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*JOB SATISFACTION:
THE EFFECT OF CAPITALIST AND CORPORATIST
INSTITUTIONS*

Gylfi Zoega and Edmund S. Phelps

Job Satisfaction: The Effect of Capitalist and Corporatist Institutions

Edmund Phelps and Gylfi Zoega¹

Economic activity yields benefits in the form of output and consumption. In addition, there is a non-material dimension to participating in an innovative economy since much of what is most valued about participating in such an economy is the challenge and experience it offers rather than just the material goods and services produced. The question addressed in this paper is whether capitalist economies are *more* rewarding in non-material terms than corporatist economies since the latter may be less innovative due to the corporatist state's intervention in the allocation of the factors of production and the distribution of income. In particular, we explore whether reported job satisfaction tends to be higher in the capitalist economies and lower in the corporatist economies.²

We will first discuss corporatism as an economic system, then review the literature on job satisfaction and take a preliminary look at the statistical relationship between job satisfaction and the conventional measures of economic performance; output per capita, labor force participation and unemployment, in a sample of 27 countries. We then introduce and discuss different types of corporatist institutions. The data analysis starts with a series of scatter plots and tables that report statistical relationships between job satisfaction and various institutional variables. We also estimate principal components in order to explore the relationship between job satisfaction and institutions further. Finally we test for robustness by using data on 47 thousand individuals where we can control for individual attributes that may affect job satisfaction in addition to our institutional variables.

¹ We thank Arnaldur S. Kristjansson for research assistance.

² Phelps (2012) explores the relationship between corporatism and economic performance, including job satisfaction.

1. Literature

There is a large literature on the determinants of job satisfaction in the industrial organization and psychology literature.³ This literature relates job satisfaction to mental health, absences from work and physical ailments (see Locke, 1976) and attributes levels of job satisfaction to aspects of the workplace such as physical work conditions and levels and types of supervision. There is also a literature, although much smaller, in labor economics made available by large microeconomic data sets.⁴

Early contributors to the economics literature on job satisfaction were Phelps (1968), Freeman (1978) and Borjas (1979). Phelps (1968) describes the relationship between job satisfaction and quit behavior. Freeman shows satisfaction to be a major determinant of labor market mobility, in part it is argued because it reflects aspects of the work place not captured by standard objective variables. Satisfaction is found to be lower among union members, a result confirmed by Borjas who finds that the effect of union membership is stronger at higher tenure levels. More recently, Andrew Clark has studied job satisfaction in Britain, the characteristics of jobs most likely to make workers satisfied and the relationship between age and job satisfaction.⁵ Using British data, he finds that males, workers in their thirties, the well-educated, those working longer hours and workers in larger establishments have lower levels of job satisfaction. Sousa-Poza (2000) analyzes the levels and determinants of job satisfaction in a cross-national setting for a group of 21 countries. He finds that job satisfaction is quite high in all countries; highest in Denmark and very low in Japan and Russia; job satisfaction has fallen in Germany and the United States in the 1990s; and job satisfaction tends to be positively correlated with having an interesting job, having good relations with management and negatively correlated with having an exhausting job. Hamermesh (2001) finds increased dispersion of job

³ See, amongst others, Sui and Cooper (1998).

⁴ Such as the *International Social Survey Program*, the *Eurobarometer Surveys* and the *U.S. General Social Surveys*.

⁵ See Clark (1996, 1998) and Clark, Oswald and Ward (1995).

satisfaction in the U.S. between higher and lower income groups of young workers and also that job satisfaction is especially responsive to surprises in the returns to observable skills. Blanchflower and Oswald (2004) find that job satisfaction is greater in workplaces where there are no painful or tiring positions, where employees control their equipment and their work pace, where they do not have to carry heavy loads or work at high speed. Huppert and So (2009) use the European Social survey to capture the determinants of flourishing, by which they mean having positive emotions; engagement and interest, meaning and purpose, in addition to having self-esteem, optimism, resilience, vitality, self-determination and positive relationships. These authors find that higher flourishing is associated with higher education and income and that married people are more likely to flourish than those no longer married.

Several stylized facts have been established by this literature using microeconomic data. First, the majority of workers in developed countries appear to be satisfied with their jobs. Second, there is some indication that job satisfaction has been falling over time in some countries, most notably in the United States. Third, job satisfaction is higher among women, the self-employed, the young and the old, supervisors and those with secure jobs. It is lower for union members and greater for well paid workers. The pattern may be partly explained by the desirability of job security; clearly older workers tend to have more job security than the younger ones and supervisors have more job security than their underlings.

2. Job satisfaction and economic performance

We start by showing the values for mean job satisfaction – taken from Ingelhart (2000) – in a sample of 27 countries.⁶ Figure 1 has the job satisfaction numbers for the 1990 wave of the World Values Survey while Figure 2 has both the values from the 1990-1991 and the 1999-2000 waves. The

⁶ Countries included were: Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxemburg, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, the U.K. and the U.S.

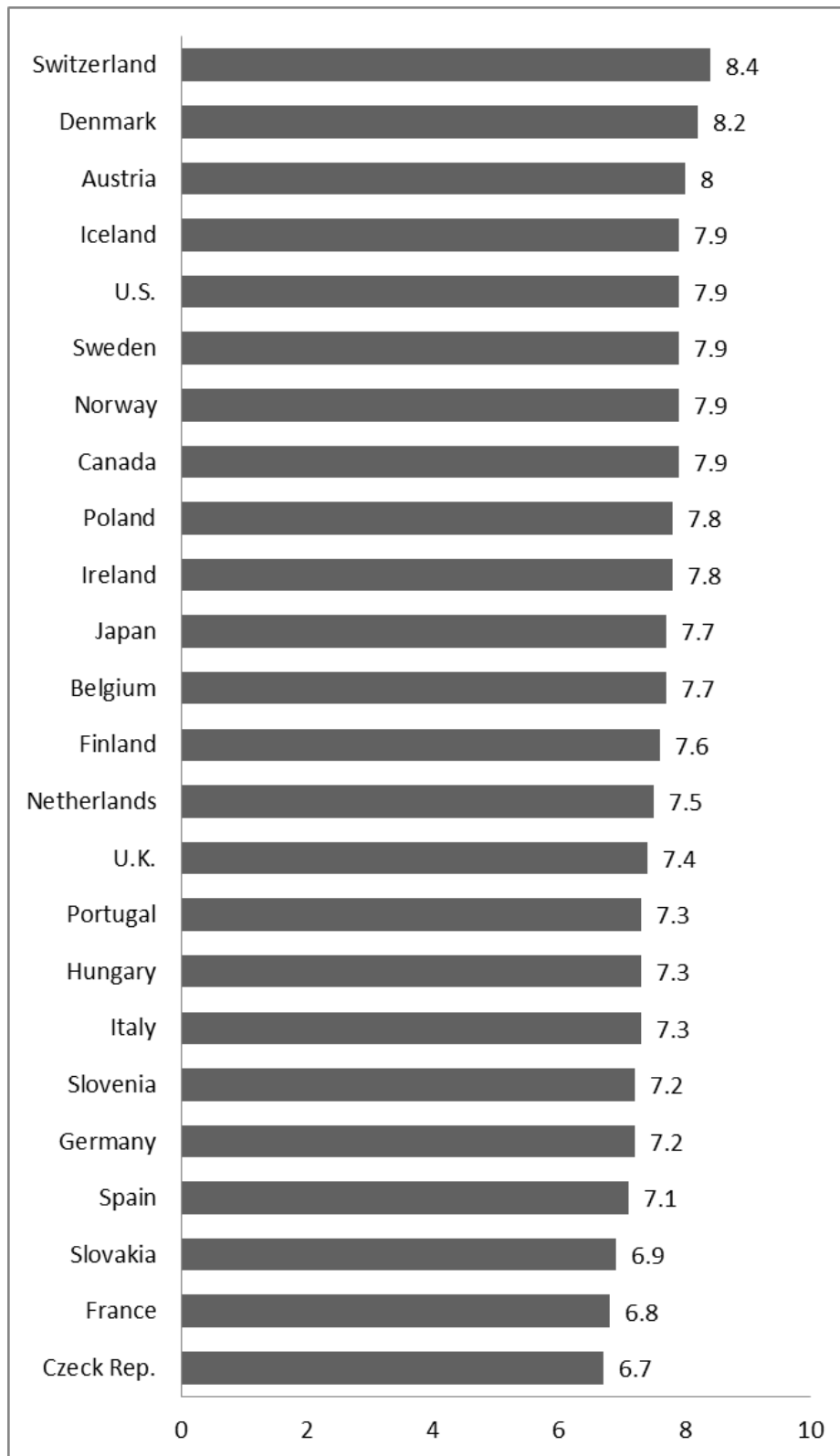
countries that rank highest in the 1990 survey are Switzerland, Denmark, Austria, Iceland, the U.S., Sweden, Norway and Canada. The lowest ranking countries are Slovakia, France and the Czech Republic. We note from Figure 2 that job satisfaction does not change much between the 1990-91 wave and 1999-00 wave. However, some changes are noticeable. The numbers rise in Germany, France, the Czech Republic and Portugal and fall in Austria, Sweden, Poland and Hungary.

Figure 3 shows the statistical relationships between job satisfaction, labor market participation, unemployment rates and the level of productivity relative to the U.S. level. As expected, there is a significant relationship between productivity and job satisfaction (mean of 1990-91 and 1999-00 surveys), the participation rate and job satisfaction and a negative relationship between the unemployment rate and job satisfaction. Thus countries that enjoy high productivity, low unemployment and high labor market participation also enjoy higher mean levels of reported job satisfaction.

The relationships between measured productivity, job satisfaction, unemployment and labor market participation demonstrate that job satisfaction may be important for objectively measured economic performance. Judge and Watanabe (1993) study the relationship between job satisfaction and life satisfaction.⁷ They find this relationship to be positive and significant and the two appear to mutually influence one another. The cross-sectional results suggest a strong bidirectional relationship that is equivalent in magnitude. The longitudinal results, which may be more valid, suggest a significant and moderate effect of life satisfaction on job satisfaction over a 5-year period and a significant, but relatively weak, effect of job satisfaction on life satisfaction over the same time interval.

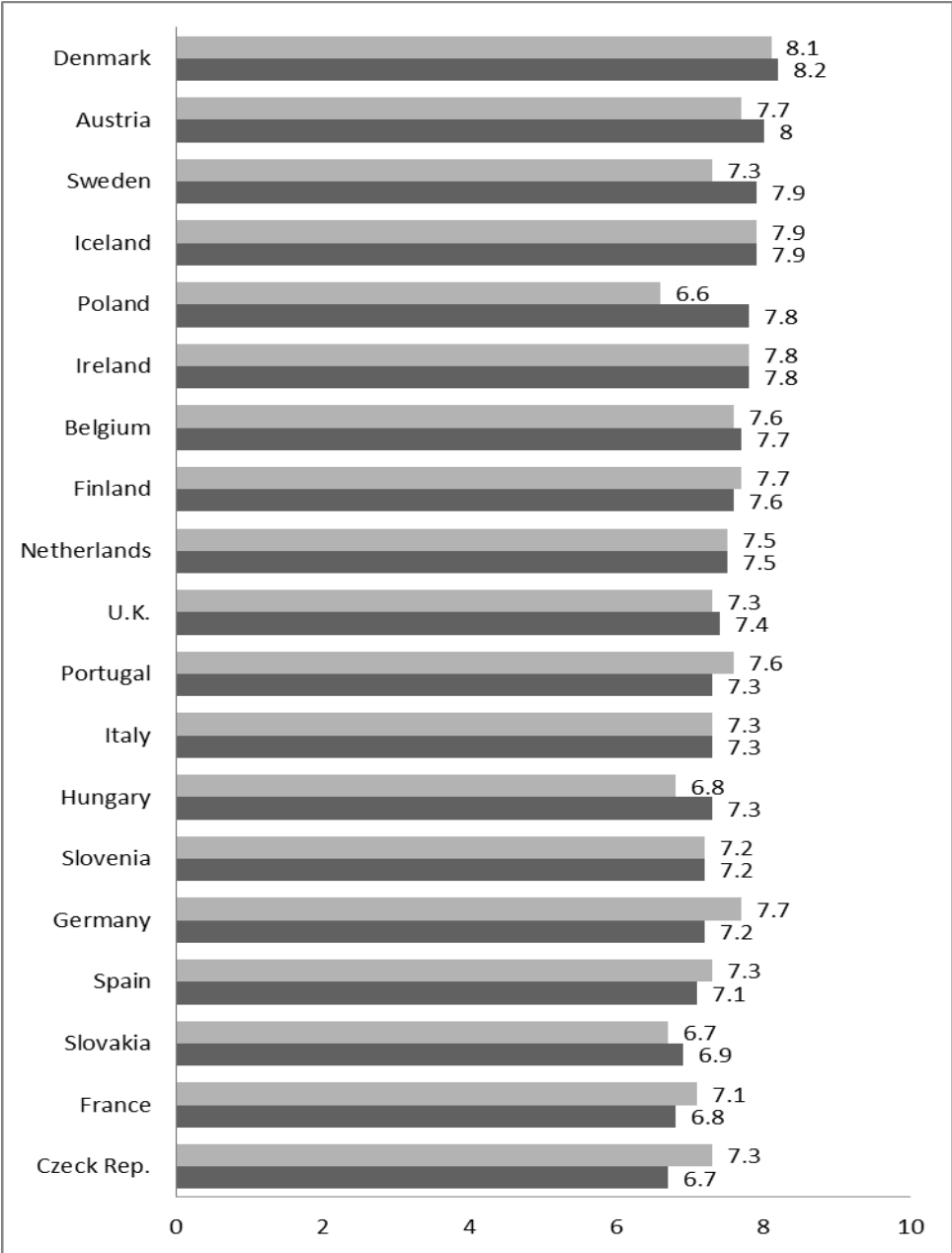
⁷ Earlier studies found a statistical relationship between life satisfaction and job satisfaction but were inconclusive when it came to finding the direction of causation. Thus Tail, Padgett, and Baldwin (1989) and Rain, Lane, and Steiner (1991) provided estimates of the relationship between job satisfaction and life satisfaction.

Figure 1. Job satisfaction in 1990-91



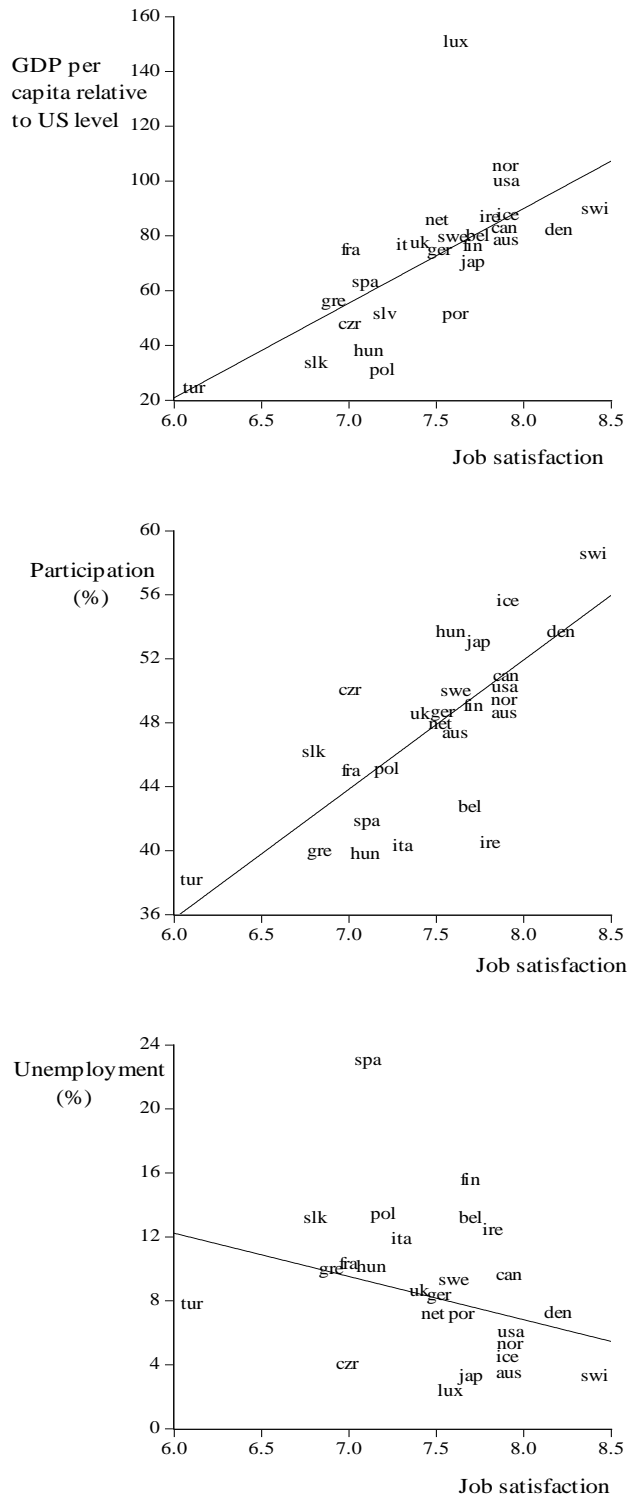
Source: Ingelhart (2000).

Figure 2. Job satisfaction, 1990-1991 (black) and 1999-2000 (grey)



Source: Ingelhart (2000).

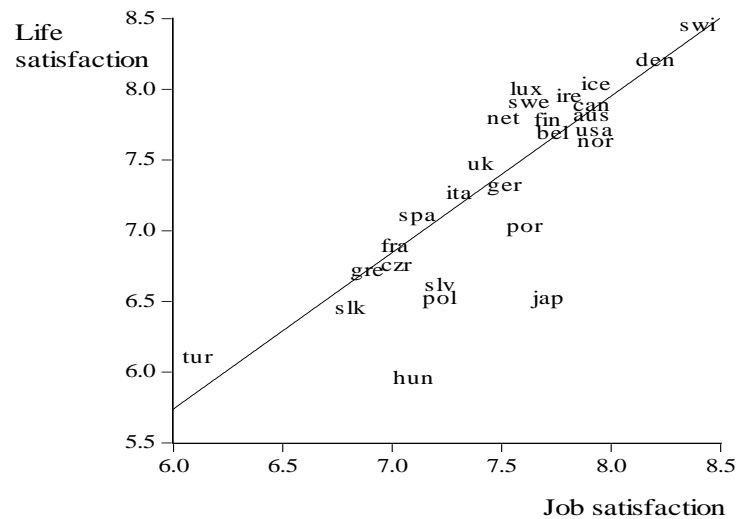
Figure 3. Job satisfaction and economic performance



Source: Ingelhart (2000) and OECD.

Figure 4 shows the relationship between life satisfaction (WWS) and the job satisfaction variable used in this paper (correlation = 0.83).

Figure 4. Job satisfaction and life satisfaction



We will now turn to explaining the differences that exist between countries in terms of reported job satisfaction with various institutional variables, intended to capture the institutions of corporatism and capitalism.

3. Corporatism

We will classify corporatist institutions into three groups. These may influence the economic culture or, alternatively, work through institutions, such as expenditures and subsidies, entitlements and regulation. First, we have institutions that intervene in *resource allocation*. Second, there are institutions that intervene in the *distribution of income*. Third, there are the institutions of *neo-corporatism* which are driven not by the state but by the attempts of the social partners – unions and employers’

associations – and other powerful interest group to harness the state’s power to further their interests.⁸

3.1 Institutions affecting resource allocation

At the heart of corporatism is an intervention in what the economy produces. This may come about through the level and system of taxation, an extensive body of regulation of businesses, barriers to entry into selected industries and industrial policy.

One measure of the effect of government on the allocation of resources is the size of tax revenues. Since corporatists care about what is produced they may use the tax system to affect the direction of the private sector. Consumption not deemed desirable by the state is heavily taxed as well as most income in order to finance subsidies of employment in the private sector, transfers or public employment. Examples include regional subsidies and subsidies to selected industries such as high-technology industries.

Another measure is the volume of recorded regulations since corporatists may also intervene by regulating private industry. Corporatist economies go beyond the body of good regulation to a large body of bad regulation, beyond what is needed to grease the wheels of commerce and innovation by providing protection against fraud to investors, workers and savers from unscrupulous companies, employers and banks. Corporatist economies use barriers to entry to protect important industries, professions and communities in various ways. New industries may be prevented from growing in order to protect existing ones. Extensive red tape is a manifestation of attempts to establish controls over the formation and operation of businesses in general. There may be permits for the entry and operation of businesses, permits for different transactions and licenses for the entry of people into different professions. Informal regulation may take the form of the length of time it takes to enforce

⁸ In labor economics corporatism is used in a narrower sense and interchangeably with the centralization of wage bargaining. Many authors – such as Crouch (1985), Bruno and Sachs (1985), Newell and Symons (1987), and Layard et al. (2005) – have found centralized labor unions to be conducive to low unemployment. Calmfors and Driffill (1988) detect a hump-shaped relationship between unemployment and centralization so that both countries with centralized wage bargaining and those with the most decentralized labor markets perform better than those in the middle.

contracts and tolerance of judicial delays. An aim of red tape may be to prevent one interest group from harming another but the net effect may be to stifle efficiency and innovation.

3.2 Institutions affecting income distribution

Corporatist doctrine also puts an emphasis on who should benefit in society rather than just what should be produced. Retirement pensions, unemployment benefits and subsidized health care are just a few examples of the state using its powers to redistribute income.

The size of labor unions and their centralization matters for income distribution. The labor market pits large aggregations of workers represented by unions against large aggregations of companies, represented by an employer association. What results is what economists tend to call the battle of the markups: unions want to raise money wages for a given level of prices and employers want to raise prices for a given level of money wages. In equilibrium, unemployment has to be sufficiently high to bring union demands in terms of real wages down to what employers are willing to offer. Governments frequently intervene in this process through income policies and tri-partite agreements.

The valuation of businesses in stock markets is depressed by the corporatist state. The state impinges on property rights by taxing businesses and by empowering workers to acquire a larger share of company profits. Labor unions threatening strikes are one clear example of this. Moreover, attempts to redistribute output between industries through regulations and red tape that is intended to protect one group from another will lower the valuation of businesses.

3.3 Neo-corporatist institutions

Neo-corporatism distinguishes itself from classic corporatism in not having the state take the initiative in setting the direction of the economy but instead in having the initiative taken by powerful business interests. This type of corporatism has several features.

A weak corporatist state has needs of powerful friends or cronies. The state may therefore protect particular industries and businesses, which may smell of cronyism. Industrial policy is aimed at the favored industries, not the ones that may turn out to be most profitable or important for the national economy. Government contracts may for the same reason be given to friendly companies to buy their support for the government in power. In some countries the cronies are primarily relatives or long-time friends of the rulers.

Backdoor deals between politicians and their trusted cronies take the form of businesses' lobbying of legislators, regulators and agencies for legislation or rule-setting. This may over time generate volumes of laws, regulations and interpretative rulings aimed at giving various preferences to all or most groups and individuals. Businesses may also resort to political contributions or even, in the extreme, bribes and other measures intended to reduce the burden brought about by taxation and regulation dictated by government officials and excessive wage demands by labor unions. Paying politicians and political parties for favors is another symptom of the same phenomenon.

The proportion of the labor force engaged in the practice of the law may be a good proxy for the proportion of income diversion from those who earned it to those receiving various sorts of compensation.

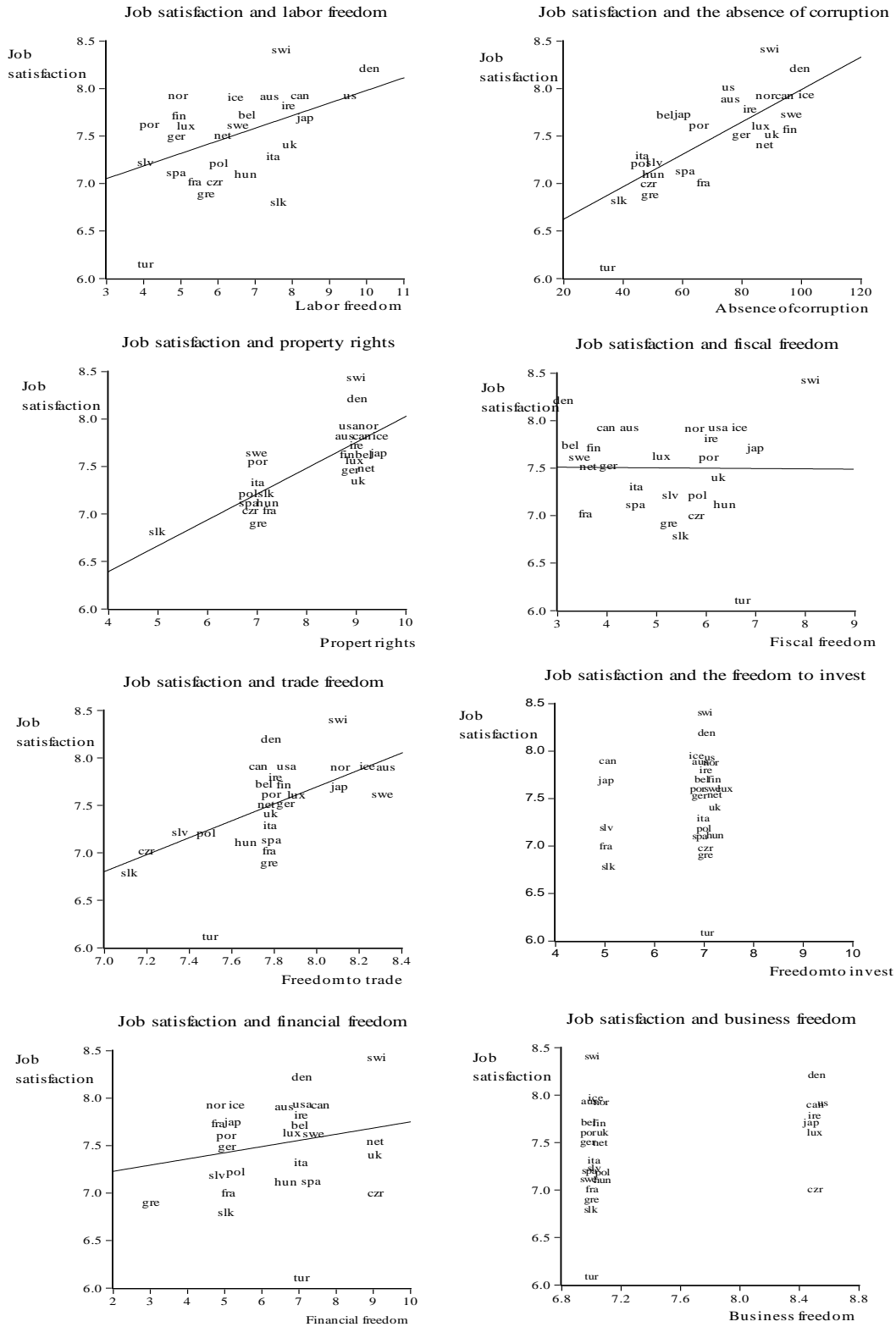
4. Capitalism and job satisfaction

In order to provide a glance at the relationship between corporatist economic systems and job satisfaction we start by using data on job satisfaction taken from the *World Values Survey* and measures of institutions taken from the *Heritage Foundation*.⁹ The Heritage freedom variables we take to measure the extent of capitalist institutions.¹⁰ In Figure 5 we plot the mean job satisfaction score for 25 countries against the aggregate measures of economic freedoms.

⁹ See <http://www.heritage.org/>.

¹⁰ The definition of the variables is found in an appendix.

Figure 5. Job satisfaction and economic freedom



We note a strong relationship between job satisfaction and labor freedom; job satisfaction and the freedom from corruption,¹¹ job satisfaction and property rights and job satisfaction and the freedom to trade. There is no apparent relationship between job satisfaction and fiscal freedom or between job satisfaction and the freedom to invest; it is also difficult to decipher a relationship between job satisfaction and business freedom due to data clustering.

In Table 1 we estimate each of the eight relationships. Not surprisingly, we find positive and significant relationships for job satisfaction and labor freedom; job satisfaction and the freedom from corruption, job satisfaction and property rights; and job satisfaction and the freedom to trade.

Table 1. Job satisfaction and economic freedom

| Independent variable | Constant term | | Coefficient of Independent variable | | R-square | Obs. |
|-------------------------|---------------|---------|-------------------------------------|---------|----------|------|
| | Estimate | t-ratio | Estimate | t-ratio | | |
| Labor freedom | 6.49 | 17.17 | 0.15 | 2.90 | 0.26 | 27 |
| Freedom from corruption | 6.18 | 24.26 | 0.18 | 5.51 | 0.60 | 27 |
| Property rights | 5.25 | 16.87 | 0.28 | 7.18 | 0.64 | 27 |
| Fiscal freedom | 7.58 | 16.71 | -0.02 | 0.21 | 0.00 | 27 |
| Trade freedom | -0.88 | 0.53 | 1.07 | 5.09 | 0.41 | 27 |
| Investment freedom | 6.84 | 9.38 | 0.10 | 0.87 | 0.02 | 27 |
| Financial freedom | 7.10 | 19.63 | 0.06 | 0.99 | 0.03 | 27 |
| Business freedom | 6.00 | 6.71 | 0.20 | 1.72 | 0.08 | 27 |

Least squares with heteroskedasticity consistent coefficient covariance.

In Table 2 we then move on to estimate multivariable regressions while acknowledging the limitations of having only twenty seven observations. The coefficient of labor freedom remains positive and statistically significant throughout. The same can be said about freedom from corruption and property rights. The indices for fiscal freedom and trade freedom have positive coefficients but they are less significant than those of the earlier variables. The indices for investment freedom, financial freedom and business freedom are insignificant throughout.

¹¹ This variable is derived primarily from *Transparency International's Corruption Perceptions Index* (CPI).

Table 2. Multivariate regressions (* significant at 5% confidence level)

| Dependent variable: Job satisfaction, mean of 1990-1991 and 1999-2000 survey responses. | | | | | | | | |
|---|-----------------|-----------------|-----------------|-----------------|----------------|----------------|-----------------|-----------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Constant | 6.49 (17.17) | 5.70 (17.90) | 5.26 (16.71) | 5.06 (13.82) | 3.27 (3.44) | 3.26 (3.33) | 3.36 (3.24) | 4.92 (4.30) |
| Labor freedom* | 0.15 (2.90) | 0.10 (2.98) | 0.06 (2.28) | 0.05 (2.07) | 0.06 (1.98) | 0.06 (1.86) | 0.06 (1.84) | 0.08 (2.34) |
| Freedom from corruption* | | 0.16 (5.94) | 0.08 (3.69) | 0.09 (2.56) | 0.07 (1.91) | 0.07 (1.87) | 0.07 (1.97) | 0.08 (2.53) |
| Property rights* | | | 0.17 (5.19) | 0.15 (3.25) | 0.14 (3.09) | 0.13 (3.00) | 0.14 (2.96) | 0.17 (3.14) |
| Fiscal freedom * | | | | 0.05 (1.03) | 0.04 (0.91) | 0.04 (0.89) | 0.04 (0.89) | 0.05 (1.26) |
| Trade freedom* | | | | | 0.27 (1.80) | 0.27 (1.71) | 0.25 (1.69) | 0.11 (0.76) |
| Investment freedom* | | | | | | 0.00 (0.04) | 0.01 (0.13) | -0.01 (0.11) |
| Financial freedom* | | | | | | | -0.01 (0.21) | 0.00 (0.09) |
| Business freedom* | | | | | | | | -0.12 (1.41) |
| Obs. | 27 | 27 | 26 | 26 | 26 | 26 | 26 | 26 |
| R-square | 0.26 | 0.69 | 0.74 | 0.76 | 0.78 | 0.78 | 0.78 | 0.86 |

Least squares with heteroskedasticity consistent coefficient covariance. * A higher number denotes more economic freedom. Bold letters indicate significance at 5% confidence level.

5. Corporatism and job satisfaction

In order to provide a glance at the relationship between corporatist economic systems and job satisfaction we use data on job satisfaction taken from the *World Values Survey* for the 27 countries listed above and the measures of institutions taken from the *Fraser Institute*¹² and other sources.

We are interested in four aggregate measures of the institutional setup; *the size of government*, a measure of *the quality of the legal framework* (measuring the protection of property rights and the enforcement of contracts), the *freedom to trade internationally* and the *volume of regulations*. We relate these measures to reported job satisfaction in Figure 2 below. Each of the four aggregate measures is numbered from zero to ten where ten denotes maximum freedom. Thus the higher the measure the smaller the size of the government, the better the protection of property rights, the better the quality of the judicial system, the greater the freedom to trade internationally and the less restrictive the regulatory framework.

All four measures affect both resource allocation and the distribution of income to a varying extent. Of the four, the size of government may be an indication of resource allocation in the corporatist fashion, as is market regulation. The measure of the quality of the legal framework can clearly be taken to capture institutions that have to do with income diversion while impediments to free trade affect both resource allocation and the distribution of income.

A clear positive relationship appears between the quality of the legal framework and job satisfaction, the paucity of regulation and job satisfaction, as well to a lesser extent between the size (that is smallness) of government and job satisfaction. In contrast, job satisfaction exhibits no clear relationship with the freedom to trade. The relationships between the variables are documented in Table 3 (as measured by estimated coefficients and the R-squared). Note that differences in the size of government explain 44% of the cross-country variation in the mean level of job satisfaction; differences in legal structure (i.e. protection of property rights) can

¹² See <http://www.fraserinstitute.org/>.

explain even more or 68% of the variation; and differences in the volume of regulation of business explain 35% of the variation. In all three cases we have a positive relationship such that a smaller government, better legal structure and less restrictive business regulation may contribute to greater job satisfaction.

Of the four measures, the regulation of business is the clearest measure of corporatist influences. The quality of the legal structure also has the flavor of measuring corporatism. Taken together, a small government, efficient legal structure and low levels of regulation are characteristic of capitalist economies, which according to Table 2 and Figure 2 are likely to promote job satisfaction. In an appendix we show the subcomponents of the four measures: the size of government, the legal structure, impediments to trade and the volume of regulation. Figure A1 shows the four subcomponents of the *size of government*: government consumption, government investment, the top marginal income tax rate and transfers and subsidies. We note a rather weak relationship in the case of the subcomponents of the size of government variable. Turning to the *legal structure* in Figure A2 in an appendix we find much stronger relationships. There is a clear upward sloping relationship between job satisfaction and a measure of the impartiality of courts; judiciary independence; a measure of the involvement of the military in politics and a measure of the protection of intellectual property rights.¹³

Turning to *impediments to international trade* in Figure A3 we find a positive relationship between job satisfaction and a measure of capital controls (absence of) and also, although much weaker, between job satisfaction and the paucity of regulatory trade barriers. Finally, Figure A4 shows the relationship between job satisfaction and the subcomponents of the aggregate measure of *regulation of business*. A positive relationship is visible for all three subcomponents; the paucity of regulation of credit market, regulation of labor markets and regulation of businesses.

¹³ The correlation between job satisfaction and the involvement of the military in politics is mainly due to the inclusion of Turkey which has both low job satisfaction and a high degree of involvement of the military in politics.

We have also considered six additional variables that measure interference in resource allocation. The first three measure access to capital: market capitalization, the number of listed companies and the Milken Institute Capital Access Index.¹⁴ The fourth measures barriers to entrepreneurship. In addition, we use measures of corruption from the Fraser Institute¹⁵ and the number of lawyers per capita to measure neo-corporatist institutions. The scatter plots between each of these six variables and job satisfaction are shown in Figure 3. There is a clear positive relationship between job satisfaction, on the one hand, and the number of listed companies, market capitalization, access to capital (a higher rank implies less access explaining the negative slope of the relationship in the figure) and the Fraser Institute index of corruption (implying that job satisfaction goes together with less corruption) and a negative relationship between job satisfaction and barriers to entrepreneurship.

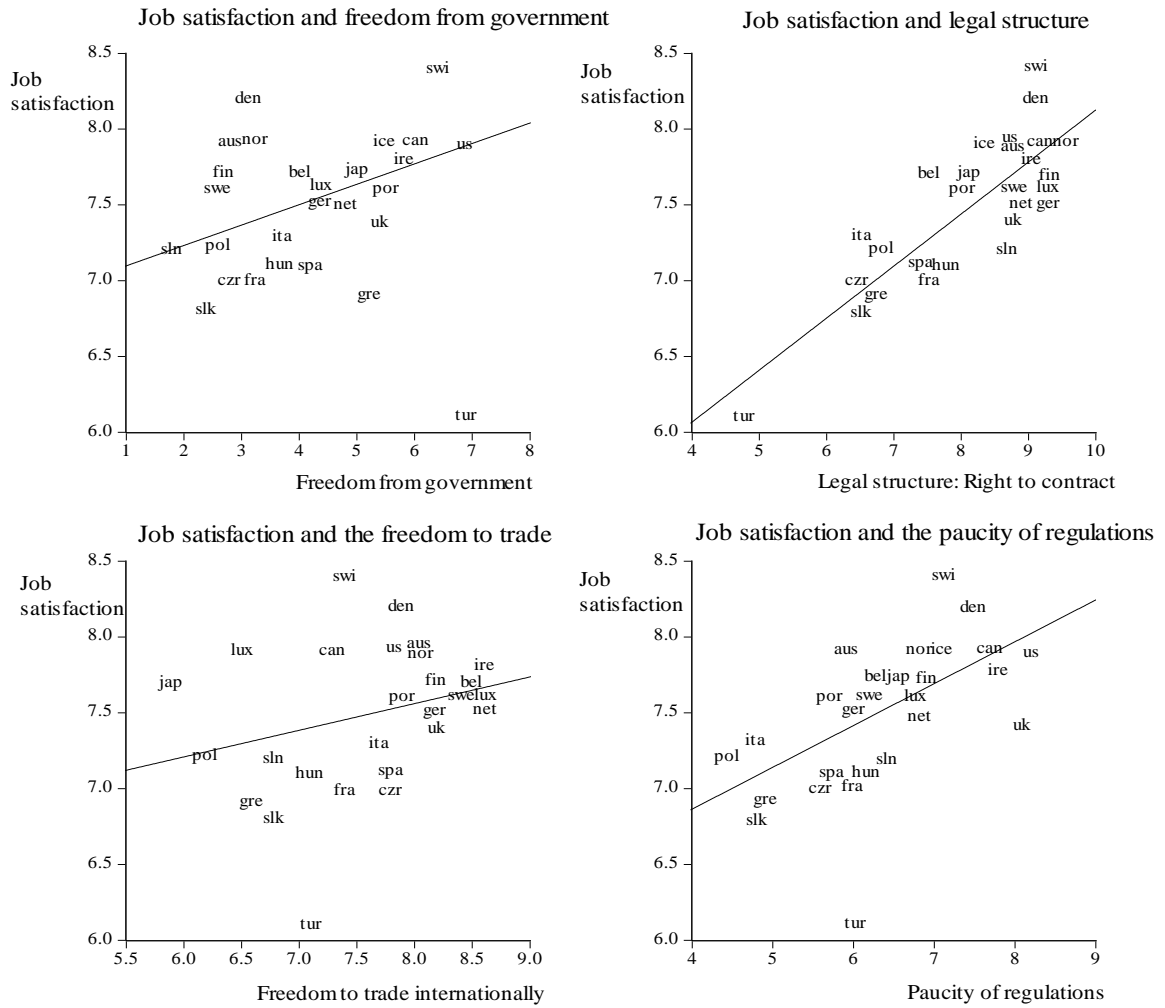
In Table 3, which shows the statistical correlations, there appears to be a surprisingly large number of significant correlations between job satisfaction and various institutional measures. Job satisfaction is negatively related to various measures of business regulation (a positive coefficient implies that less regulation and greater job satisfaction go together) – time with bureaucracy, starting a new business, irregular payments (corruption) – as well as with some credit market regulations – regulation on credit extension and interest rate controls. Regulations on hiring and firing labor are negatively related to job satisfaction (a positive coefficient), as are barriers to entrepreneurship. The legal structure is very significant; job satisfaction is positively correlated with the impartiality of courts, judiciary independence and the (absence of) involvement of the military in politics and the protection of property rights, all with the expected sign.

However, we did not find any relationship between job satisfaction and measures of self employment, social expenditures or tax revenues as a share of GDP. We omit these variables from Table 3.

¹⁴ <http://www.milkeninstitute.org/>. The CAI measures the breadth, depth and vitality of capital markets.

¹⁵ This variable is derived primarily from the *Transparency International's Corruption Perceptions Index* (CPI).

Figure 6. Job satisfaction and aggregate measures of institutions



The institutions are measured on a scale from zero to ten where the number 10 denotes maximum freedom. Source: Fraser Institute (<http://www.fraserinstitute.org/>).

Figure 7. Job satisfaction and institutions continued

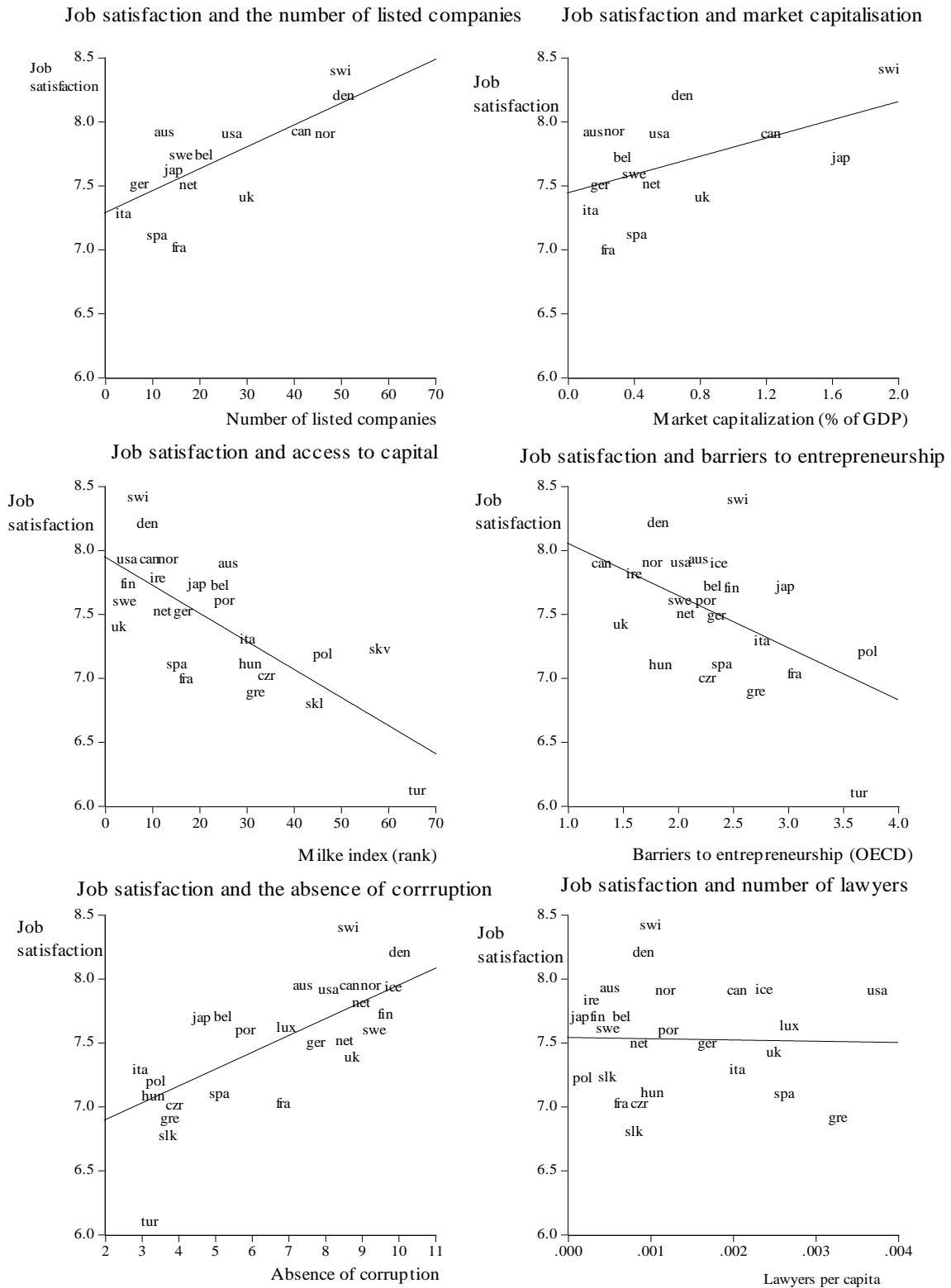


Table 3. Institutions and job satisfaction

| Dependent variable: job satisfaction | Constant term | | Independent variable | | R ² | Obs. |
|--------------------------------------|---------------|-------------|----------------------|-------------|----------------|------|
| | Estimate | t-ratio | Estimate | t-ratio | | |
| Resource allocation | | | | | | |
| <i>Size of government</i> *# | 7.0 | 28.5 | 0.13 | 2.4 | 0.44 | 27 |
| Government consumption * | 7.9 | 23.5 | -0.09 | 1.2 | 0.09 | 27 |
| Government investment * | 7.3 | 53.2 | 0.04 | 1.6 | 0.08 | 25 |
| Top marginal tax * | 7.5 | 56.6 | -0.01 | 0.1 | 0.00 | 25 |
| Transfers and subsidies * | 7.5 | 30.9 | 0.00 | 0.0 | 0.00 | 26 |
| <i>Regulation of business</i> *# | | | | | | |
| Time with bureaucracy * | 6.0 | 17.2 | 0.21 | 4.4 | 0.38 | 26 |
| Starting a new business*# | 5.7 | 16.3 | 0.26 | 5.5 | 0.43 | 26 |
| Irregular payments * | 6.9 | 25.4 | 0.12 | 2.9 | 0.47 | 26 |
| | 6.5 | 28.2 | 0.15 | 5.0 | 0.54 | 26 |
| <i>Credit market regulations</i> *# | | | | | | |
| Bank ownership*# | 6.1 | 13.5 | 0.19 | 3.2 | 0.21 | 27 |
| Bank competition*# | 7.4 | 32.5 | 0.02 | 0.8 | 0.34 | 27 |
| Credit extension*# | 6.9 | 19.0 | 0.10 | 2.1 | 0.41 | 26 |
| Int. rate controls*# | 6.7 | 20.4 | 0.11 | 2.2 | 0.46 | 27 |
| 6.0 | 13.1 | 0.22 | 3.6 | 0.61 | 26 | |
| <i>Others</i> | | | | | | |
| Barriers to entrep.ship | 8.6 | 22.3 | -0.45 | 2.6 | 0.30 | 24 |
| Income diversion | | | | | | |
| <i>Legal structure</i> * | | | | | | |
| Impartiality of courts* | 4.7 | 13.4 | 0.34 | 7.8 | 0.68 | 27 |
| Judiciary independence* | 6.0 | 20.2 | 0.20 | 5.5 | 0.40 | 27 |
| Military in politics* | 5.8 | 13.8 | 0.22 | 4.4 | 0.26 | 26 |
| Protection of property rights*# | 4.9 | 19.9 | 0.29 | 10.2 | 0.63 | 27 |
| | 6.1 | 21.0 | 0.22 | 4.8 | 0.48 | 25 |
| <i>Impediments to trade</i> * | | | | | | |
| Tariffs* | 6.0 | 7.0 | 0.19 | 1.8 | 0.09 | 27 |
| Hidden import barrier* | 7.7 | 9.0 | -0.02 | -0.2 | 0.00 | 27 |
| Regulatory trade restrictions* | 6.8 | 12.3 | 0.09 | 1.4 | 0.07 | 26 |
| Actual versus expected size trade* | 6.8 | 12.3 | 0.09 | 1.4 | 0.07 | 26 |
| Capital controls * | 7.7 | 31.0 | -0.05 | -1.0 | 0.03 | 27 |
| | 6.0 | 16.1 | 0.19 | 4.3 | 0.44 | 27 |
| <i>Regulations</i> * | | | | | | |
| | 5.6 | 13.7 | 0.29 | 4.6 | 0.35 | 26 |
| <i>Labor market regulations</i> *# | | | | | | |
| Minimum wage*# | 7.0 | 29.5 | 0.12 | 2.7 | 0.43 | 26 |
| Hiring and firing restrictions*# | 7.5 | 28.8 | 0.01 | 0.2 | 0.32 | 26 |
| Collective bargaining*# | 7.0 | 30.0 | 0.10 | 2.1 | 0.43 | 26 |
| Unemployment insurance* | 6.8 | 21.8 | 0.13 | 2.5 | 0.40 | 26 |
| | 7.4 | 35.7 | 0.03 | 0.6 | 0.33 | 26 |
| <i>Milken index (rank)</i> | 7.9 | 62.7 | -0.02 | 4.5 | 0.54 | 25 |
| <i>Number of listed companies</i> | 7.2 | 57.4 | 0.02 | 5.0 | 0.56 | 15 |
| <i>Market capitalization</i> | 7.4 | 54.8 | 0.36 | 2.4 | 0.27 | 15 |
| Neo-corporatist institutions | | | | | | |
| Number of lawyers | 7.6 | 56.8 | -12.75 | 0.2 | 0.00 | 26 |
| Corruption (Heritage Foundation)* | 6.5 | 22.6 | 0.01 | 2.1 | 0.39 | 17 |

Least squares with heteroskedasticity consistent coefficient covariance.* A higher number denotes more economic freedom. t-statistics written in bold letters indicate significance at the 5% level. # Dummy variable for Turkey included. Turkey has a very low level of job satisfaction, as shown in Table 1, which makes it a strong outlier in many of the regressions.

The various impediments to trade – tariffs, hidden import barriers, regulatory trade restrictions and actual versus expected size of trade – do not appear to be much related to job satisfaction. However, capital controls are inversely related to job satisfaction. The extent of collective bargaining in the labor market – the narrow type of corporatism emphasized by labor economists – affects job satisfaction adversely, as do restrictions on hiring and firing. However, the level of the minimum wage, as well as the level of unemployment benefits, is not correlated with job satisfaction. The various measures of access to capital and the development of the capital market are highly significant: the greater the number of listed companies, the higher the market capitalization and the greater the access to capital, the higher reported job satisfaction is. Finally, corruption – both as measured by the Fraser Institute as “irregular payments” and by the Heritage Foundation as “freedom from corruption” – is negatively related to job satisfaction while the number of lawyers, when entered alone, is not significantly related to job satisfaction.

We also need to explore whether our institutional variables may only be capturing the relationship between job satisfaction and income per capita since jobs may be more interesting in more advanced societies as the number of people with bad jobs decreases. For this reason, the effect of institutions in Table 3 may conceivably be exaggerated. However, we should note that in our thesis the institutions affect economic performance in a broad sense; output per capita, unemployment, labor force participation and job satisfaction. Thus finding that job satisfaction is only statistically related to income per capita and not at all to institutions would go against our thesis while a finding that job satisfaction is correlated with both income per capita and institutions would provide further support for the thesis. In order to control for this possibility we took data on GDP per capita¹⁶ for 1995 from the Penn-World table and re-estimated the coefficients in Table 2 by always including GDP per capita alongside each of the institutional variables. The inclusion of output per capita did not affect the sign or statistical significance of the large majority of institutional variables in the table, which tells us that the correlations

¹⁶ PPP converted GDP per capita, 2005 international dollars per person.

between job satisfaction and the institutional variables are not caused by institutions being correlated with output per capita and higher output being correlated with greater job satisfaction.¹⁷ Interestingly, when the number of lawyers per capita is included alongside real GDP per capita the coefficient of lawyers becomes negative and statistically significant from zero, implying that more lawyers and less job satisfaction go together.

6. The data summarized

The small sample size and the large number of potential explanatory variables for job satisfaction make multiple regressions difficult to implement. For this reason we calculate in this section principal components in order to summarize of the 27 (country) by 39 (variables) and relate them to our measure of job satisfaction. In Table 4 we first show the eigenvalues for a matrix that also includes our measures of economic performance: job satisfaction, productivity, and unemployment and labor force participation in addition to the 39 institutional variables. We then show the corresponding eigenvalues when we omit the four measures of economic performance and only include the institutional variables shown in Table 3 above in order to generate a set of principal components that capture the institutional setup. Finally, we omit the capital market measures – the Milken index, the number of listed companies and market capitalization – so as not to lose observations (countries). In each case the first two principal components explain around 1/3 of the variance in the matrices and the third one 8-15% of the variation. The corresponding eigenvectors are shown in an appendix.

The first principal component for institution and performance combined corresponds to the first column in Table A1. The values of the eigenvector are positive for job satisfaction, productivity and participation and negative for unemployment. The positive value for job

¹⁷ The following institutional variables retained their sign and statistical significance: regulation of businesses, time with bureaucracy, starting a new business, irregular payments, credit extension, interest rate controls, legal structure, impartiality of courts, judiciary independence, military in politics, protection of property rights, tariffs, capital controls, regulations, labor market regulations, hiring and firing restrictions, collective bargaining, the Milken index, market capitalization and the Heritage index of corruption. The following variables became less significant: size of government, credit market regulations and barriers to entrepreneurship. In contrast, the number of lawyers became statistically significant when controlling for output per capita, so that a higher number of lawyers is correlated with lower job satisfaction.

satisfaction goes with a positive value for various institutional measures – indicating more economic freedom so that a positive value implies lower spending, taxes and so forth – for government investment, the top marginal income tax, regulation of businesses, time with bureaucracy, time required to start a business, irregular payments (bribes), the regulation of capital markets, bank ownership, competition between banks and interest rate controls.

Table 4. Eigenvalues for three data matrices

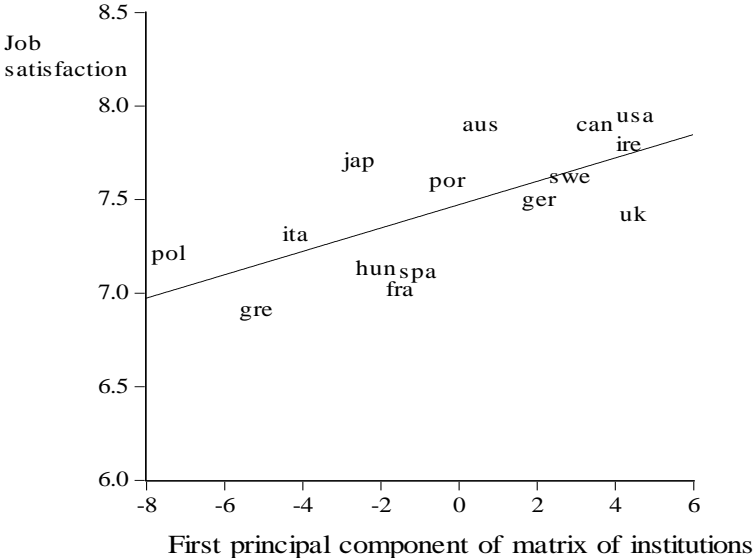
| <i>Institutions and economic performance</i> | | | | | |
|--|-------|-------|-----------|------------|--|
| Number | Value | Prop. | Cum.value | Cum. prop. | |
| 1 | 14.30 | 0.36 | 14.30 | 0.36 | |
| 2 | 12.07 | 0.30 | 26.37 | 0.66 | |
| 3 | 5.81 | 0.15 | 32.18 | 0.80 | |
| 4 | 2.53 | 0.06 | 34.71 | 0.87 | |
| 5 | 2.25 | 0.06 | 36.96 | 0.92 | |
| 6 | 1.52 | 0.04 | 38.49 | 0.96 | |
| <i>Institutions only</i> | | | | | |
| Number | Value | Prop. | Cum.value | Cum. prop. | |
| 1 | 13.11 | 0.36 | 13.11 | 0.36 | |
| 2 | 11.26 | 0.31 | 24.36 | 0.68 | |
| 3 | 4.01 | 0.11 | 28.37 | 0.79 | |
| 4 | 2.32 | 0.06 | 30.69 | 0.85 | |
| 5 | 1.91 | 0.05 | 32.60 | 0.91 | |
| 6 | 1.48 | 0.04 | 34.08 | 0.95 | |
| <i>Institutions reduced</i> | | | | | |
| Number | Value | Prop. | Cum.value | Cum. prop. | |
| 1 | 12.60 | 0.38 | 12.60 | 0.38 | |
| 2 | 8.23 | 0.25 | 20.83 | 0.63 | |
| 3 | 2.97 | 0.09 | 23.80 | 0.72 | |
| 4 | 2.65 | 0.08 | 26.45 | 0.80 | |
| 5 | 1.96 | 0.06 | 28.41 | 0.86 | |
| 6 | 1.01 | 0.03 | 29.42 | 0.89 | |

Regulation of labor market, hiring- and firing restrictions (higher number implies less regulation), the legal system, the impartiality of courts, judicial independence, the protection of intellectual property rights, capital controls, the number of listed companies, market capitalization and the absence of corruption appear with a positive sign in the eigenvector and barriers to entrepreneurship and the country ranking in the Milken index of access to capital (indicating less access to capital) appear with a negative sign.

In Table A2 we have the eigenvector for the same matrix once the four measures of economic performance – job satisfaction, participation, unemployment and productivity – have been omitted and we get a similar pattern as in Table A1 for the institutional measures. Due to missing observations for the Milken index (25 observations) and the number of listed companies and market capitalization (15 observations) we finally omit these three variables and recalculate the principal components and report the results in Table A3. Again the pattern of the eigenvectors in Table A3 is similar.

We can use the first principal component from the matrix of institutions (capital market excluded) as a proxy for corporatist institutions and plot it against our job satisfaction variable in Figure 8. A clear positive relationship appears so that greater corporatism goes with lower job satisfaction.

Figure 8. Job satisfaction and an index of corporatist institutions



The most corporatist country by this measure is Poland, then Greece, followed by Italy, Japan, Hungary, France, Spain and Portugal. The least corporatist economies are those of the US, the UK, Ireland, Canada and Sweden. The ranking of Sweden may come as a surprise but note that the institutional variables reported in Table 3 are not confined to the labor market – the centralization of the labor market in Sweden takes place in an economy that is not as corporatist

in other spheres as many other European countries.

7. Behind the aggregates

In the introductory chapter we noted a set of stylized facts from the study of job satisfaction using microeconomic data. There is some indication that job satisfaction has been falling over time in some countries; job satisfaction is higher among women, the self-employed, the young and the old, supervisors and those with secure jobs; it is smaller for union members and greater for the well paid workers. In this section we explore the robustness of our earlier results by correcting for differences between countries in the structure of their populations in light of the stylized facts. We use 47,418 observations from the World Values Survey, taken from the 1980-1981 survey, the 1990-91 survey and the 1999-2000 survey. We regress reported job satisfaction on individual attributes and country dummies. The results are shown in Table 5.

Table 5. Job satisfaction and individual attributes

| Variable | (1) | (2) | (3) |
|------------------|------------------|-----------------|-----------------|
| Constant term | 6.93 (59.9) | 6.51 (64.0) | 6.93 (59.0) |
| Sex | 0.01 (0.7) | 0.06 (2.7) | 0.02 (0.7) |
| Age | 0.008 (1.6) | -0.002 (0.4) | 0.01 (1.6) |
| Age-squared | 0.00013 (2.3) | 0.0003 (4.5) | 0.0001 (2.3) |
| Self-employed | 0.32 (8.9) | 0.28 (7.7) | 0.32 (8.9) |
| Income-deciles | 0.07 (16.7) | 0.10 (22.4) | 0.07 (16.6) |
| Union membership | -0.11 (4.4) | 0.07 (2.9) | -0.11 (4.5) |
| Time, 1990-91 | | -0.06 (2.2) | 0.03 (0.9) |
| Time, 1999-00 | | -0.22 (7.5) | -0.05 (1.5) |
| Observations | 37,810 | 37810 | 37810 |
| R-squared | 0.07 | 0.03 | 0.07 |

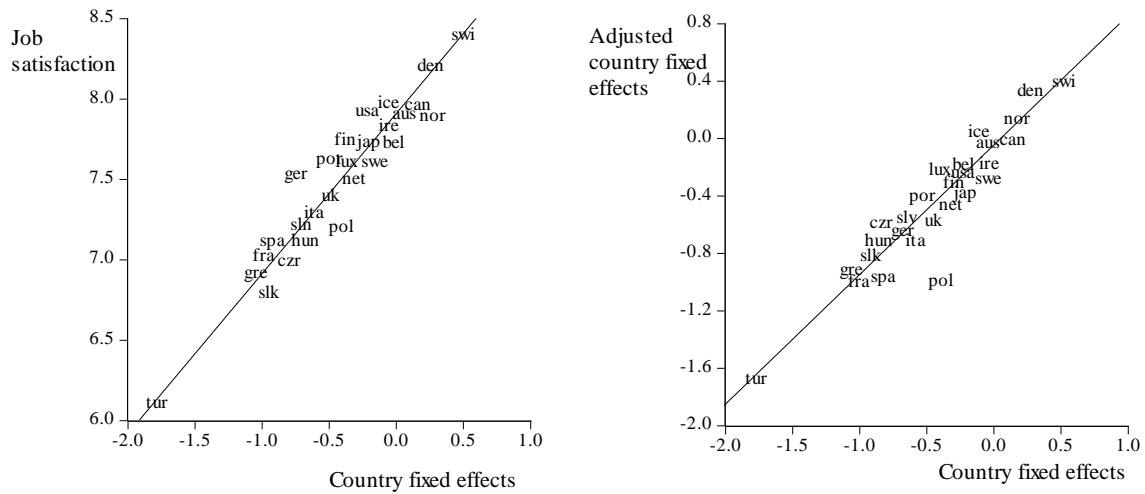
t-statistics in parentheses. The variable *sex* takes the value 1 for men and 2 for women, the variable *self-employed* takes the value 0 if not self-employed and 1 if self-employment and similarly for *union membership*.

We first regress job satisfaction on worker characteristics and a set of country fixed effects and report the results in column (1). The signs of the estimated coefficients are mostly in line with the stylized facts; women and the self-employed have greater job satisfaction, union members have lower job satisfaction and higher income brings greater satisfaction. However, the U-shaped age pattern does not arise in these data. In column (2) we omit the country fixed effects and instead include time dummies for the two periods 1990-91 and 1999-00. The estimated coefficients do indicate declining job satisfaction over time. Finally, in column (3) we include both time dummies and country fixed effects. This makes the time dummies less significant but the point estimates continue to indicate declining job satisfaction.

Figure 9 below shows the relationship between the job satisfaction variable used in previous sections of this paper (average of mean 1990-1991 and 1999-2000 values taken from the WWS) and the country fixed effects calculated by not correcting for individual characteristics, on the one hand, and the relationship between the unadjusted and adjusted (for individual characteristics) country-fixed effect, on the other hand. The left-hand panel shows that the estimated country-fixed effects are closely correlated with the average values for the two waves 1990-91 and 1999-00 reported by WWS and used in the cross-sections in previous sections. The correlation is 0.97. There is also a close relationship in the right-hand panel between the unadjusted country-fixed effects and (1) of Table 5. The correlation between the two is 0.95.¹⁸

¹⁸ The outlier in the bottom-left part of the charts is Turkey.

Figure 9. Job satisfaction and country fixed effects



We conclude that using mean values for job satisfaction is justifiable in the light of the finding that this would not be significantly altered once account is taken of various individual attributes.

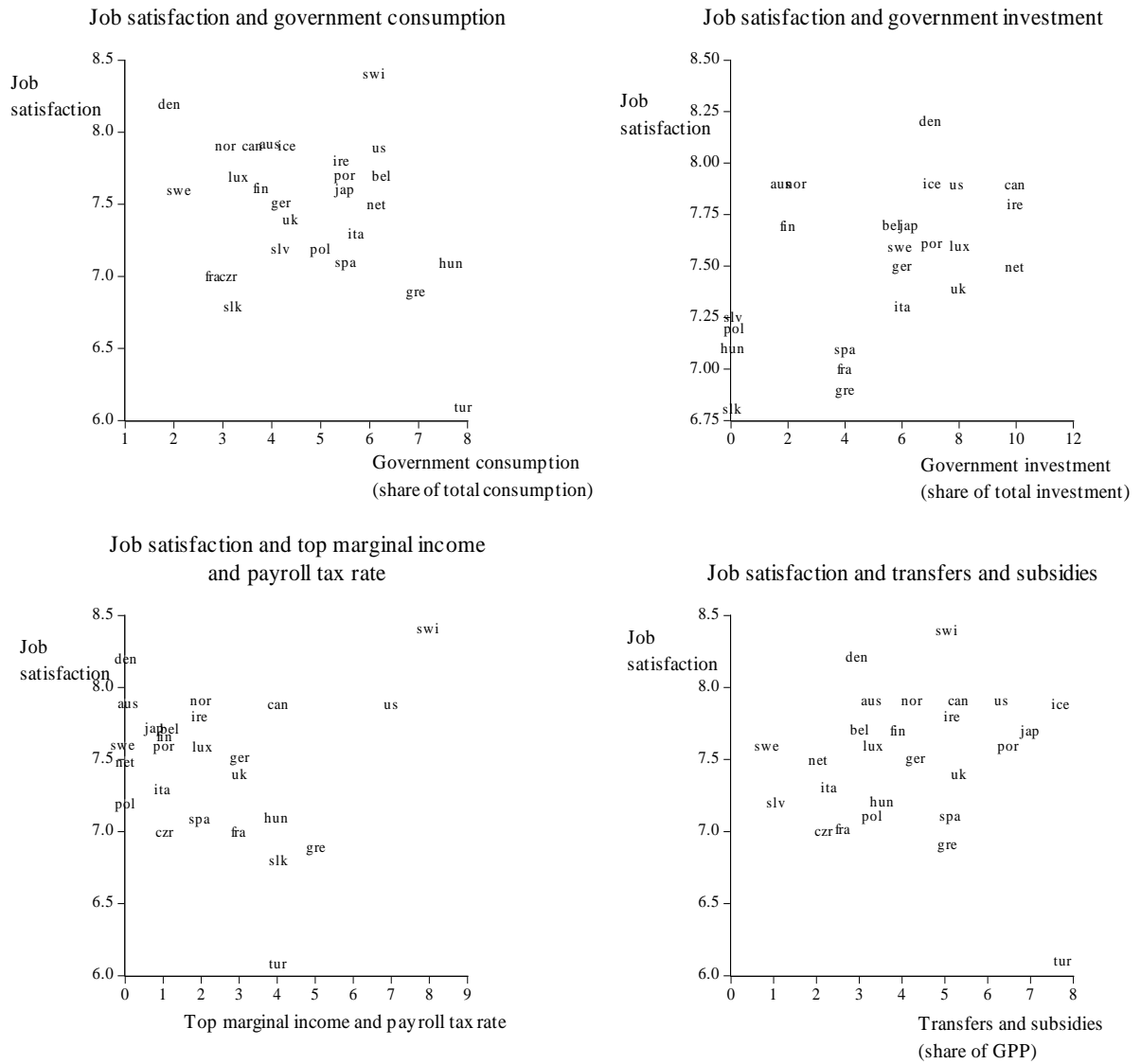
8. Conclusions

Reported job satisfaction is correlated with observable measures of economic performance, such as productivity, labor market participation and unemployment across the OECD countries. Job satisfaction is therefore not only important for life satisfaction but also for economic output.

Job satisfaction is statistically correlated with measures of capitalism and corporatism. Using the Heritage freedom indices, it is positively correlated with labor freedom, freedom from corruption and property rights and negatively correlated with the Milken rank index of access to capital (implying that greater access to capital gives greater job satisfaction). Institutions of corporatism, in contrast, tend to hamper job satisfaction. Job satisfaction is positively correlated with protection of property rights and negatively with the volume of regulation of credit, labor and businesses. Moreover, job satisfaction is negatively related to barriers to entrepreneurship and corruption and positively correlated with access to capital. The number of listed companies and market capitalization are positively correlated with job satisfaction.

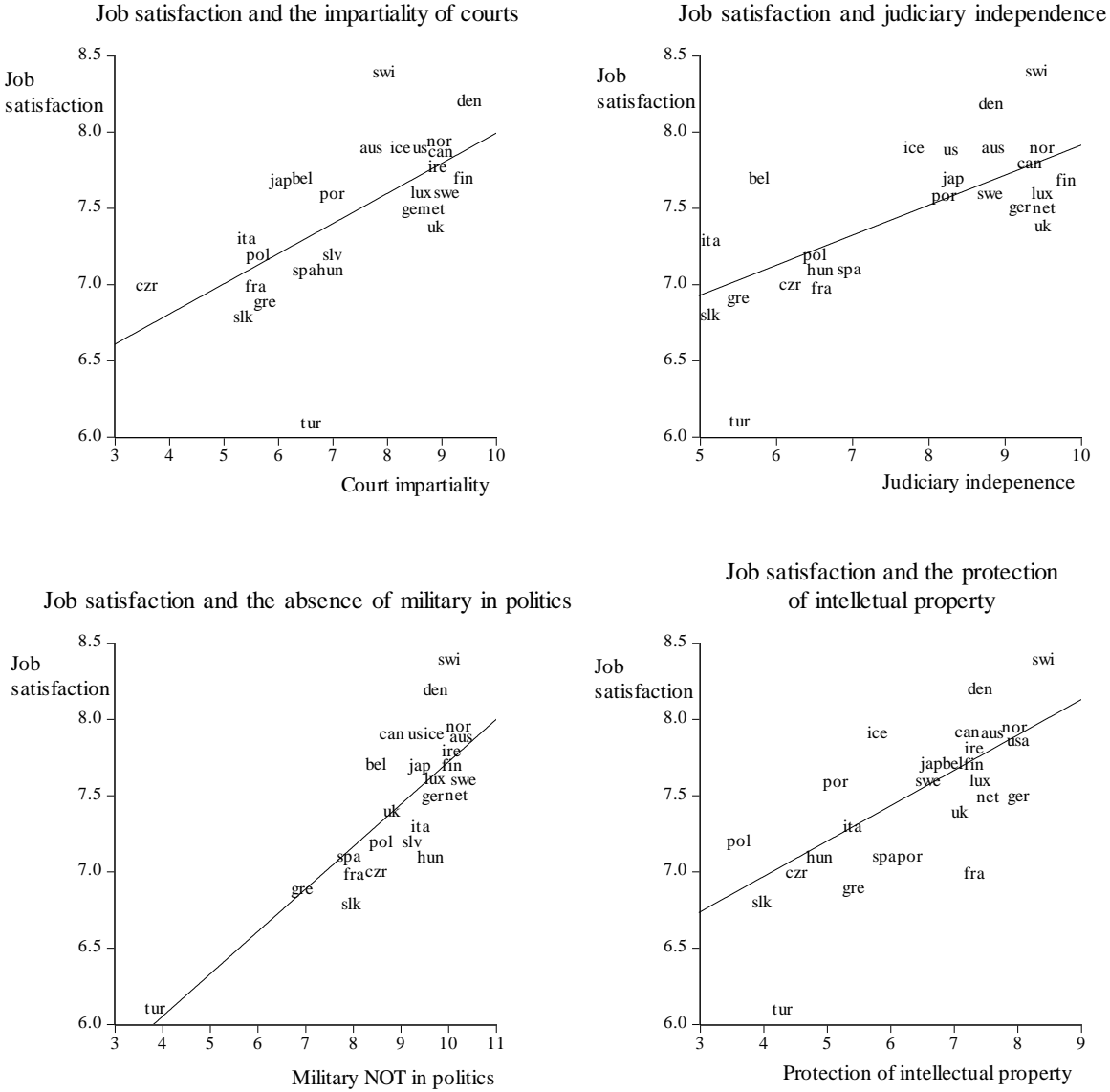
Overall, we conclude that many of the institutions we have labeled as corporatist may hamper economic performance and job satisfaction. Societies may have picked a set of institutions from the set of feasible institutions that fail to maximize economic performance.

Figure A1. The size of government



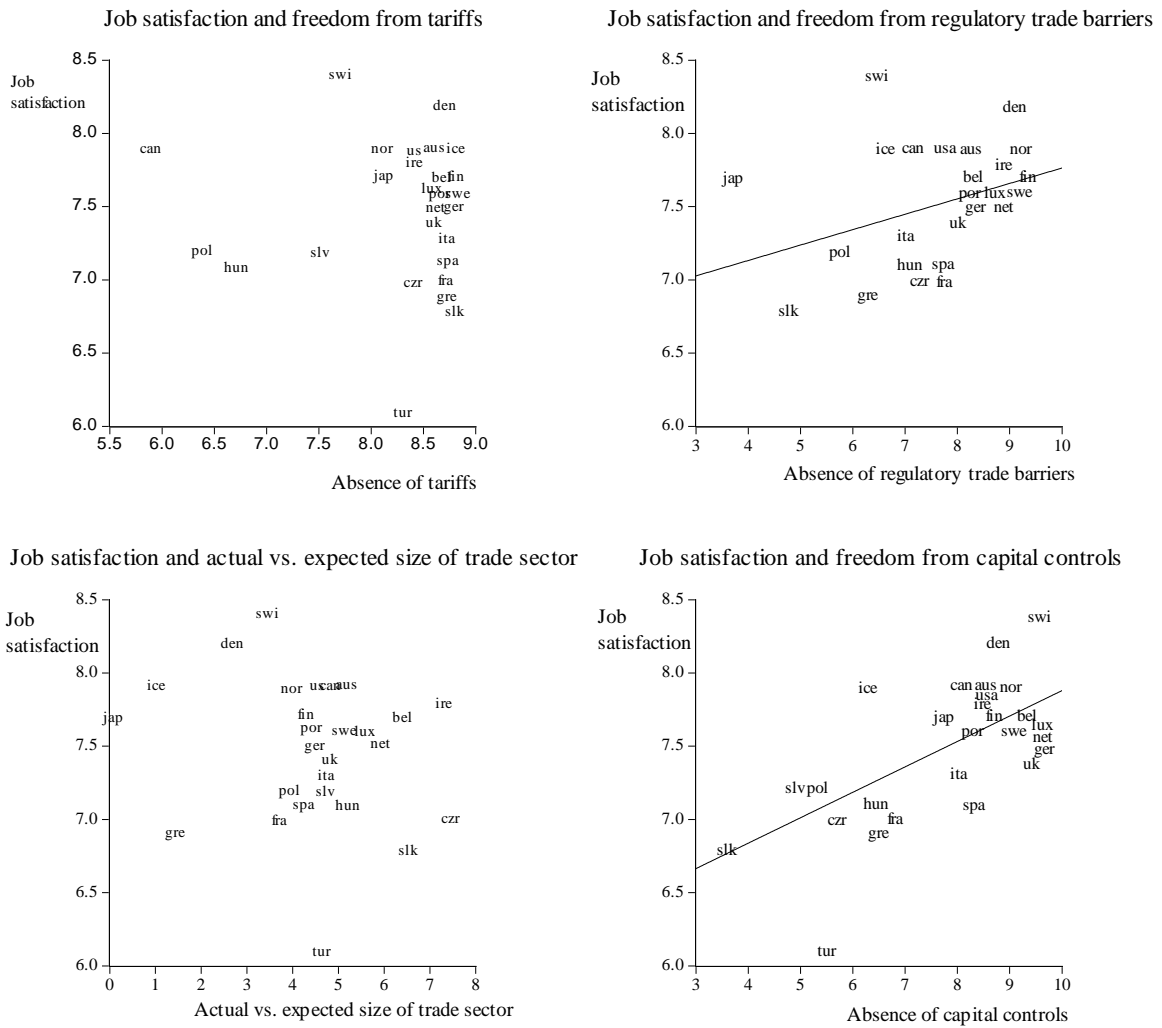
The institutions are measured on a scale from zero to ten where the number 10 denotes maximum freedom. Source: Fraser Institute (<http://www.fraserinstitute.org/>).

Figure A2. The legal structure



The institutions are measured on a scale from zero to ten where the number 10 denotes maximum freedom. Source: Fraser Institute (<http://www.fraserinstitute.org/>).

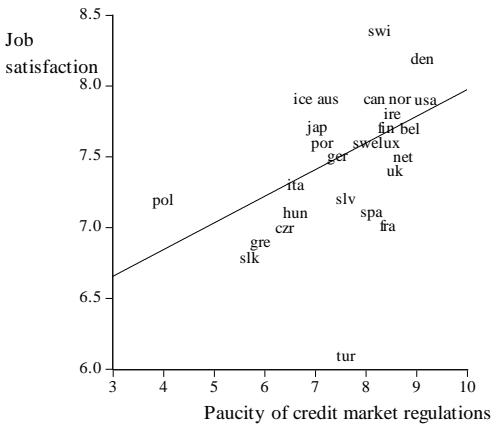
Figure A3. Impediments to trade



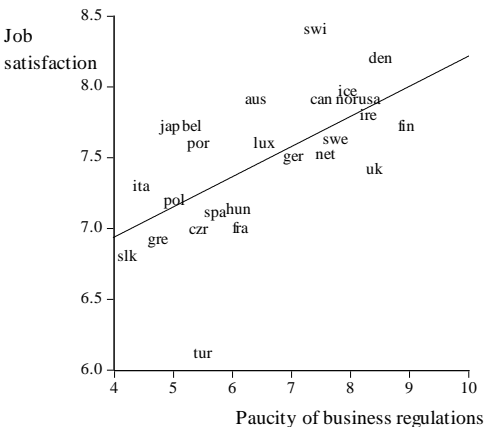
The institutions are measured on a scale from zero to ten where the number 10 denotes maximum freedom. Source: Fraser Institute (<http://www.fraserinstitute.org/>).

Figure A4. Regulation

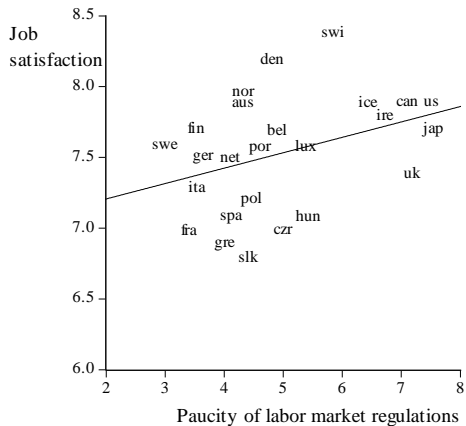
Job satisfaction and the paucity of credit market regulations



Job satisfaction and the paucity of business regulations



Job satisfaction and the paucity of labor market regulations



The institutions are measured on a scale from zero to ten where the number 10 denotes maximum freedom. Source: Fraser Institute (<http://www.fraserinstitute.org/>).

Table A1. Eigenvectors for institutions and performance

| | PC1 | PC2 | PC3 | PC4 |
|--------------------------------------|--------------|-------|-------|-------|
| Job satisfaction | 0.14 | 0.07 | -0.27 | -0.02 |
| Unemployment (1995) | -0.08 | -0.08 | 0.34 | -0.13 |
| Participation (1995) | 0.16 | 0.09 | -0.27 | 0.00 |
| Productivity (1995) | 0.16 | 0.03 | -0.07 | 0.18 |
| <i>Size of government</i> | 0.02 | 0.26 | 0.07 | 0.18 |
| Government consumption | -0.08 | 0.19 | 0.18 | 0.29 |
| Government investment | 0.17 | 0.08 | 0.09 | -0.24 |
| Top marginal tax | 0.17 | 0.10 | 0.17 | 0.17 |
| Transfers and subsidies | 0.08 | 0.24 | 0.06 | 0.14 |
| <i>Regulation of businesses</i> | 0.15 | 0.23 | 0.01 | 0.01 |
| Time with bureaucracy | 0.22 | -0.10 | -0.01 | 0.01 |
| Starting a new business* | 0.23 | 0.07 | 0.17 | -0.02 |
| Irregular payments | 0.23 | -0.11 | -0.09 | -0.04 |
| <i>Credit market regulations</i> | 0.22 | 0.00 | 0.20 | 0.07 |
| Bank ownership | 0.21 | 0.01 | 0.22 | -0.11 |
| Bank competition | 0.15 | -0.14 | 0.13 | 0.29 |
| Credit extension | 0.00 | 0.26 | -0.04 | 0.10 |
| Int. rate controls | 0.16 | -0.20 | 0.01 | 0.09 |
| <i>Labor market regulations</i> | 0.15 | 0.23 | 0.01 | 0.01 |
| Hiring and firing* | 0.23 | 0.10 | -0.03 | 0.05 |
| Barriers to entrepreneurship | -0.22 | 0.06 | -0.08 | 0.19 |
| <i>Legal structure</i> | 0.21 | -0.06 | -0.19 | 0.07 |
| Impartiality of courts | 0.24 | -0.11 | -0.05 | -0.01 |
| Judiciary independence | 0.21 | -0.02 | -0.18 | -0.02 |
| Military in politics | 0.00 | -0.10 | -0.36 | 0.07 |
| Protection of property rights | 0.18 | 0.00 | -0.19 | 0.24 |
| <i>Impediments to trade</i> | 0.09 | -0.25 | 0.08 | 0.08 |
| Tariffs | -0.11 | -0.11 | 0.02 | 0.46 |
| Hidden import barrier | 0.09 | -0.25 | 0.08 | 0.08 |
| Regulatory trade restrictions | 0.09 | -0.25 | 0.08 | 0.08 |
| Actual versus expected size of trade | 0.09 | -0.22 | 0.13 | -0.05 |
| Capital controls. | 0.13 | -0.21 | -0.02 | 0.10 |
| Minimum wage | 0.06 | 0.25 | 0.07 | 0.02 |
| Collective bargaining* | 0.12 | 0.25 | 0.01 | -0.04 |
| Unemp. Insurance | 0.09 | 0.26 | 0.01 | 0.07 |
| <i>Milken index (rank)</i> | -0.22 | 0.05 | -0.11 | 0.02 |
| <i>Number of listed companies</i> | 0.15 | 0.05 | 0.03 | -0.47 |
| <i>Market capitalization</i> | 0.18 | -0.01 | 0.10 | -0.05 |
| Number of lawyers | 0.10 | 0.03 | 0.33 | 0.17 |
| Corruption | 0.16 | 0.02 | -0.31 | 0.03 |

Table A2. Eigenvectors for institutions

| | PC1 | PC2 | PC3 | PC4 |
|--------------------------------------|--------------|--------------|-------|-------|
| <i>Size of government</i> | 0.03 | 0.27 | -0.05 | 0.18 |
| Government consumption | -0.07 | 0.20 | -0.24 | 0.22 |
| Government investment | 0.18 | 0.10 | -0.05 | -0.27 |
| Top marginal tax | 0.19 | 0.12 | -0.18 | 0.09 |
| Transfers and subsidies | 0.09 | 0.25 | -0.02 | 0.16 |
| <i>Regulation of businesses</i> | 0.14 | 0.25 | 0.06 | 0.03 |
| Time with bureaucracy | 0.24 | -0.08 | 0.05 | 0.06 |
| Starting a new business* | 0.24 | 0.10 | -0.14 | -0.03 |
| Irregular payments | 0.24 | -0.10 | 0.13 | -0.02 |
| <i>Credit market regulations</i> | 0.24 | 0.03 | -0.18 | 0.05 |
| Bank ownership | 0.23 | 0.04 | -0.20 | -0.13 |
| Bank competition | 0.18 | -0.12 | -0.13 | 0.33 |
| Credit extension | 0.00 | 0.25 | 0.04 | 0.06 |
| Int. rate controls | 0.18 | -0.19 | -0.03 | 0.05 |
| <i>Labor market regulations</i> | 0.14 | 0.25 | 0.06 | 0.03 |
| Hiring and firing* | 0.22 | 0.11 | 0.10 | 0.07 |
| Barriers to entrep.ship | -0.24 | 0.03 | 0.05 | 0.19 |
| <i>Legal structure</i> | 0.22 | -0.05 | 0.25 | 0.11 |
| Impartiality of courts | 0.25 | -0.10 | 0.09 | 0.00 |
| Judiciary independence | 0.21 | -0.02 | 0.28 | 0.06 |
| Military in politics | -0.02 | -0.12 | 0.36 | 0.03 |
| Protection of property rights | 0.17 | 0.00 | 0.24 | 0.25 |
| <i>Impediments to trade</i> | 0.10 | -0.25 | -0.12 | 0.05 |
| Tariffs | -0.12 | -0.12 | -0.08 | 0.48 |
| Hidden import barrier | 0.10 | -0.25 | -0.12 | 0.05 |
| Regulatory trade restrictions | 0.10 | -0.25 | -0.12 | 0.05 |
| Actual versus expected size of trade | 0.12 | -0.20 | -0.19 | -0.14 |
| Capital controls. | 0.13 | -0.21 | 0.06 | 0.16 |
| Minimum wage | 0.04 | 0.25 | 0.01 | 0.10 |
| Collective bargaining* | 0.10 | 0.25 | 0.06 | -0.01 |
| Unemp. insurance | 0.06 | 0.26 | 0.05 | 0.08 |
| <i>Milken index (rank)</i> | -0.25 | 0.02 | 0.07 | -0.02 |
| <i>Number of listed companies</i> | 0.16 | 0.07 | 0.03 | -0.48 |
| <i>Market capitalization</i> | 0.19 | 0.01 | -0.06 | -0.01 |
| Number of lawyers | 0.12 | 0.06 | -0.39 | 0.09 |
| Absence of corruption (Fraser) | 0.11 | -0.01 | 0.38 | 0.06 |

Table A3. Eigenvectors for institutions – reduced sample

| | PC1 | PC2 | PC3 | PC4 |
|--------------------------------------|--------------|-------|-------|-------|
| <i>Size of government</i> | 0.01 | 0.30 | 0.01 | 0.19 |
| Government consumption | -0.10 | 0.21 | 0.29 | 0.06 |
| Government investment | 0.21 | 0.07 | -0.07 | 0.14 |
| Top marginal tax | 0.09 | 0.16 | 0.33 | 0.21 |
| Transfers and subsidies | 0.07 | 0.28 | -0.04 | 0.18 |
| <i>Regulation of businesses</i> | 0.13 | 0.30 | -0.04 | -0.10 |
| Time with bureaucracy | 0.25 | -0.03 | -0.02 | -0.11 |
| Starting a new business* | 0.20 | 0.17 | 0.20 | -0.14 |
| Irregular payments | 0.26 | -0.06 | -0.09 | -0.02 |
| <i>Credit market regulations</i> | 0.25 | 0.01 | 0.01 | 0.22 |
| Bank ownership | 0.19 | 0.04 | 0.15 | 0.08 |
| Bank competition | 0.21 | -0.07 | 0.22 | 0.10 |
| Credit extension | 0.14 | 0.12 | -0.23 | 0.24 |
| Int. rate controls | 0.24 | -0.11 | -0.01 | 0.12 |
| <i>Labor market regulations</i> | 0.13 | 0.30 | -0.04 | -0.10 |
| Hiring and firing* | 0.09 | 0.20 | 0.15 | -0.30 |
| Barriers to entrepreneurship | -0.24 | -0.05 | -0.16 | 0.07 |
| <i>Legal structure</i> | 0.26 | 0.00 | -0.15 | -0.09 |
| Impartiality of courts | 0.26 | -0.01 | 0.01 | -0.13 |
| Judiciary independence | 0.24 | 0.03 | -0.20 | -0.15 |
| Military in politics | 0.13 | -0.06 | -0.22 | -0.25 |
| Protection of property rights | 0.22 | -0.01 | -0.16 | 0.20 |
| <i>Impediments to trade</i> | 0.17 | -0.22 | 0.21 | -0.05 |
| Tariffs | 0.04 | -0.14 | -0.04 | 0.41 |
| Hidden import barrier | 0.17 | -0.22 | 0.21 | -0.05 |
| Regulatory trade restrictions | 0.17 | -0.22 | 0.21 | -0.05 |
| Actual versus expected size of trade | 0.16 | -0.13 | 0.21 | -0.27 |
| Capital controls. | 0.23 | -0.08 | -0.11 | 0.14 |
| Minimum wage | 0.01 | 0.28 | 0.05 | -0.14 |
| Collective bargaining* | 0.10 | 0.29 | -0.13 | -0.05 |
| Unemp. insurance | -0.01 | 0.32 | 0.01 | -0.05 |
| Number of lawyers | 0.05 | 0.09 | 0.34 | 0.34 |
| Absence of corruption (Fraser) | 0.14 | -0.04 | -0.33 | 0.11 |

The data and their sources

| Heritage Foundation variables | |
|-------------------------------|---|
| Fiscal freedom. | Fiscal freedom is a measure of the tax burden imposed by government. It includes both the direct tax burden in terms of the top tax rates on individual and corporate incomes and the overall amount of tax revenue as a percentage of GDP. |
| Business freedom (red tape) | Business freedom is a quantitative measure of the ability to start, operate, and close a business that represents the overall burden of regulation as well as the efficiency of government in the regulatory process. |
| Labor freedom. | The labor freedom component is a quantitative measure that looks into various aspects of the legal and regulatory framework of a country's labor market. It provides cross-country data on regulations concerning minimum wages; laws inhibiting layoffs; severance requirements; and measurable regulatory burdens on hiring, hours, and so on. |
| Financial freedom. | Financial freedom is a measure of banking efficiency as well as a measure of independence from government control and interference in the financial sector. |
| Investment freedom. | The <i>Index</i> evaluates a variety of restrictions typically imposed on investment. Some countries restrict access to foreign exchange; some impose restrictions on payments, transfers, and capital transactions; in some, certain industries are closed to foreign investment. Moreover, labor regulations, corruption, red tape, weak infrastructure, and political and security conditions can also affect the freedom that investors have in a market. |
| Freedom from corruption. | Corruption erodes economic freedom by introducing insecurity and uncertainty into economic relationships. The score for this component is derived primarily from Transparency International's Corruption Perceptions Index (CPI) for 2009, which measures the level of corruption in 180 countries. |
| Trade freedom. | Trade freedom is a composite measure of the absence of tariff and non-tariff barriers that affect imports and exports of goods and services. |
| Property rights. | The property rights component is an assessment of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state. It measures the degree to which a country's laws protect private property rights and the degree to which its government enforces those laws. |
| Government spending. | This component considers the level of government expenditures as a percentage of GDP. Government expenditures, including consumption and transfers, account for the entire score. |

| Fraser Institute variables | |
|---|---|
| Size of government | General government consumption spending |
| | Transfers and subsidies as a percentage of GDP |
| | Government enterprises and investment |
| | Top marginal tax rate |
| | Top marginal income tax rate |
| | Top marginal income and payroll tax rates |
| Legal Structure and Security of Property Rights | <p>Judicial independence (GCR)</p> <p>Impartial courts (GCR)</p> <p>Protection of property rights</p> <p>Military interference in rule of law and the political process</p> <p>Integrity of the legal system</p> <p>Legal enforcement of contracts</p> <p>Regulatory restrictions on the sale of real property</p> |
| Freedom to Trade Internationally | <p>Taxes on international trade</p> <p>Regulatory Trade Barriers</p> <p>Size of the trade sector relative to expected</p> <p>Black-market exchange rates</p> <p>International capital market controls</p> |
| Regulation of Credit, Labor, and Business | <p>Credit market regulations</p> <p>Ownership of banks, Foreign bank competition, Private sector credit, Interest rate controls/Negative real interest rates</p> <p>Labor market regulations</p> <p>Minimum wage, Hiring and firing regulations, Centralized collective bargaining, Mandated cost of hiring, Mandated cost of worker dismissal, Conscriptio</p> <p>Business Regulations</p> <p>Price controls, Administrative requirements, Bureaucracy costs, Starting a business, Extra payments/Bribes/Favoritism, Licencing restrictions, cost of compliance.</p> |

| Other variables | | |
|-------------------------------|--|---|
| Public employment | Share of public employment in total employment, 1995. | ILO |
| Public employment | Share of public employment in total employment, 1999. | OECD |
| Taxes | Tax revenues as a proportion of GDP. | OECD. |
| Barriers to trade. | http://stats.oecd.org/index.aspx | OECD. |
| Barriers to entrepreneurship. | http://stats.oecd.org/index.aspx | OECD |
| State control. | http://stats.oecd.org/index.aspx | OECD |
| Social expenditures. | Social expenditures, share of GDP. | OECD. |
| Number of lawyers. | Total number of members of the Bar. | Conseil des Barreaux Europeens, American Bar Association, Advocates International, Bloomberg, Wikipedia (Canada). |
| Lobbying. | Number of special interest groups; special interest organisations, chamber of commerce. | World Guide to Trade Associations. |
| Self employment | http://www.photius.com/rankings/self_employment_by_oecd_country_2008.html Labour Market Statistics, OECD database, August 2008; Labour Force Statistics: 1986-2006, OECD, Paris, 2007; "OECD Employment Outlook, OECD, Paris, 2008. " | OECD |
| Self employment | Proportion reporting self employment. | World Values Survey. |

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