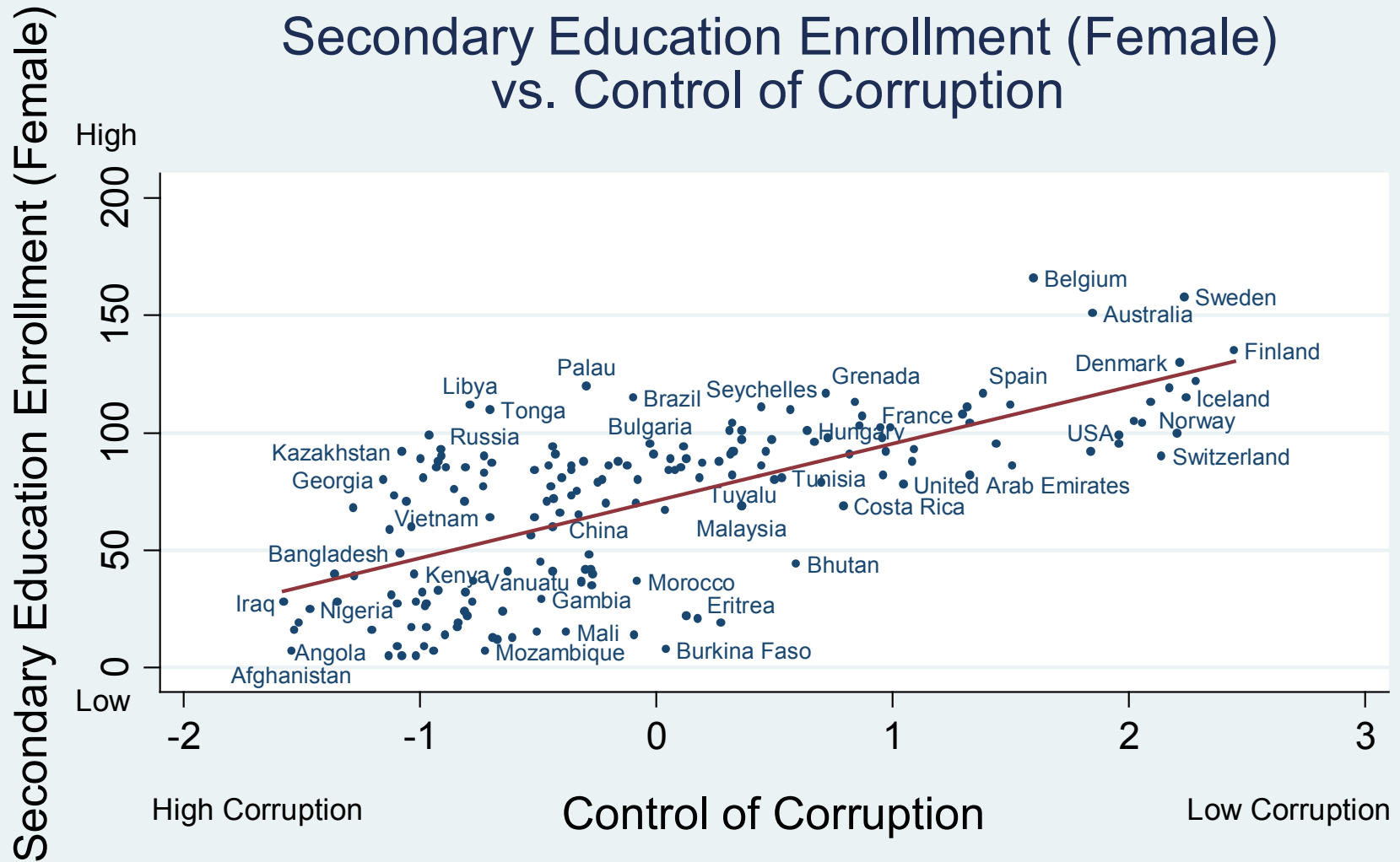
R²=0.45
Sources: UNESCO (1999-2009), World Bank (2002-2008)

Data runs by: Richard Svensson

Homicide rate
vs. Control of Corruption

High

Homicide rate
(per 100,000 population)

60

40

20

0

Low

- Colombia
- Cote d'Ivoire
- El Salvador
- South Africa
- Venezuela
- Burundi
- Jamaica
- Democratic Republic of the Congo
- Central African Republic
- Sudan
- Guatemala
- Brazil
- Angola
- Russia
- Belize
- Zambia
- Haiti
- Rwanda
- Mali
- Eritrea
- Botswana
- Bahamas
- Myanmar
- Barbados
- Estonia
- Comoros
- Chile
- Iraq
- Cuba
- USA
- Afghanistan
- Mauritius
- Australia
- Sweden
- China
- Singapore
- Nigeria
- Tonga
- Liechtenstein
- Indonesia
- Egypt
- Brunei
- Malta

-2   -1   0   1   2   3

High Corruption

Control of Corruption

Low Corruption

R²=0.13

Sources: UN Data (2010), World Bank (2002-2008)

Data runs by: Richard Svensson

Number of Police Officers
vs. Control of Corruption
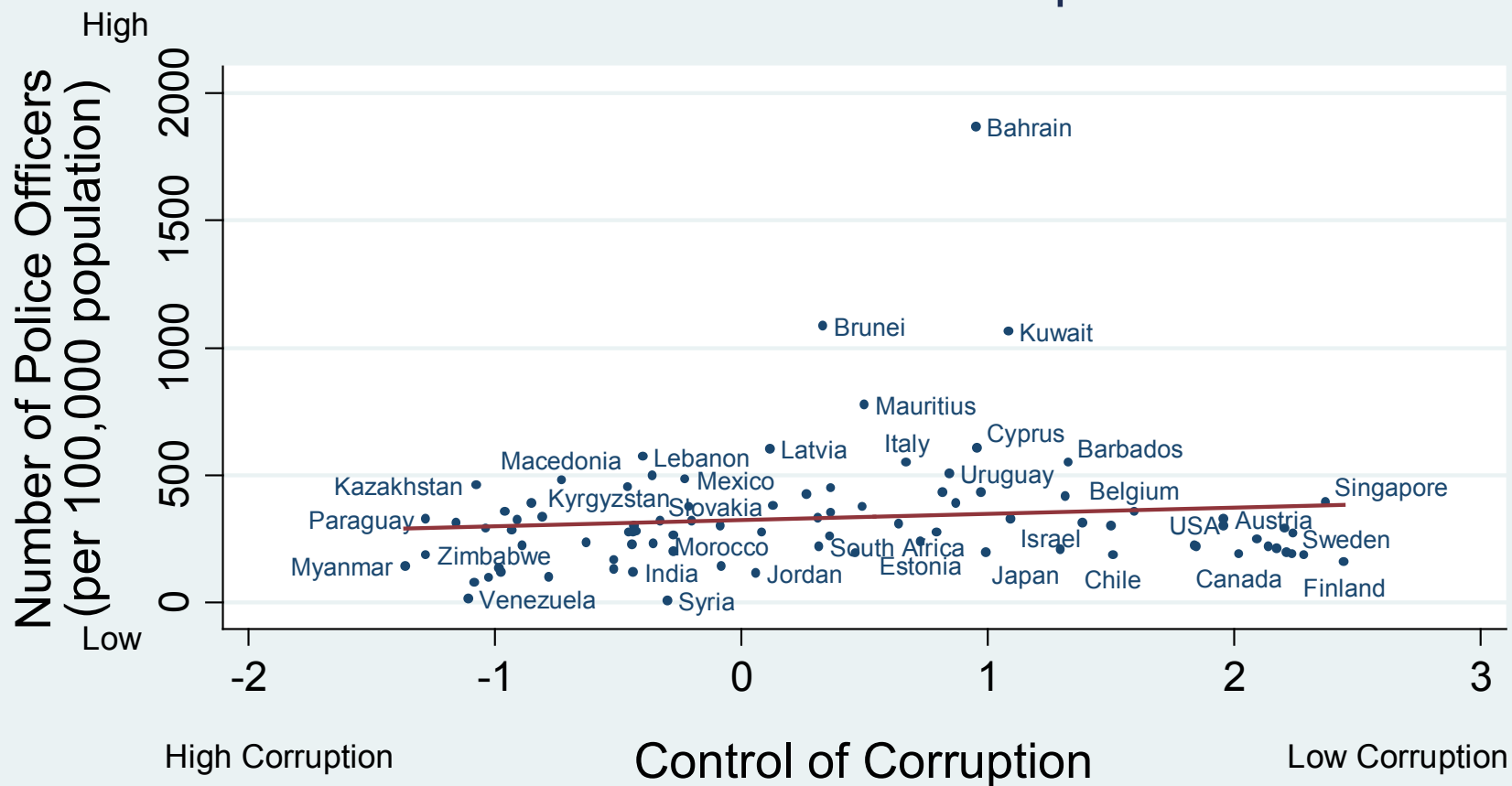
R²=0.01

Sources: UN Data (2010), World Bank (2002-2008)

Data runs by: Richard Svensson

Number of Prisoners
vs. Control of Corruption
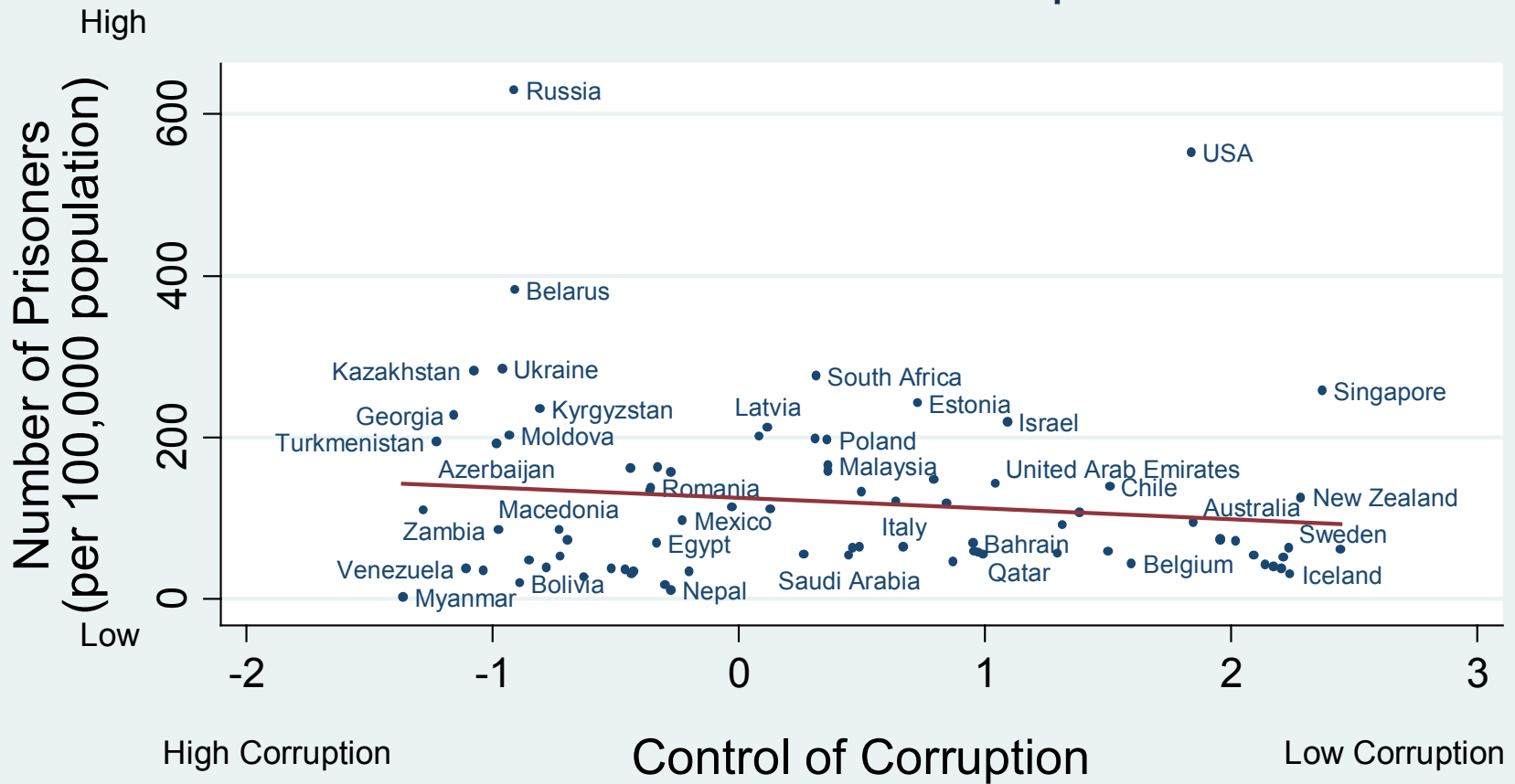
R²=0.02
Sources: UNODC (2000-2006), World Bank (2002-2008)

Data runs by: Richard Svensson

Interpersonal Trust
vs. Control of Corruption

R²=0.20

Sources: World Values Survey (1996-2008), World Bank (2002-2008)

Data runs by: Richard Svensson

Confidence in Parliament vs. Control of Corruption

R²=0.00
Sources: World Values Survey (1996-2008), World Bank (2002-2008)

Data runs by: Richard Svensson

Confidence in Parliament
vs. Control of Corruption

R²=0.00

Sources: World Values Survey (1996-2008), World Bank (2002-2008)

N.B. Only democracies (countries with a FreedomHouse/Polity rating above 6) are included. Bangladesh is also excluded.

Data runs by: Richard Svensson

Confidence in Government
vs. Control of Corruption

R²=0.02
Sources: World Values Survey (1996-2008), World Bank (2002-2008)

Data runs by: Richard Svensson

Confidence in Government vs. Control of Corruption

High

Confidence in Government

Mali • • Ghana

Switzerland

Venezuela • • Albania • India

Uruguay

Finland

Indonesia

South Africa

• Chile

Norway

Philippines

Croatia

Estonia

Spain

Sweden

Zambia

USA

Thailand

Brazil

Lithuania

Colombia

Moldova • Guatemala

Mexico

Latvia

Andorra

United Kingdom

Ukraine

Serbia

Czech Republic

Italy

Taiwan

Japan

Germany

Netherlands

Romania

Peru

Slovenia

France

Argentina

Dominican Republic

Poland

Macedonia

Low

-1   0   1   2   3

High Corruption   Control of Corruption   Low Corruption

R²=0.02

Sources: World Values Survey (1996-2008), World Bank (2002-2008)

N.B. Only democracies (countries with a FreedomHouse/Polity rating above 6) are included. Bangladesh is also excluded.

Data runs by: Richard Svensson

Feeling of Happiness vs. Control of Corruption
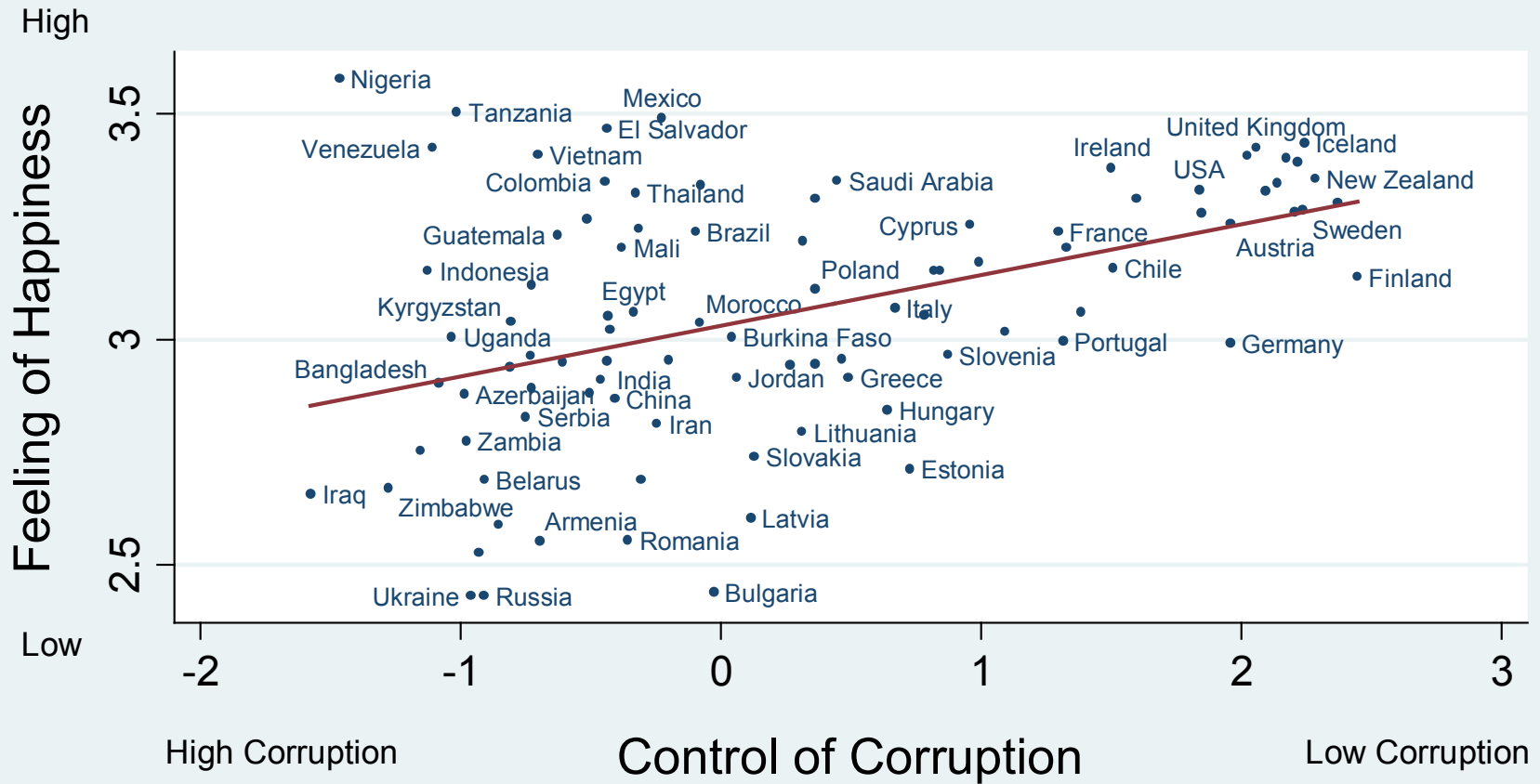
R²=0.21

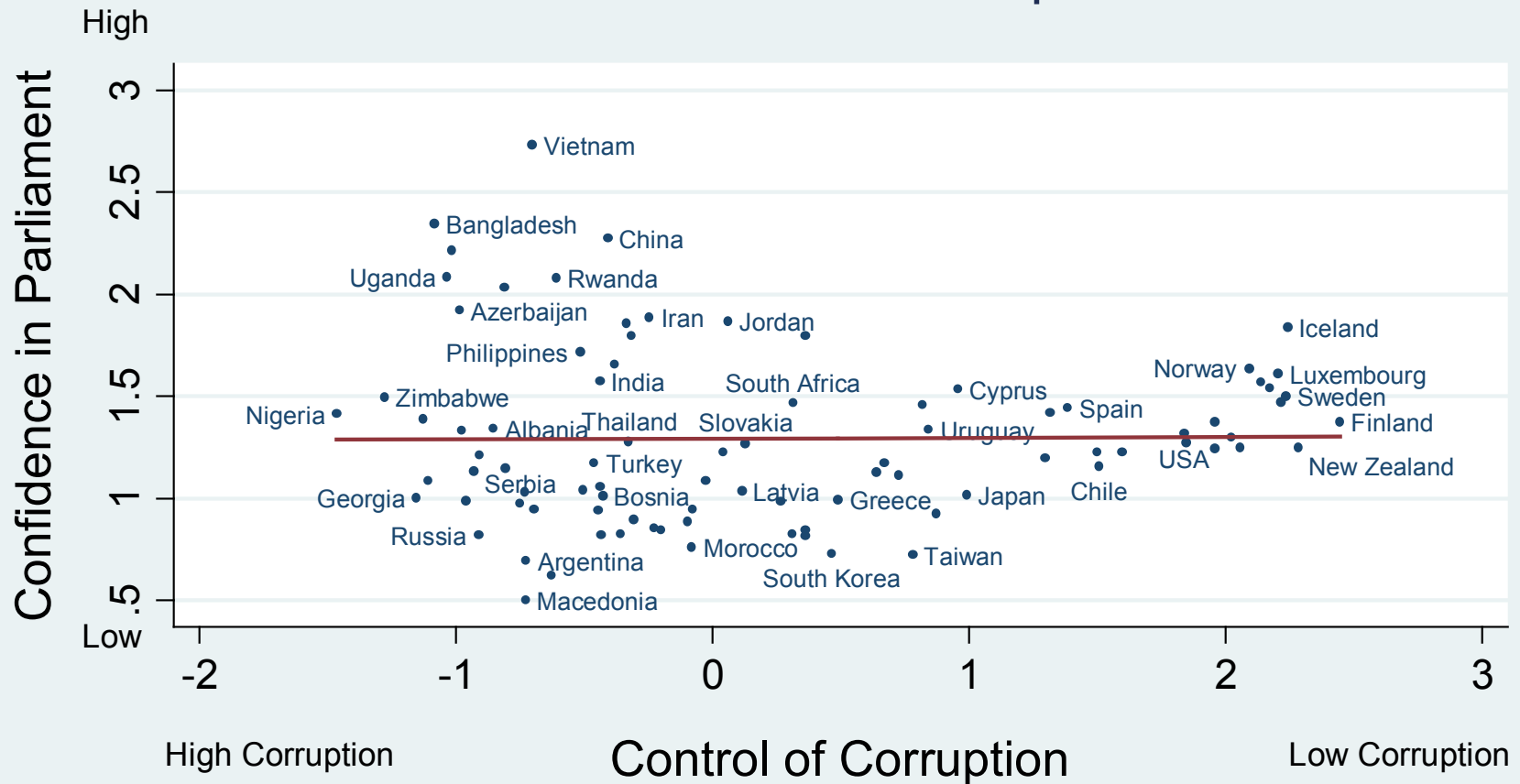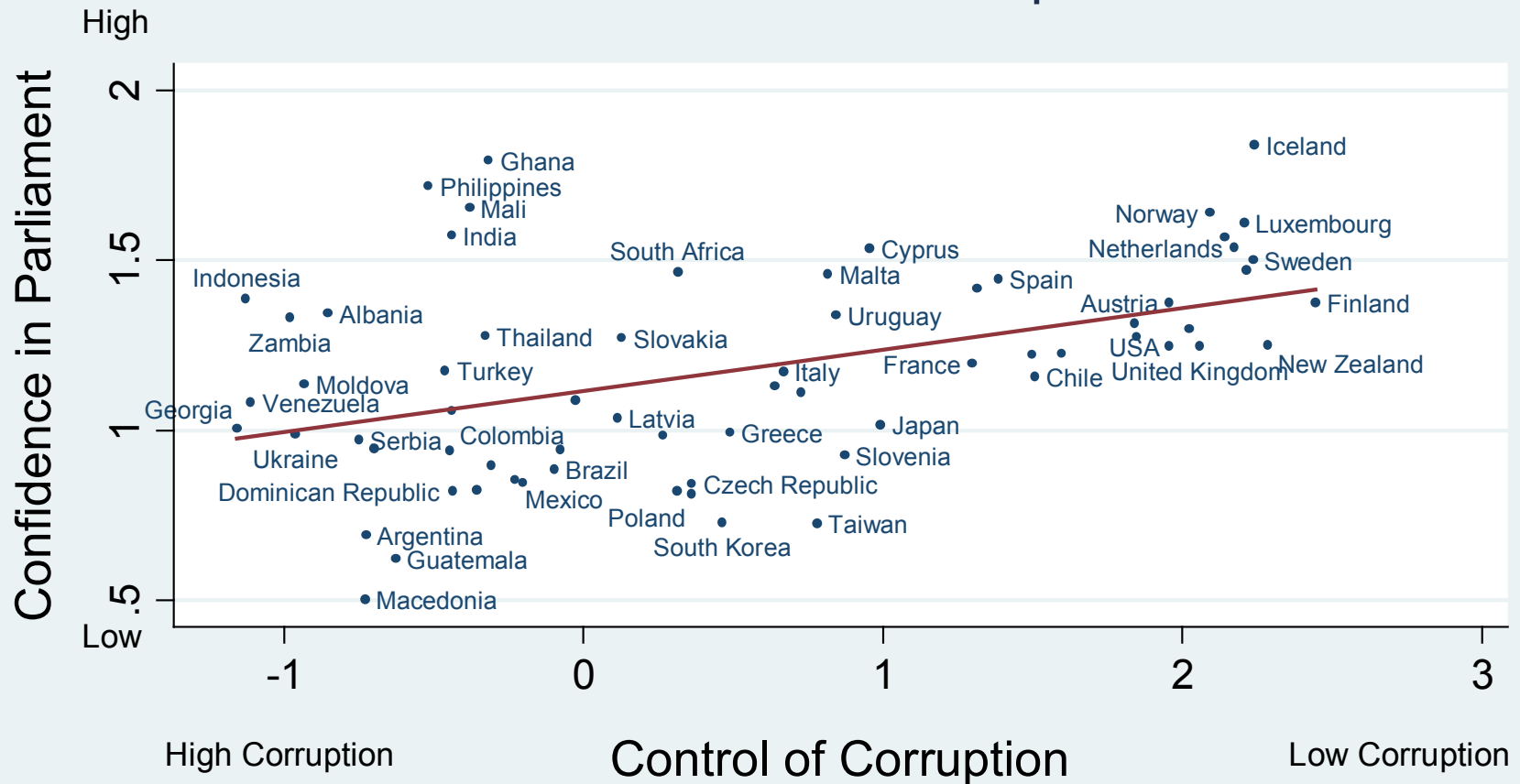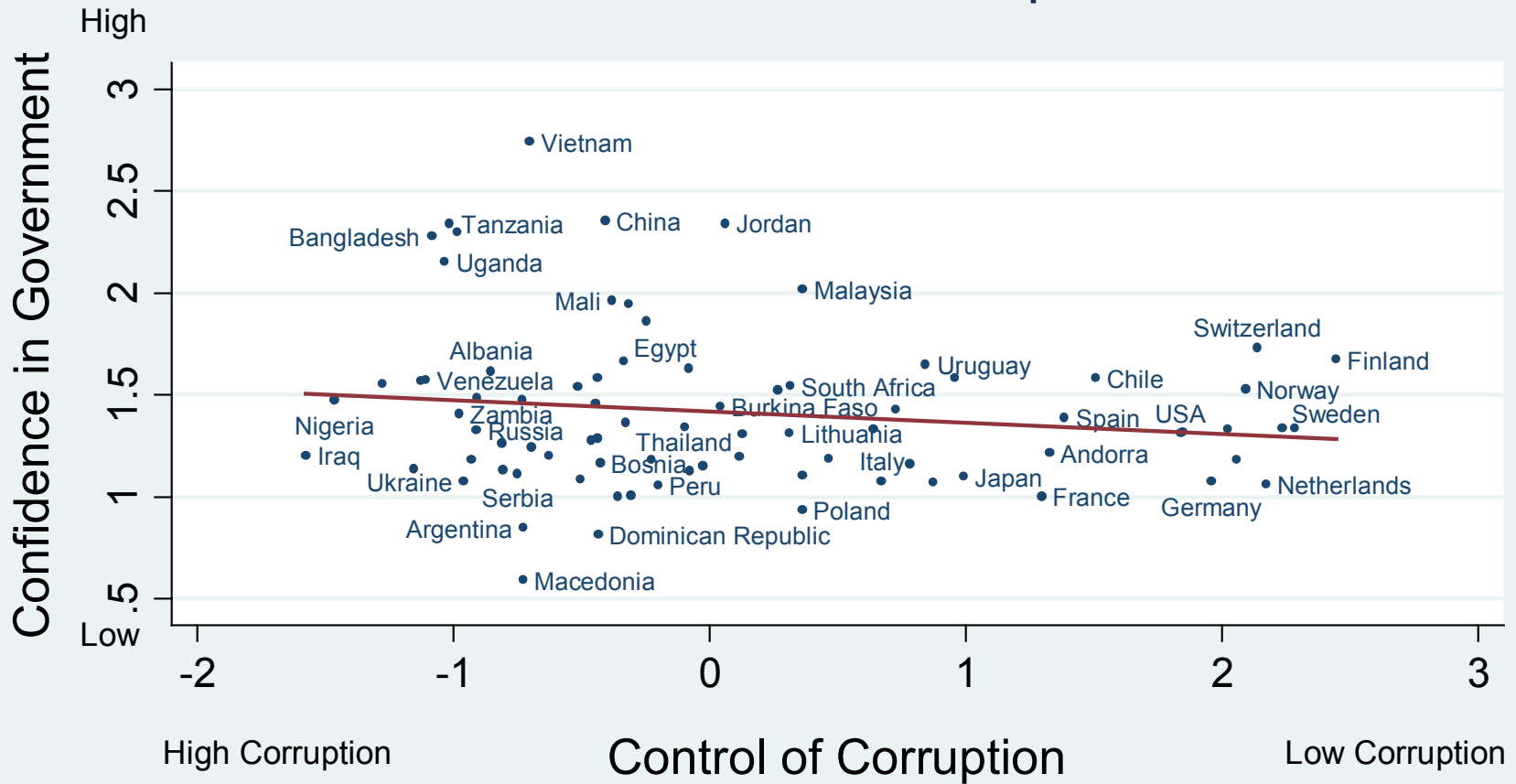Sources: World Values Survey (1996-2008), World Bank (2002-2008)

Data runs by: Richard Svensson
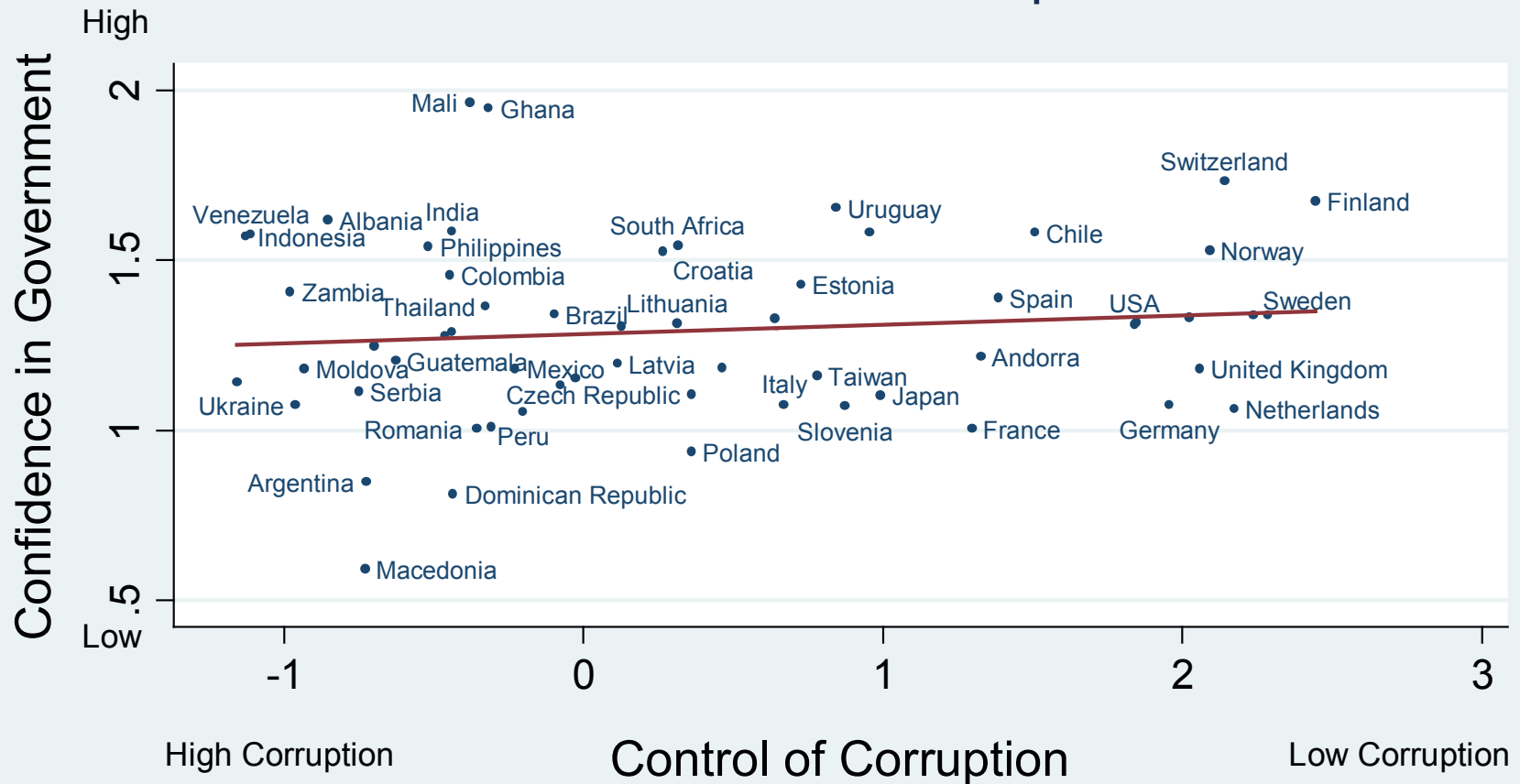
Life Satisfaction
vs. Control of Corruption
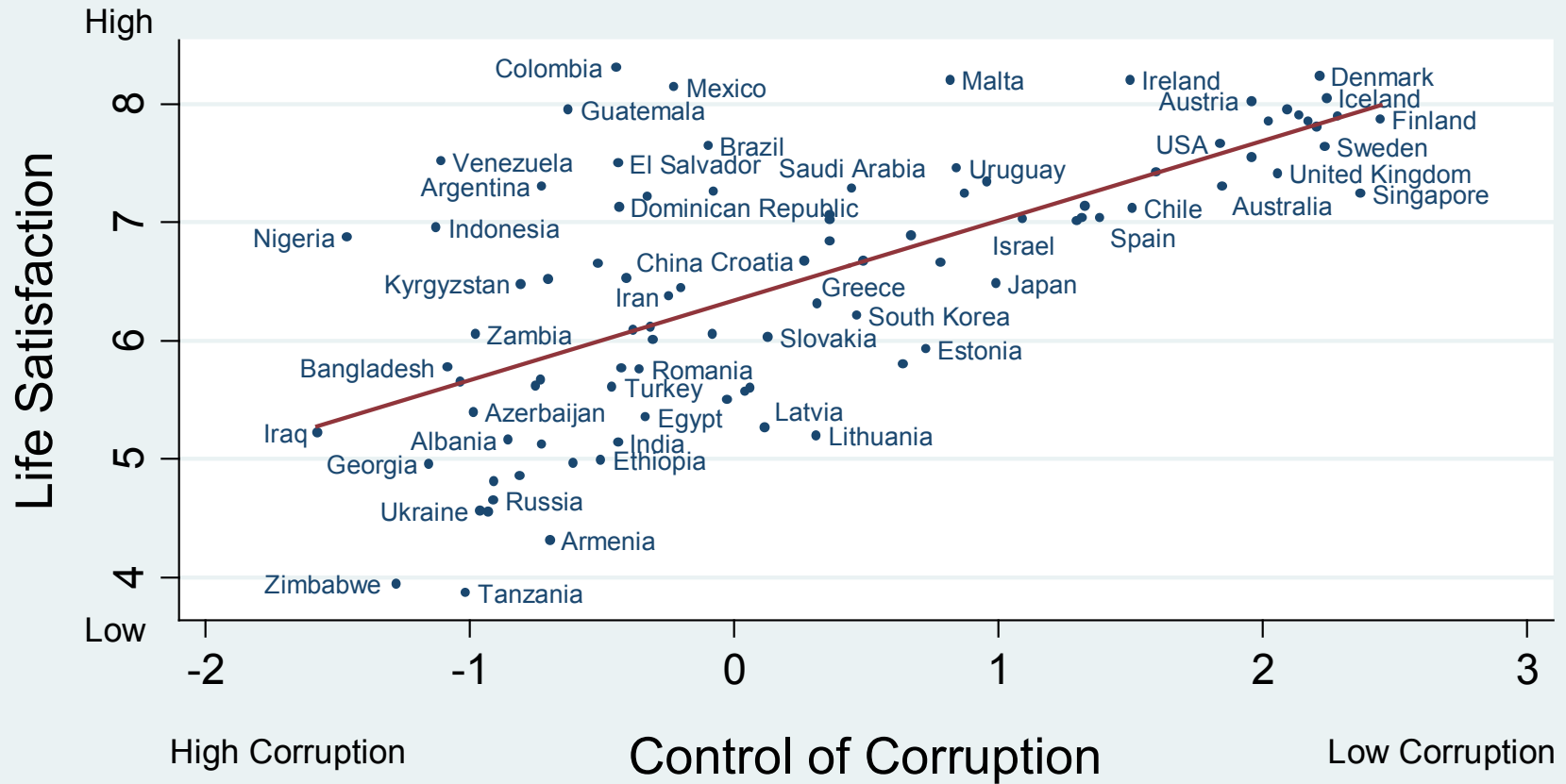
R²=0.46

Sources: World Values Survey (1996-2008), World Bank (2002-2008)

Data runs by: Richard Svensson

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Level of Democracy vs. Control of Corruption
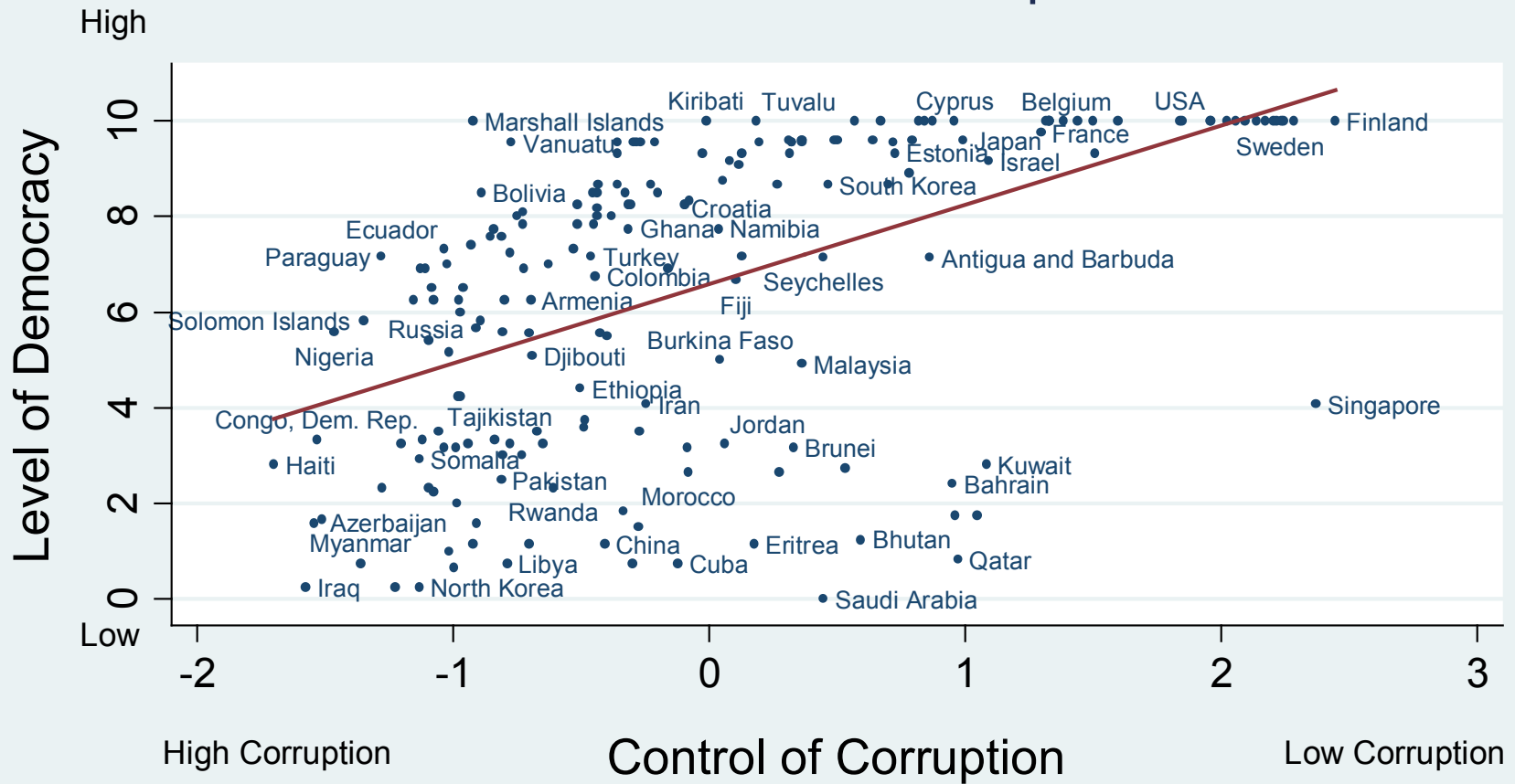
R²=0.27
Sources: Freedom House/Polity (2002-2006), World Bank (2002-2008)
Data runs by: Richard Svensson

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Government Effectiveness
vs. Control of Corruption

R²=0.88

Sources: Freedom House/Polity (2002-2006), World Bank (2002-2008)

Data runs by: Richard Svensson

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Control of Corruption 2009
vs. Control of Corruption 2002

R²=0.88

Sources: World Bank (2009), World Bank (2002)
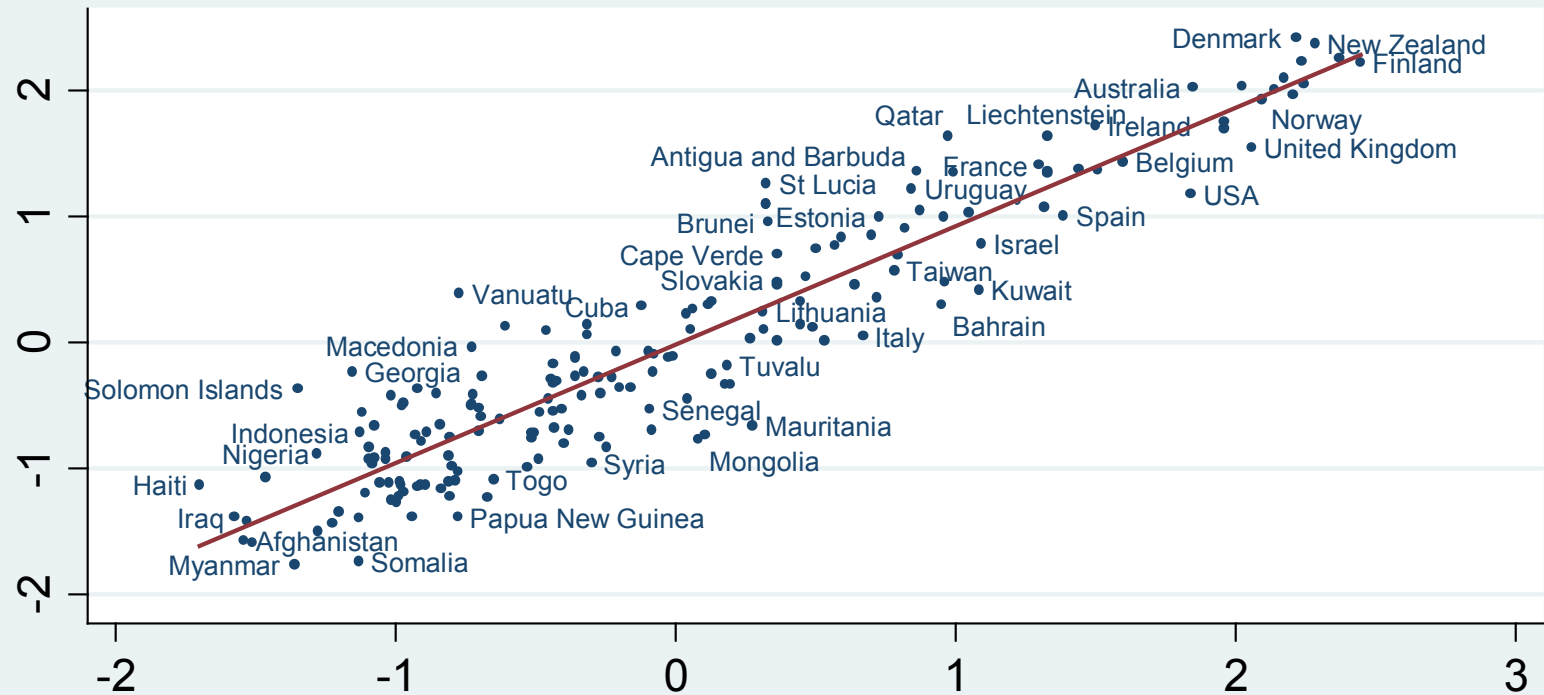
Data runs by: Richard Svensson

Correlates of Corruption – Description of Variables[1]

■■■

Control of Corruption – World Bank Governance Indicators
"Control of Corruption" measures perceptions of corruption, conventionally defined as the exercise of public power for private gain. The particular aspect of corruption measured by the various sources differs somewhat, ranging from the frequency of "additional payments to get things done", to the effects of corruption on the business environment, to measuring "grand corruption" in the political arena or in the tendency of elite forms to engage in "state capture".

■■■

GDP / Capita – Gleditsch Trade and GDP Data
In order to fill in gaps in the Penn World Table's mark 5.6 and 6.2 data (see below: Heston, Summers & Aten), Gleditsch has imputed missing data by using an alternative source of data (the CIA *World Fact Book*), and through extrapolation beyond available time-series. This is his estimate of GDP per Capita in US dollars at current year international prices.

Economic Equality (Gini index) – World Development Indicators
Gini measure of economic inequality, where greater values represent greater inequality. Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are from the Luxembourg Income Study database.

Economic Freedom – Heritage Foundation
The Economic Freedom index uses 10 specific freedoms, some as composites of even further detailed and quantifiable components:
- Business freedom (hf_business)
- Trade freedom (hf_trade)
- Fiscal freedom (hf_fiscal)
- Freedom from government (hf_govt)
- Monetary freedom (hf_monetary)
- Investment freedom (hf_invest)
- Financial freedom (hf_financ)
- Property rights (hf_prights)
- Freedom from corruption (hf_corrupt)
- Labor freedom (hf_labor)

Each of these freedoms is weighted equally and turned into an index ranging from 0 to 100, where 100 represents the maximum economic freedom. Although changes in methodology have been undertaken throughout the measurement period, continuous backtracking has been used to maximize comparability over time.

GDP / Capita growth – World Development Indicators
Annual percentage growth rate of GDP per capita based on constant local currency. Sources: World Bank and OECD.

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[1] Some of the variables have been reversed in the scatterplots in order to make the interpretation more intuitive

Population below $2 a Day (%) – World Development Indicators
Percentage of the population living on less than $2.00 a day at 2005 international prices. Data are based on primary household survey data obtained from government statistical agencies and World Bank country departments. Data for high-income economies are from the Luxembourg Income Study database.

Foreign Credit Rating – Standard & Poor's
Credit ratings are forward-looking opinions about credit risk. Standard & Poor's credit ratings express the agency's opinion about the ability and willingness of an issuer, such as a corporation or state or city government, to meet its financial obligations in full and on time.

Credit ratings can also speak to the credit quality of an individual debt issue, such as a corporate note, a municipal bond or a mortgage-backed security, and the relative likelihood that the issue may default.

Ratings are provided by organizations such as Standard & Poor's, commonly called credit rating agencies, which specialize in evaluating credit risk.

Each agency applies its own methodology in measuring creditworthiness and uses a specific rating scale to publish its ratings opinions. Typically, ratings are expressed as letter grades that range, for example, from 'AAA' to 'D' to communicate the agency's opinion of relative level of credit risk.

Human Development Index – UNDP Human Development Report
The Human Development Index (HDI) is a composite index that measures the average achievements in a country in three basic dimensions of human development: a long and healthy life, as measured by life expectancy at birth; knowledge, as measured by the adult literacy rate and the combined gross enrolment ratio for primary, secondary and tertiary schools; and a decent standard of living, as measured by GDP per capita in purchasing power parity (PPP) US dollars.

Government Revenue (% of GDP) – World Development Indicators
Revenue is cash receipts from taxes, social contributions and other revenues. Grants are excluded here. Measured as a percentage of GDP. Source: International Monetary Fund. (World Bank and OECD for GDP estimates.)

Tax Revenue (% of GDP) – World Development Indicators
Tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Measured as a percentage of GDP. Source: International Monetary Fund. (World Bank and OECD for GDP estimates.)

Social Security Laws – Botero, Djankov, La Porta, López-de-Silanes & Shleifer Regulation of Labor
Measures social security benefits as the average of the three variables:
- Old Age, Disability and Death Benefit Index
- Sickness and Health Benefits Index
- Unemployment Benefits Index

Average Schooling Years – Barro & Lee
Average schooling years in the total population aged 25 and over.

Life Expectancy – World Development Indicators
Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. Sources: United Nations Population Division, national statistical offices, Eurostat, Secretariat of the Pacific Community, and U.S. Census Bureau.

Healthy Life Years – WHO Statistical Information System
Average number of years that a person can expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury.

Infant Mortality Rate – World Development Indicators
Infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year. Source: Inter-agency Group for Child Mortality Estimation (UNICEF, WHO, World Bank, UNPD, universities and research institutions).

Maternal Mortality Rate – Institute for Health Metrics and Evaluation University of Washington
Number of maternal deaths per 100,000 live Births.

Government Expenditure on Health (% of total health) – WHO Statistical Information System
Government expenditure on health care services and goods as a percentage of total expenditure on health. Expenditures on health include final consumption, subsidies to producers, and transfers to households (chiefly reimbursements for medical and pharmaceutical bills). Besides domestic funds it also includes external resources (mainly as grants passing through the government or loans channeled through the national budget).

Private Expenditure on Health (% of total health) – WHO Statistical Information System
Private expenditure on health-care services and goods as a percentage of total expenditure on health.

CO_2 Emissions / Capita – Environmental Performance Index
Emissions of greenhouse gases per capita, measured in tons of carbon dioxide equivalents.

Access to Improved Drinking Water – Environmental Performance Index
The percentage of population with an access to an improved water source. Original source is WHO.

Access to Adequate Sanitation – Environmental Performance Index
The percentage of population with an access to an improved source of sanitation. Original source is WHO.

Gender Equality – World Economic Forum
All scores are reported on a scale of 0 to 1, with 1 representing maximum gender equality. The study measures the extent to which women have achieved full equality with men in five critical areas:
- Economic participation
- Economic opportunity
- Political empowerment
- Educational Attainment
- Health and well-being

Secondary Education Enrollment (female) – UNESCO Institute for Statistics
All values given are gross enrollment rate (GER). GER is defined as the number of pupils enrolled at a given level of education, regardless of age, expressed as a percentage of the population in the theoretical age

group for the same level of education. Gross enrollment rate can be over 100% due to the inclusion of over-aged and under-aged pupils/students because of early or late entrants, and grade repetition. In this case, a rigorous interpretation of GER needs additional information to assess the extent of repetition, late entrants, etc.

Homicide Rate – UNODC
Intentional homicide, rate per 100,000 population. Intentional homicide is defined as unlawful death purposefully inflicted on a person by another person.

Number of Police Officers – UNODC
Police officers per 100,000 population.

Number of Prisoners – UNODC
Sentenced incarcerated persons per 100,000 population

Interpersonal Trust – World Values Survey
"Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?
(1)   Most people can be trusted
(2)   Can't be too careful"

Confidence in Parliament – World Values Survey
"I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?
(1)   A great deal
(2)   Quite a lot
(3)   Not very much
(4)   None at all"

Confidence in Government – World Values Survey
"I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?
(1)   A great deal
(2)   Quite a lot
(3)   Not very much
(4)   None at all"

Feeling of Happiness – World Values Survey
"Taking all things together, how happy would you say you are?
(1)   Very happy
(2)   Quite happy
(3)   Not very happy
(4)   Not at all happy"

Life Satisfaction – World Values Survey
"All things considered, how satisfied are you with your life as a whole these days?
(1)   Dissatisfied
(2)

(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)   Satisfied"

Level of Democracy – Freedom House / Polity
Scale ranges from 0-10 where 0 is least democratic and 10 most democratic. Average of Freedom House (fh_pr and fh_cl) is transformed to a scale 0-10 and Polity (p_polity2) is transformed to a scale 0-10. These variables are averaged into fh_polity2. The imputed version has imputed values for countries where data on Polity is missing by regressing Polity on the average Freedom House measure. Hadenius & Teorell (2005) show that this average index performs better both in terms of validity and reliability than its constituent parts.

Government Effectiveness – World Bank Governance Indicators
"Government Effectiveness" combines into a single grouping responses on the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies. The main focus of this index is on "inputs" required for the government to be able to produce and implement good policies and deliver public goods.