VARIETIES OF CAPITALISM AND SOCIETAL HAPPINESS: THEORY AND EMPIRICS

Thomas Palley[1]

ABSTRACT

This paper investigates the impact of different varieties of capitalism (VoC) on societal happiness. It begins with a critique of Neoclassical welfare economics which emphasizes Pareto optimality, and it argues for focusing on reported societal happiness. The paper identifies five VoC. Using a sample of twenty-six high-income countries drawn from the 2020 *World Happiness Report*, the paper shows societal happiness is systematically impacted by variety of capitalism type. Social Democratic economies report higher happiness levels. The US benefits from its standing as global economic hegemon, but it still reports lower happiness than Liberal and Social Democratic economies owing to its adverse societal relations. The public policy implication is the Social Democratic variety of capitalism produces greater societal happiness. More generally, happiness analysis can fill a gap in VoC theory and strengthen it by providing an operational form of welfare analysis. Making happiness the focus of attention will also likely change how economists interpret economies, which stands to change both economic theory and policy.

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1. Introduction

The last twenty years have seen the emergence of a vibrant new discourse under the banner of varieties of capitalism (VoC), a terminology that was introduced by Hall and Soskice (2001). The VoC discourse is both theoretical and empirical. The VoC theoretical research program is focused on providing a theoretical basis for the analytical construct, developing a taxonomy thereof,

exploring the relation between VoC analysis and global systems analysis, exploring the relevance of the VoC approach for peripheral capitalism, and understanding the place of politics in shaping alternative VoC formations. The parallel quantitative and empirical research program focuses on the macroeconomic performance of alternative VoC, particularly the rate of growth (see for example Hein et al., 2021; Hein and Martschin, 2021; Onnaran and Obst, 2016; Prante et al, 2022; and Stockhammer and Wildauer, 2016). The approach is to distinguish economies by variety and explore how that impacts macroeconomic performance.[1]

This paper seeks to open a new front in the empirical research program by linking the VoC discourse to the economics of happiness. The paper explores how reported happiness of countries is impacted by the variety of capitalism that characterizes their systems. The paper argues against Neoclassical welfare analysis centered on the Pareto optimality construct. Instead, it proposes that the welfare character of economic systems should be assessed through the lens of happiness economics. Making happiness the focus of attention will likely change how economists view and interpret economies, which stands to change both economic theory and policy.

The main findings are that societal happiness is systematically impacted by variety of capitalism type and Social Democratic countries report higher happiness levels. The US benefits from its standing as global economic hegemon, but it still reports lower happiness than Liberal and Social Democratic economies owing to its adverse societal relations. The public policy

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[1] As indicated by the range of issues, the VoC literature is now very extensive. The discourse was recently debated in a symposium in the *Review of Keynesian Economics*. Baccaro and Pontusson (2022) discuss the politics of the growth models approach to VoC analysis, Blyth and Schwartz (2022) discuss the relationship between VoC and global systems analysis, Palley (2022a) surveys the competing economic perspectives on theorizing and framing VoC analysis, Pérez Caldentey and Vernengo (2022) explore varieties of peripheral capitalism, Prante et al. (2022) explore macroeconomic interdependency between countries with different aggregate demand regimes, Soskice (2022) explores the extension of VoC analysis to the information technology era, and Stockhammer and Kohler (2022) provide an overview of the Post Keynesian demand growth regimes approach.

implication is the Social Democratic variety of capitalism produces greater societal happiness. That conclusion fits with Kenworthy's (2019) findings in his comprehensive cross-country study of Social Democratic capitalism.

The balance of the paper is as follows. Section 2 discusses the case for the economics of happiness as an alternative to Neoclassical welfare theory based upon the concept of Pareto optimality. Section 3 begins the empirical exercise, presenting a descriptive statistical analysis of country happiness data that is contained in the 2020 *World Happiness Report*. Section 4 extends the empirical exercise, providing formal regression analysis of the determinants of country happiness and the impact of VoC on happiness. Section 5 explores the relation between VoC and variables characterizing societal relations. Section 6 concludes the paper.

2. Theory: the case for happiness economics and the case against Pareto optimality

The case for the economics of happiness is that it is commonsensical, providing a pragmatic and constructive way of exploring societal well-being. As such, it is helpful for analyzing the welfare performance of alternative VoC, and it can assist society in making political decisions regarding choice of type of capitalism.

Making the case for the economics of happiness requires confronting Neoclassical economics. That is because the latter rejects happiness economics on grounds that utility is ordinal, rendering it illegitimate to aggregate or compare feelings of happiness across individuals. Instead, according to Neoclassical economics, the only thing that can be said about well-being is in terms of the criterion of Pareto optimality.

The Neoclassical position reflects the turn away from cardinal utility analysis to ordinal utility analysis that occurred in the first third of the 20th century. That turn led to rejection of utilitarian aggregate welfare analysis in which the utility of individuals is summed, with

individual's utility being given an equal weight. For a brief period, there was hope that the concept of a social welfare function (Bergson, 1938) might substitute for the utilitarian model. However, that hope was dashed by Arrow's (1950) impossibility theorem which showed it is impossible to construct a non-dictatorship social welfare function based on the preferences of members of society with properties akin to an individual utility function.

Happiness economics is dismissed by Neoclassical economics on similar grounds, the argument being it is part of the family of utilitarian analysis because individuals' reported happiness is combined in a happiness index. However, as argued below, there are robust grounds for viewing happiness economics as superior to Neoclassical welfare economics and its construct of Pareto optimality.

2.a Happiness versus Pareto optimality

Pareto optimality dominates contemporary economics' thinking about social welfare, providing a benchmark for assessing the welfare properties of an economy. According to Neoclassical theory, Pareto optimality is a property all economies should aspire to, and absence of that property means an economy is forgoing the opportunity to make at least one person better off at no cost to the rest.[2] That said, as is widely recognized, it is also an extremely weak criterion in that an economy can be Pareto optimal with either an egalitarian income distribution or a hyper-unequal distribution. Thus, the Pareto optimality construct is indifferent to distribution and has nothing to say thereon, rendering it silent on a major concern of democratic societies.

In a related vein, a change in economic arrangements may shift an economy from a non-

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[2] The fact that the competitive general equilibrium (CGE) model generates Pareto optimal outcomes is a principal appeal of the model, and that feature helps explain why Neoclassical economists have offered the CGE model as the "ideal" economy that should be used for assessing economic arrangements. According to Neoclassical theory, the CGE model embeds both positive and normative elements. It is supposedly positive economics in that the model is assumed to reflect how agents behave and how markets work. It is normative in that competitive general equilibrium is characterized by Pareto optimality, which is a desirable condition.

Pareto optimal situation to a Pareto optimal one, but the shift will likely alter the distribution of income and produce winners and losers. In that event, all will only be made better off (or at least not worse off) if the change is accompanied by compensating redistributions out of the gains (Kaldor, 1939) or by side-payments to the losers from the winners (Hicks, 1940). However, neither may be politically feasible.[3] Consequently, not only does the Pareto optimality criterion ignore final income distribution, but it also neglects redistributions arising from a movement to a Pareto optimal allocation.

Even more importantly, Pareto optimality is unobservable and is non-constructive in the sense that it cannot be directly tested for. Instead, it can only be inferred from the arrangements governing the economic system. For outcomes to be Pareto optimal, the system needs to be organized in accordance with the principles of Neoclassical competitive general equilibrium (CGE) theory and it must meet all the requirements of CGE theory (see Debreu, 1959).

That raises even more substantive problems. While the analytical construct of Pareto optimality stands on its own legs, giving it analytical relevance requires accepting the set of theoretical assumptions that support CGE theory. That involves assumptions about household behavior and arguments of utility functions, assumptions about the behavior of firms and their objective function, and assumptions about the workings of markets and absence of market imperfections. All of that is contested, and some of the necessary assumptions may even be ontologically impossible in the real world. Consequently, not only is Pareto optimality blind to distributional concerns, applying it in practice requires accepting a highly particular and contested theory.

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[3] The classic example of this is trade policy. According to Neoclassical trade theory, free trade expands income, potentially enabling all to be better off. However, free trade also redistributes income so that some (perhaps many)

Viewed in that light, the concept of Pareto optimality is akin to a Trojan horse as it smuggles in an entire theoretical framework which then defines how to think about the economy. What starts as a question of welfare analysis ends up being a dictate about how to theorize and organize the economy.

Putting the pieces together, Pareto optimality is a construct that provides no observation on well-being and at no time is actual welfare measured. Owing to its construction in terms of ordinal (subjective) utility, it actively discourages the commonsense step of asking people about their sense of well-being and happiness. Instead, it compels adoption of a particular and contested theoretical point of view, which is then used to justify reorganizing the economy on grounds that it is potentially welfare improving. Moreover, Pareto optimality is flaccid in the sense that it is indifferent to and has nothing to say about distribution, with extreme inequality and egalitarianism both being ranked as potentially Pareto optimal.

The economics of happiness provides a pragmatic atheoretical alternative for assessing welfare outcomes that escapes the above problems. The approach is in the spirit of the arguments made by Little (1950) in which welfare economics is guided by common sense, empirical observation, and judgments about the real world. Accordingly, there is merit in constructing measures of societies reported happiness despite the subjectivity of experience. Unlike Pareto optimality, the "legitimacy" of happiness measures does not depend on correspondence of the economy's organization with a particular economic theory. How an economy is organized surely affects reported happiness, but detecting that connection is a major reason for interest in measures of happiness and the answer should not be pre-supposed. In sum, on both pragmatic

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are made worse off unless the move to free trade is accompanied by compensating redistributions. However, such policies usually lack sufficient political support so that they are not enacted.

and theoretical grounds, that speaks for happiness measures replacing Pareto optimality as the lens for pragmatic assessment of economic well-being.

2.b Political economy: why economists dislike happiness economics and why it is important

The Neoclassical dismissal of happiness economics (and utilitarian analysis) has left a huge gap in the ability of economics to contribute to discussion regarding society's well-being. That gap afflicts the debate concerning VoC, which Neoclassical economics can only frame in terms of microeconomic efficiency (i.e., Pareto optimality). That frame neglects distribution and social contentment under alternative VoC, which are primary issues of public interest.

Economists' dismissal of happiness economics is justified on grounds that ordinal utility makes it impossible to aggregate well-being. However, similar aggregation difficulties are selectively overlooked in other parts of economics. Macroeconomic theory assumes both a representative household and representative firm and finds those devices analytically productive. Aggregate measures of the price level and nominal wages are constructed using index numbers, and the price level is used to construct aggregate measures of real output. The construction of such indexes involves assumptions regarding commensurability and weighting. The problem of commensurability is also visible in production theory which posits an aggregate production, aggregate capital, and aggregate labor. Thus, diverse types and vintages of capital are aggregated, as are diverse human beings with diverse skills who are aggregated into a common factor labelled as labor. Those examples show economics is willing to aggregate the potentially incommensurable, suggesting something else is in play when it comes to opposition to aggregate measures of well-being (about which more below).

Furthermore, though cardinal utility is rejected, Neoclassical economics persists with a purely hedonistic construction of the individual in which tastes are taken as exogenous. It is as if

the individual is a homunculus who is born a fully formed miniature. However, every freshman student knows that is not true. Tastes are endogenously infused, as emphasized by Galbraith (1958) in his emphasis on advertising and market creation. Individuals are also concerned about status and social standing (Frank, 1985), and such status concerns reflect cultural particularities and are also endogenously infused. The implication is individuals' preferences are shaped from outside via their cumulative social and psychological experience, and those preferences are constantly being reshaped, though that process may diminish with maturity. If that endogenous socially informed nature of preferences is accepted, the utility framework supporting the construct of Pareto optimality and the contract curve begins to collapse. That is because it is difficult to know whose utility one is talking about and, at every moment, preferences are always being reshaped by experience.

The above observations on aggregation and endogeneity of preferences are not intended as an argument for theoretical nihilism. Those constructs (i.e., the representative agent and aggregate capital) may still be useful as simplifying devices for organizing thought in a complex world. However, that is also true of measures of happiness which contain useful information about society. The implication is the asymmetry of treatment in Neoclassical economics likely reflects unacknowledged political considerations. Aggregation is rejected when it yields politically challenging implications and allowed when it does not.

That may help explain economists' stance regarding Pareto optimality and happiness economics. Pareto optimality analysis rejects aggregation. In doing so, it takes the issue of income distribution off the table, and its reliance on exogenous preferences removes critical social and psychological considerations which are relevant for understanding outcomes. That serves to suppress discussion of such issues. In contrast, happiness economics accepts

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aggregation. In doing so, it puts the issues of unhappiness, social discontent, and their causes squarely on the table. Questions about what causes happiness and why countries and social groups differ in reported happiness become the focus of analysis. That radically redirects the gaze and content of economics, tilting economics in an intrinsically political direction. That tilt compels questions which incline to discomforting the economic *status quo* as the existing economic system is not ordered to produce societal happiness.

Sixty-five years ago, Galbraith (1958) sought to table that issue in his masterpiece, *The Affluent Society*. Joan Robinson (1972) also sought to table such issues in her Richard T. Ely lecture to the American Economics Association. However, in this author's view, their project was derailed by lack of a theoretical framework for engaging the issues. Consequently, the analysis was pushed back into a conventional Neoclassical efficiency framework which narrowly framed the problematic as under-provision of public goods and pollution resulting from market failure. Side-by-side, the important emergent issue of discontent with the affluent society was abandoned by economists and ceded to psychologists and sociologists. The economics of happiness can provide the missing theoretical framework that enables economists to re-engage with the issues surfaced by Galbraith and Robinson.

2.c VoC theory and happiness economics

The economics of happiness fills an important gap in VoC theory. Palley (2022a) argues that the theoretical construct of VoC provides a counter to the claim that "There in no alternative (TINA)" to Neoliberal capitalism, a claim which was made by Mrs. Thatcher.[4] The TINA claim is tacitly supported by contemporary Neoclassical economics which advances the proposition the

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[4] The phrase was first used by Mrs. Thatcher in a speech to the Conservative Women's Conference, 21 May 1980, as "There is no real alternative"

CGE economy is an ideal that applies to all economies, and governments should aim to deliver the operating conditions it requires.

VoC theory challenges the Neoclassical view and, instead, argues economies inevitably involve choice and there is an inescapable normative question regarding what type of capitalism society will have. The theory seeks to identify different varieties of capitalism and their structural characteristics. However, having made the case for the existence of different VoC, there remains the challenge of choosing between them.

Society needs guidance as to the outcomes associated with each variety. Empirical research on the macroeconomic performance of competing varieties is one source of guidance, but it says nothing about welfare. In a sense, there is a missing welfare economics of VoC. The economics of happiness can fill that lacuna.

The logic of the relationship between VoC and happiness is illustrated in Figure 1. The variety of capitalism influences the foundational institutional arrangements, social relations, and character of economic policy. Together, that vector of factors influences both economic and non-economic outcomes, and those outcomes influence reported societal happiness.

Figure 1. A simple model of the link between VoC and happiness.
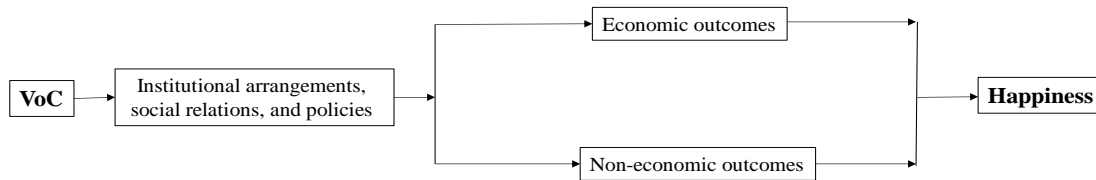
Economists emphasize the significance of economic outcomes (such as per capita GDP, the growth rate, and the unemployment rate) for happiness.[5] Perhaps as important for happiness, or perhaps even more important, are non-economic outcomes. Those non-economic outcomes include such features as a sense of economic security, a sense of trust between and caring for neighbors, and a sense of social solidarity.

Such non-economic outcomes affect people's feelings and sense of happiness, and those outcomes may be influenced by variety of capitalism. That logic connects with the logic of the welfare state and arguments in favor thereof. The welfare state produces non-economic outcomes, such as those listed above, which contribute positively to reported happiness. The importance of such factors for happiness is empirically affirmed in the *World Happiness Report* (2020). That importance is reaffirmed in the empirical findings reported below which provide support for the theoretical model described in Figure 1.

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[5] The abstract mechanics of the relationship between varieties of capitalism and economic outcomes are analyzed in Palley (2022a).

3. Data and descriptive statistical analysis

The previous section argued for the legitimacy of the economics of happiness and explained the theoretical rationale for causally linking happiness outcomes with VoC. The balance of the paper empirically tests for a VoC – happiness link using data from the 2020 *World Happiness Report (WHR)*. The report is a publication of the Sustainable Development Solutions Network, which is a project of the United Nations. The lead editors of the 2020 report were John Helliwell, Richard Layard, Jeffrey Sachs, and Jan-Emanuelle de Neve.

Anticipating what is to come, the empirical work below investigates whether reported happiness varies in a statistically significant manner according to the type of capitalism. The first half of the exercise involves a simple examination of the raw data, looking for patterns therein. The second half of the exercise applies regression analysis to investigate happiness in a sample of 26 countries. The analysis uses the happiness regression equation reported in the 2020 *WHR* as a benchmark and augments that equation to include dummy variables representing different VoC. Those dummies are tested for statistical significance.

3.a Description of data and categories of VoC

The *WHR* is global in scope, covering 156 countries. The data used in the report is posted online at https://worldhappiness.report/ed/2020/#appendices-and-data. The sample period is 2005-2020, and the data constitutes a tattered panel with missing observations across countries. For some countries the first observation is 2006, and for some the last observation is 2019.

The current exercise selected twenty-six high-income countries. Twenty-five of those countries were early members of the OECD, and the other is Taiwan Province of China. The list of countries (26) is as follows: Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New

Zealand, Norway, Portugal, South Korea, Spain, Sweden, Switzerland, Taiwan Province of

China, United Kingdom, United States.[6] The twenty-six countries were chosen because they are

high-income countries, and VoC theory and typology has been substantially developed with such

countries in mind.[7]

Having selected the country sample set, the next step involved specifying the VoC

typology and applying it to the twenty-six countries. Five types of VoC were identified, and they

are as follows: Hegemon, Liberal, Social Democratic, Mediterranean/Corporatist, and East

Asian. The country allocations were as follows: Hegemon (1 country) = United States; Liberal (5

countries) = Australia, Canada, Ireland, New Zealand, United Kingdom; Social Democratic (12

countries) = Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Luxembourg,

Netherlands, Norway, Sweden, Switzerland; Mediterranean/Corporatist (5 countries) = Cyprus,

Greece, Italy, Portugal, Spain; and East Asian (3 countries) = Japan, South Korea, Taiwan

Province of China.

The "Hegemon" category applies to the United States (US) and reflects its dominant

economic, military, and international standing. A key feature of US hegemony is the hegemony

of the dollar which confers significant economic advantages on the US. Those advantages

include the ability to run a sustained massive trade deficit and to run domestic economic policy

substantially free of external financial constraints (Eichengreen, 2011; Palley, 2022b), and they

are likely to positively impact happiness. Additionally, there may be positive non-economic

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[6] Over the last three decades the OECD has been expanded to include countries from Latin America (Chile, Colombia, Costa Rica, Mexico) and Central and Eastern Europe (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia). Those new members have made the OECD more diverse, and they are difficult to identify in terms of type of capitalism. Additionally, Israel and Turkey were also excluded for similar reasons.

[7] It may be possible to conduct a similar exercise for developing economies. However, that will require a VoC typology appropriate for such economies, which raises important questions regarding distinguishes types of capitalism from types of policy regime (Palley, 2022a).

impacts on happiness if citizens derive satisfaction from being identified with the world's most powerful country.

The three categories of Liberal, Social Democratic and Mediterranean/Corporatist reflect a blend of influences. On one hand, they align significantly with the categories identified by Esping-Andersen (1990) who framed welfare capitalism in terms of Liberal, Social Democratic, and Conservative. However, the Conservative category has been re-labelled as Mediterranean/Corporatist, reflecting the work of Hay and Wincott (2012). They introduced a five-category system for Europe consisting of Anglo-Saxon/Liberal, Continental European/Corporative, Mediterranean, Scandinavian, and Central and Eastern European.[8] The three categories are therefore a blend of the Esping-Andersen (1990) and Hay and Wincott (2012) frameworks. Esping-Andresen's Conservative variety is identified with Hay and Wincott's Mediterranean variety, while Hay and Wincott's (2012) Continental European/Corporative and Scandinavian varieties are combined in Esping-Andersen's Social Democratic variety. Lastly, there is an East Asian variety of capitalism whose logic is analyzed in the work of Amsden (1989) and Wade (1990).[9]

3.b Descriptive statistics for happiness

The Happiness Index is a measure of subjective well-being. Table 1 provides the beginning (2005/2006) and end (2019/2020) of sample country Happiness Index scores and ranking. Columns 2 and 4 show the beginning and end of sample country Happiness Index scores. Columns 3 and 5 show the country happiness rankings at the beginning and end of the sample

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[8] Hay and Wincott's (2012) categorization has been used by Hein et al. (2012) in a macroeconomic analysis that seeks to link VoC with the character of the demand growth regime.

[9] Hay and Wincott's (2012) Central and Eastern European category is not relevant because those countries are not part of the study. Including them raises multiple problems as they have significantly lower per capita income, and they also suffer from deficits regarding democratic governance. Whether those countries constitute a different variety of capitalism is also an open question.

period. Denmark was the happiest country at the beginning of the sample, and Finland was the happiest country at the end of the sample. Column 6 shows the percent change in country happiness score across the sample period. Spain (-9.4%) suffered the largest percent decline, followed by Japan (-7.7%), Belgium (-6.3%), and Italy (-5.6%). Portugal (9.7%) and South Korea (9.7%) had the largest percent increase, followed by Germany (8.4%) and Taiwan (7.4%). There were large increases in happiness in Portugal (9.7%), South Korea (9.7%), Germany (8.4%), and Taiwan (7.4%). Column 7 shows the change in country rank ordering across the sample period. Canada had the largest decline, falling 9 places. Other large decliners were Spain (8 places), Belgium (7 places), Italy (5 places), and the US and Japan (4 places each). The US fell from being 11th happiest to being 15th happiest.

Table 1. Beginning and end of sample country Happiness Index scores and rankings.

Country	Happiness Index (2005/06)	Happiness Index Rank (2005/06)	Happiness Index (2019/20)	Happiness Index Rank (2019/20)	Percent Change	Rank Change
Australia	7.34	8	7.19	11	-2.1%	-3
Austria	7.12	14	7.20	10	1.2%	4
Belgium	7.26	10	6.81	17	-6.3%	-7
Canada	7.42	5	7.07	14	-4.7%	-9
Cyprus	6.24	20	6.20	22	-0.6%	-2
Denmark	8.02	1	7.60	2	-5.2%	-1
Finland	7.67	2	7.83	1	2.1%	1
France	6.84	17	6.70	18	-2.0%	-1
Germany	6.62	18	7.17	12	8.4%	6
Greece	6.01	22	5.87	25	-2.3%	-3
Iceland			7.55	4	.	
Ireland	7.14	13	7.14	13	0.0%	0
Italy	6.85	16	6.47	21	-5.6%	-5
Japan	6.52	19	6.01	23	-7.7%	-4
Luxembourg			7.40	6	.	
Netherlands	7.46	4	7.46	5	0.0%	-1
New Zealand	7.31	9	7.23	9	-1.0%	0
Norway	7.42	6	7.37	7	-0.7%	-1
Portugal	5.41	23	5.93	24	9.7%	-1
South Korea	5.33	24	5.85	26	9.7%	-2
Spain	7.15	12	6.48	20	-9.4%	-8
Sweden	7.38	7	7.36	8	-0.3%	-1
Switzerland	7.47	3	7.60	3	1.7%	0
Taiwan	6.19	21	6.64	19	7.4%	2
United Kingdom	6.98	15	6.98	16	-0.1%	-1
United States	7.18	11	6.99	15	-2.7%	-4

Figure 2 plots timeline graphs of individual country's Happiness Index using interpolated data that fills in for missing observations (about which more below). Table 2 shows the overall sample mean Happiness Index score, the mean Happiness Index score for the five different VoC,

and the ranking of type mean scores. Social democratic capitalism ranked highest (rank 1), followed by liberal capitalism (rank 2), US hegemonic capitalism (rank 3), East Asian capitalism (rank 4), and Mediterranean/corporatist capitalism (rank 5).

Figure 2. Timeline graphs of interpolated country Happiness Indexes.

Graphs by Country name
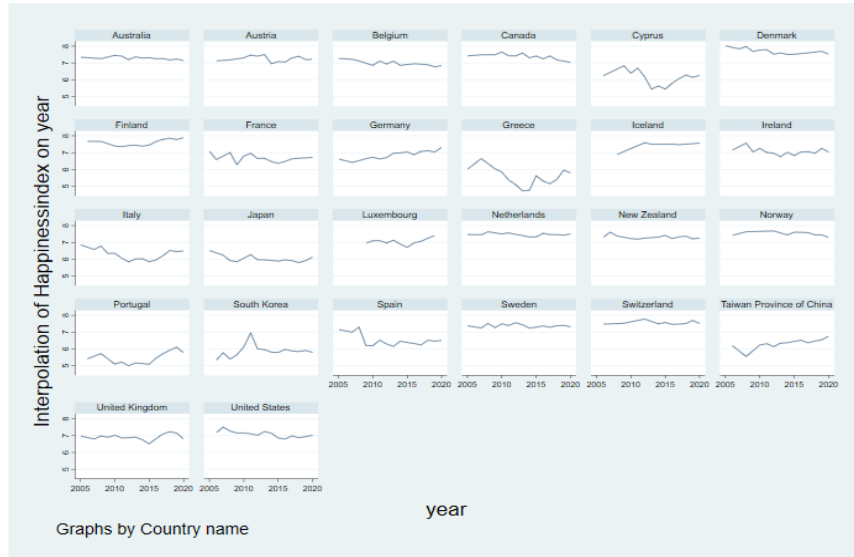
Table 2. VoC average happiness index score and rank.

	All	US	Liberal	Social Democratic	Med/Corp	East Asian
Happiness index	6.84	7.09	7.19	7.26	6	6.06
Rank		3	2	1	5	4

Figure 3 plots the average annual Happiness Index scores for each VoC type. The figure

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visually confirms the ranking of type happiness scores in Table 2. Additionally, over the sample period, the figure shows that the Happiness Index appears to have fallen in all VoC types except Social Democracy. That speaks to the dismal political economic character of the last two decades in advanced capitalist societies (Palley, 1998, 2012).

Figure 3. Annual average Happiness Index by VoC group.
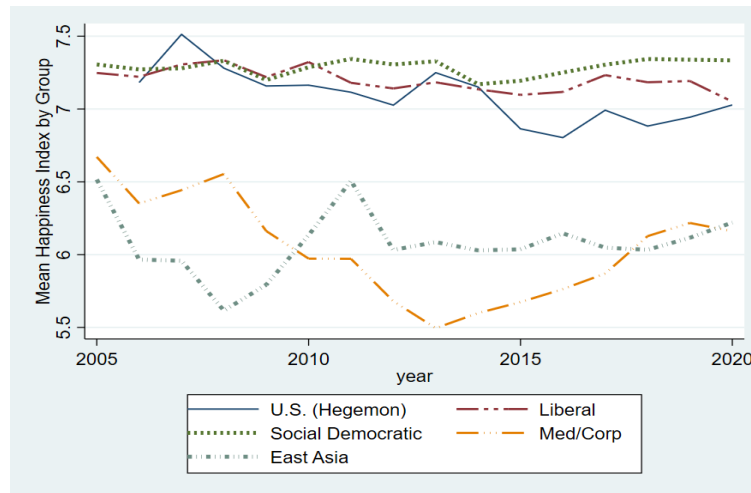
Table 3 shows the mean Happiness Index for VoC types, and it also shows the test for difference of VoC mean Happiness Index scores relative to the overall sample mean. The sample means for all five types are statistically different from the overall sample mean at the 1% t-test level. The tests for US Hegemon, Liberal, and Social Democratic reject the null in favor of the hypothesis that the VoC group mean > total population sample mean. The tests for East Asian and Mediterranean/Corporatist reject the null in favor of the hypothesis that the group mean < population sample mean. That pattern suggests there are structural factors behind the differences in happiness index scores of different VoC types.

Table 3. Happiness Index (HI) descriptive statistics for alternative VoCs.
*** = significant at 1 percent confidence level.

Variable	Observations	Mean	Std. Dev.	Min	Max	Difference of means t-statistic
All						
Happiness Index	353	6.84	0.69	4.72	8.02	
HI (Interpolated)	397	6.87	0.68	4.72	8.02	
US Hegemon						
Happiness Index	15	7.090137	0.1848133	6.8036	7.512688	5.2149***
HI (Interpolated)	15	7.090137	0.1848133	6.8036	7.512688	5.2149***
Liberal						
Happiness Index	72	7.189611	0.231017	6.515445	7.650346	12.8412***
HI (Interpolated)	78	7.196387	0.2285905	6.515445	7.650346	12.6102***
Social Democratic						
Happiness Index	153	7.263554	0.3662321	6.283498	8.018934	14.3053***
HI (Interpolated)	180	7.285702	0.3609421	6.283498	8.018934	15.4519***
Med/Corp						
Happiness Index	70	5.99608	0.5774249	4.720251	7.294473	-12.228***
HI (Interpolated)	78	6.028475	0.5807539	4.720251	7.294473	-12.7974***
East Asian						
Happiness Index	43	6.059273	0.3374262	5.332178	6.946599	-15.1724***
HI (Interpolated)	46	6.058309	0.3316165	5.332178	6.946599	-16.6010***

Table 3 also reports means and difference of mean test results for the sample using interpolated values of Happiness Index scores. There are 353 raw Happiness Index observations. Interpolation increases that by 44, raising the total number of observations to 397. The impact of interpolation on total Happiness Index sample observations is shown in Appendix 1. The impact is almost entirely concentrated at the beginning of the sample period (2005-09) where the missing observations are concentrated.

The reason for interpolation is it is needed to test for the stationarity of Happiness Index scores, and stationarity is germane for the specification of regression equations using Happiness Index scores as the dependent variable. Table 4 shows that, considered together as a panel, the country Happiness Index scores are stationary according to the Im-Pesaran-Shin (2003) unit root test at the 1% significance level.[10]

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[10] The Im-Pesaran-Shin unit root test was selected due to the limited number of observations for individual countries within the panel data. The rationale for using the test is that "In large N heterogeneous panel data models with T

Table 4. Stationarity test of twenty-six interpolated country Happiness Index panels.

Happiness Variable	Im, Pesaran, and Shin Test Statistic
Level	
No Trend Included	-2.58***
Trend Included	-4.52***
1st Difference	
No Trend Included	-8.96***
Trend Included	-9.35***
*** p<0.01, ** p<0.05, * p<0.1	

3.c Descriptive statistics for independent variables explaining country happiness

The 2020 *WHR* presents regression equations explaining country Happiness Index scores. The dependent and independent variables used are defined in detail in the Statistical Appendix 1 for Chapter 2 of the report. Brief definitions of the independent variables are as follows:

• Log per capita GDP (LGDPpc) is measured in purchasing power parity at constant 2017 international dollar prices.

• Social Support is based on a binary response to the question do you have friends and family you can rely on if in trouble?

• Healthy life expectancy at birth (HLE) is based on data extracted from the World Health Organization's Global Health Observatory data repository.

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small (say around 15), it is only possible to devise sufficiently powerful unit root tests which are informative in some average sense, namely indicating whether the null of a unit root can be rejected in the case of a significant fraction of the countries in the Panel (Pesaran, 2012)".

•Freedom to Make Life Choices is the national average of responses to the Gallup World Poll (GWP) question about freedom to choose what you do with your life.

•Generosity is the residual from regressing the response to the GWP question have you made a charitable donation in the last month against GDP per capita.

•Corruption Perception is the national average of survey responses to two GWP questions re perceived corruption in government and business.

•Positive Affect is defined as the average of three positive affect measures (happiness, laugh, enjoyment) in the GWP survey.

•Negative Affect is defined as the average of three negative affect measures (worry, sadness, anger) in the GWP survey.

All the above variables have a positive theoretical impact on happiness, except for Corruption Perception and Negative Affect

Table 5 reports the VoC average group scores and rank for the above independent variables. The top half of Table 5 reports VoC group mean scores for the independent variables, while the bottom half of Table 5 reports VoC group rankings for those variables. Note, high mean values of Corruption Perception and Negative Affect theoretically lower a type's happiness rank as those two variables should negatively affect happiness. High mean values of the other variables theoretically raise a type's happiness rank as they should positively impact happiness.

Table 5. VoC average independent variable scores and rank.

Variable	All	US	Average score Liberal	Social Democratic	Med/Corp	East Asian
Log per capita GDP	10.76	10.96	10.77	10.91	10.49	10.59
Social support	0.91	0.92	0.95	0.94	0.87	0.85
Healthy life expectancy	72.07	68.44	72.21	71.98	72.54	72.87
Freedom to make life choices	0.84	0.84	0.9	0.9	0.7	0.72
Generosity	0.08	0.19	0.26	0.1	-0.1	-0.08
Corruption perception	0.57	0.69	0.41	0.44	0.87	0.76
Positive affect	0.78	0.83	0.83	0.8	0.7	0.75
Negative affect	0.23	0.26	0.22	0.2	0.32	0.18

Variable	US	Liberal	Rank Social Democratic	Med/Corp	East Asian
Log per capita GDP	1	3	2	5	4
Social support	3	1	2	4	5
Healthy life expectancy	5	3	4	2	1
Freedom to make life choices	3	2	1	5	4
Generosity	2	1	3	5	4
Corruption perception	3	1	2	5	4
Positive affect	1	2	3	5	4
Negative affect	4	3	2	5	1
Average Rank	2.75	2	2.375	4.5	3.375

The bottom line of Table 5 reports the average of each type's rank scores. The resulting average independent variable rank score has a close correspondence with the ranking of type mean happiness scores shown in Table 2. Mediterranean/Corporatist capitalism ranks bottom (5) in both Tables 2 and 5. East Asian capitalism ranks fourth (4) in both, while US hegemonic capitalism ranks third (3) in both. However, Liberal capitalism ranks second in Table 2 and first in Table 5, while Social Democratic capitalism ranks first in Table 2 and second in Table 5.

3.d Log per capita GDP (LGDPpc) descriptive statistics

LGDPpc is a time series and requires further examination for stationarity. Figure 4 shows the timeline graphs describing the evolution of country LGDPpc. For most countries, there is a slight increase over the sample period. Greece is a glaring exception, reflecting its prolonged economic crisis which set in after 2009 when Greece was revealed to have had higher budget deficits than disclosed, and its banking system also imploded owing to the global financial crisis. The multi-country decline in LGDPpc in 2020 reflects the onset of the covid-19 pandemic.

Figure 4. Timeline graphs of country log per capita GDP.

Graphs by Country name

Table 6 provides data on country beginning and end of sample LGDPpc levels and rankings, along with percent change and change of ranking over the sample period. Except for Greece and Italy, all countries had positive per capita GDP growth over the sample period. Figure 5 shows average annual LGDPpc by VoC type. There are three features to note. First, there is a clear ranking of LGDPpc with the US having the highest level, followed in order by Social Democratic countries, Liberal countries, East Asian countries, and Mediterranean/Corporatist countries. Second, the sample period saw East Asian countries overtake Mediterranean/Corporatist countries. That overtaking reflects the prolonged decline in average LGDPpc experienced by the latter owing to the severe effect of the Great Financial Crisis (2008/09) and ensuing euro zone crisis. Third, Figure 5 confirms the negative impact of the covid-19 pandemic on LGDPpc in 2020.

Table 6. Beginning and end of sample country LGDPpc and rankings.

Country	LGDPpc (2005/06)	LGDPpc Rank (2005/06)	LGDPpc (2019/20)	LGDPpc Rank (2019/20)	Percent Change	Rank Change
Australia	10.66	14	10.79	13	1.21%	-1
Austria	10.84	6	10.90	8	0.49%	2
Belgium	10.74	9	10.81	12	0.63%	3
Canada	10.65	15	10.76	15	1.06%	0
Cyprus	10.57	18	10.59	22	0.19%	4
Denmark	10.85	5	10.93	6	0.74%	1
Finland	10.75	8	10.77	14	0.24%	6
France	10.65	16	10.69	16	0.39%	0
Germany	10.69	12	10.86	10	1.63%	-2
Greece	10.46	22	10.27	25	-1.86%	3
Iceland			10.88	9		
Ireland	10.97	3	11.35	2	3.42%	-1
Italy	10.70	11	10.61	20	-0.88%	9
Japan	10.53	20	10.61	21	0.73%	1
Luxembourg			11.65	1		
Netherlands	10.81	7	10.93	7	1.05%	0
New Zealand	10.53	21	10.63	19	1.02%	-2
Norway	11.03	2	11.05	4	0.19%	2
Portugal	10.36	23	10.41	24	0.52%	1
South Korea	10.31	24	10.65	18	3.35%	-6
Spain	10.55	19	10.55	23	0.07%	4
Sweden	10.74	10	10.86	11	1.12%	1
Switzerland	11.05	1	11.11	3	0.53%	2
Taiwan	10.61	17	.	.	.	.
United Kingdom	10.66	13	10.69	17	0.24%	4
United States	10.92	4	11.02	5	0.90%	1

Figure 5. Annual average LGDPpc by VoC group.
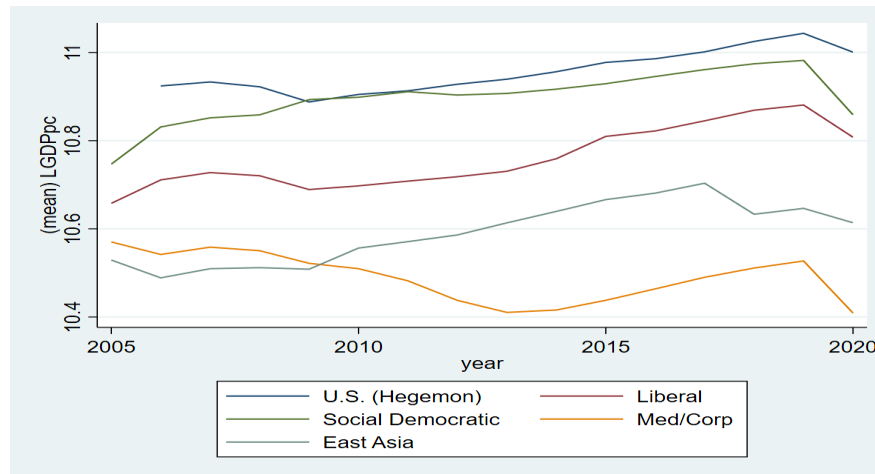

Table 7 provides an analysis of LGDPpc descriptive statistics for alternative VoC using both actual and interpolated data. There are 343 actual observations of LGDPpc, which rises to 393 after interpolation. The table confirms the rank ordering of type means shown in Figure 5, and t-tests confirm that four types have means that are statistically different from the overall

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sample mean at the 1% significance level. Per capita GDP of the U.S. hegemon and Social Democracy VoC is above the overall sample mean, while that of Mediterranean/Corporatist and East Asian VoC is below. The Liberal variety's mean is not statistically different from the overall sample mean.

Table 7. Log GDP per capita descriptive statistics for alternative VoCs.

Variable	Observations	Mean	Std. Dev.	Min	Max	Difference of means t-statistic
All						
Log GDP per capita	349	10.76	0.25	10.21	11.65	
Log GDP per capita (Interpolated)	393	10.76	0.25	10.21	11.65	
US Hegemon						
Log GDP per capita	15	10.96	0.05	10.89	11.04	16.2358***
Log GDP per capita (Interpolated)	15	10.96	0.05	10.89	11.04	16.0099***
Liberal						
Log GDP per capita	72	10.77	0.19	10.52	11.37	0.3092
Log GDP per capita (Interpolated)	78	10.76	0.18	10.52	11.37	-0.0214
Social Democratic						
Log GDP per capita	153	10.91	0.23	10.64	11.65	8.0152***
Log GDP per capita (Interpolated)	180	10.90	0.21	10.64	11.65	8.9528***
Med/Corp						
Log GDP per capita	69	10.48	0.13	10.21	10.73	-17.0841***
Log GDP per capita (Interpolated)	77	10.49	0.13	10.21	10.73	-18.2960***
East Asian						
Log GDP per capita	40	10.59	0.13	10.31	10.87	-8.4360***
Log GDP per capita (Interpolated)	43	10.59	0.12	10.31	10.87	-9.1427***

Table 8 reports the results of Im-Pesaran-Shin (2003) unit root stationarity tests on the 26 country panels for LGDPpc. LGDPpc is non-stationary, but it is trend stationary at the 10% significance level and the 1st difference is stationary at the 5% significant level. However, it is not stationary when testing for both a 1st difference and time trend. Additional robustness checks are used to account for this when using LGDPpc as an independent variable below.

Table 8. Stationarity test of twenty-six interpolated country LGDPpc panels.

LGDPpc Variable	Im, Pesaran, and Shin Test Statistic
Level	
No Trend Included	0.73
Trend Included	-1.32*
1st Difference	
No Trend Included	-1.65**
Trend Included	-0.74
*** p<0.01, ** p<0.05, * p<0.1	

Table 9 provides simple fixed effects regression estimates testing for a relationship between LGDPpc and variety type. The Liberal variety is selected as the benchmark, so that the constant represents mean LGDPpc of the Liberal group. The reason for selecting it is that the contemporary benchmark economic organization is the Neoliberal model which the Liberal group epitomizes. The US is a Neoliberal economy supplemented by hegemonic standing. The other three types (Social democracy, Mediterranean/Corporatis, East Asian) have Neoliberal market elements that are modified by their variety particularities. Model 2 in Table 8 includes a time trend which is positive and statistically significant.

Table 9. Fixed effects VoC regression with interpolated country LGDPpc as the dependent variable.

INDEPENDENT VARIABLES	MODEL 1	MODEL 2
Constant	10.96***	10.90***
	(0.0118)	(0.0166)
USHegemon	0.194***	0.192***
	(0.0237)	(0.0209)
SocDemVoC	0.143***	0.141***
	(0.0260)	(0.0253)
MedCorpVoC	-0.273***	-0.273***
	(0.0255)	(0.0255)
EastAsiaVoC	-0.171***	-0.169***
	(0.0278)	(0.0259)
Year		0.00707***
		(0.00193)
Observations	393	393
R-squared	0.465	0.480
Number of countries	26	26
Standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

4. Happiness Index regression analysis: the impact of VoC

The above descriptive data (Table 2, Table 3, Figure 3) suggest that country Happiness Indexes are systematically impacted by country variety type. This section empirically examines that proposition using multiple regression analysis. The section begins with a simple fixed effects regression, and then goes on to examine the proposition using an augmented version of the 2020 *WHR* Happiness Index regression equation.

4.a Fixed effects Happiness Index regression

Table 10 reports regression estimates for the following VoC fixed effect equation:

(1) Happiness Index$_{i,t}$ = α_0 + α_1USHegemonVoC + α_2SocialDemocraticVoC + α_3MediterraneanCorporatistVoC + α_4EastAsianVoC + α_5Time

The subscript i,t = observation for country i at time t where i = 1,... , 26. The baseline is the Liberal variety (α_0), and there are four dummy variables (α_1, α_2, α_3 ,α_4) capturing the impact of the other varieties on happiness. Additionally, there is a time trend that counts by year, given the

annualized character of the data. Model 1 in Table 10 is estimated without a time trend, while

Model 2 is estimated with one.

Table 10. Fixed effects VoC regression with interpolated country Happiness Index as the dependent variable.

INDEPENDENT VARIABLES	MODEL 1	MODEL 2
Constant	7.196***	7.255***
	(0.0259)	(0.0429)
US Hegemon	-0.106**	-0.104**
	(0.0531)	(0.0478)
SocDemVoC	0.0893**	0.0906**
	(0.0374)	(0.0372)
MedCorpVoC	-1.168***	-1.168***
	(0.0707)	(0.0697)
EastAsiaVoC	-1.138***	-1.137***
	(0.0551)	(0.0559)
Year		-0.00765*
		(0.00436)
Observations	397	397
R-squared	0.6782	0.680
Number of countries	26	26
Standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

The results in Table 10 are consistent with the descriptive statistical analysis of the

previous section. The US Hegemon fixed effect dummy attribute a negative effect on happiness,

which can also be identified with the US being ultra-Neoliberal. The other VoC fixed effect

dummies attribute a positive effect on happiness from being a Social Democratic variety, and a

negative effect on happiness from being a Mediterranean/Corporatist or East Asian variety. The

Mediterranean/Corporatist effect is marginally more negative than the East Asian VoC effect.

The results for Model 2 are similar in message and magnitude, and the time trend is also

negative, but only at the 10 percent significance level.

4.b Structural Happiness Index regressions

The next step involved estimating a structural model of happiness. That structural model was

constructed using the 2020 *WHR* model (Chapter 2, Table 2.1) as a benchmark. The *WHR* model

uses the independent variables discussed earlier in Section 3.c. The innovation in the current

analysis is the addition of VoC fixed effects. The theoretical model is as follows:

(2) Happiness Index$_{i,t}$ = α_0 + α_1LGDPpc$_{i,t}$ + α_2SocialSupport$_{i,t}$ + α_3HealthyLifeExpectancy$_{i,t}$ +

α_4FreedomToMakeLifeChoices$_{i,t}$ + α_5Generosity$_{i,t}$ + α_6Perceptions of Corruption$_{i,t}$ +

α_7PositiveAffect$_{i,t}$ + α_8NegativeAffect$_{i,t}$ + α_9USHegemonVoC + α_{10}SocialDemocraticVoC +

α_{11}MediterraneanCorporatistVoC + α_{12}EastAsianVoC

The subscript i,t = observation for country i at time t where i = 1,...., 26.

Table 11 shows two models and variants thereof. Model 1 excludes the Positive and

Negative Affect variables, and it is an estimated equation reported in the 2020 *WHR* in Table 2.1.

The *WHR* Model is estimated using the *WHR*'s full sample of 156 countries, whereas the current

study (Models 1.a – 1.c) uses the restricted sample of 26 high-income countries. Model 1.a is the

estimate of that model without year fixed effects for the 26-country sample. Model 1.b is the

estimate of that model without year fixed effects and with VoC dummies for the 26-country

sample. Model 1.c excludes the LGDPpc variable.

Table 11. WHR structural regression with country Happiness Index as the dependent variable.

INDEPENDENT VARIABLES	WHR Model 1	Model 1.a	Model 1.b	Model 1.c	WHR Model 2	Model 2.a	Model 2.b	Model 2.c
Constant		0.799	1.247	2.298**		0.911	2.211*	2.910***
		(1.555)	(1.348)	(1.118)		(1.560)	(1.318)	(1.019)
LGDPpc	0.31***	0.432***	0.128		0.324***	0.396***	0.0786	
	(0.066)	(0.105)	(0.0946)		(0.065)	(0.102)	(0.0888)	
Social Support	2.362***	3.187***	2.803***	2.828***	2.011***	3.034***	2.117***	2.122***
	(0.363)	(0.478)	(0.506)	(0.511)	(0.389)	(0.469)	(0.496)	(0.497)
Healthy Life Expectancy	0.036***	-0.0225*	0.0246	0.0288*	0.033***	-0.0177	0.0410***	0.0438***
	(0.01)	(0.0119)	(0.0150)	(0.0150)	(0.009)	(0.0127)	(0.0135)	(0.0135)
Freedom to Make Life Choices	1.199***	0.809**	0.350	0.352	0.522*	0.669*	0.245	0.250
	(0.298)	(0.339)	(0.341)	(0.347)	(0.287)	(0.347)	(0.327)	(0.330)
Generosity	0.661**	0.800***	1.078***	1.101***	0.39	0.713***	0.945***	0.960***
	(0.275)	(0.131)	(0.133)	(0.134)	-0.273	(0.146)	(0.143)	(0.144)
Perceptions of Corruption	-0.646**	-1.107***	-1.099***	-1.124***	-0.27	-1.033***	-1.031***	-1.044***
	(0.297)	(0.119)	(0.115)	(0.116)	(0.294)	(0.114)	(0.111)	(0.111)
Positive Affect					1.944***	0.462	0.254	0.230
					(0.355)	(0.421)	(0.395)	(0.397)
Negative Affect					0.379	-0.916**	-2.371***	-2.421***
					(0.425)	(0.396)	(0.504)	(0.509)
US Hegemon VOC			0.443***	0.493***			0.557***	0.590***
			(0.0845)	(0.0781)			(0.0799)	(0.0760)
SocDemVoC			0.298***	0.322***			0.238***	0.252***
			(0.0378)	(0.0356)			(0.0391)	(0.0381)
MedCorpVoC			6.39e-05	-0.0154			0.0899	0.0814
			(0.0836)	(0.0837)			(0.0857)	(0.0852)
EastAsiaVoC			-0.135	-0.145			-0.347***	-0.357***
			(0.0865)	(0.0880)			(0.0917)	(0.0925)
Year fixed effects	Included	Excluded	Excluded	Excluded	Included	Excluded	Excluded	Excluded
Number of countries	156	26	26	26	156	26	26	26
Observations	1627	362	362	362	1623	362	362	362
R-squared	0.751	0.818	0.846	0.846	0.768	0.822	0.859	0.859
Standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Comparison of WHR Model 1 with Model 1.a shows the coefficients are similarly signed and have similar statistical significance.[11] The R-squared goodness of fit measure is also slightly higher for Model 1.a. That pattern implies the *WHR* benchmark model fits well for the restricted sample of 26 rich countries, and it provides a solid basis from which to explore the effect of VoC types on happiness. It also implies that factors impacting happiness in the global sample also impact happiness in the restricted sample.

Model 1.b adds four VoC fixed effects, which are the focus of interest of the current paper. The R-squared goodness of fit is improved, which suggests the VoC fixed effects have explanatory power. The US Hegemon and Social Democratic VoC fixed effect coefficients are positive and increase happiness relative to the Liberal type. The Mediterranean/Corporatist and East Asia VoC fixed effect coefficients are statistically insignificant. The inclusion of VoC fixed effects causes the LGDPpc coefficient to become statistically insignificant. That reflects the fact

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[11] No constant is reported for the *WHR* Model 1 because it includes country fixed effects so that there is one constant per country. The constant in Models 1.a-1.c represents the effect of being a Liberal type,

that the US and Social Democracies have high per capita GDP, which draws away some impact previously attributed to LGDPpc.

The regression also clarifies the data and confirms the theoretical argument. Earlier, the raw Happiness Index data in Table 2 and Figure 3 suggested the US Hegemon VoC effect was negative, which was contrary to the theoretical argument. Now, the US Hegemon effect is positive, confirming there is a happiness benefit from being the hegemon. However, despite that positive Hegemon effect, the US is less happy overall because its societal characteristics are adverse. Those characteristic effects explain why the US reports a lower raw Happiness Index score despite being the hegemon.

Model 1.c excludes LGDPpc. The coefficient signs and statistical significance are substantially unchanged. However, the constant term (reflecting the Liberal VoC effect) increases in size and becomes statistically significant, and the coefficients of US Hegemon and SocDem also increase in size. That pattern suggests there is information in the LGDPpc variable, and that information is picked up by the VoC fixed effect coefficients when it is removed.

Model 2 augments Model 1 by including the Positive and Negative Affect variables. The *WHR* Model 2 is drawn from Table 2.1 of the 2020 *WHR*. Model 2.a estimates that model without year fixed effects for the 26-country sample. Model 2.b estimates that model with VoC fixed effects for the 26-country sample, and Model 2.c estimates the same model with the exclusion of LGDPpc. Model 2.a roughly replicates Model 2, showing that the augmented *WHR* benchmark model is relevant to the sample of 26 high-income countries. Model 2.b adds VoC fixed effects and the R-squared goodness of fit increases, showing that the VoC fixed effects contain explanatory power. Model 2.b also includes LGDPpc as an explanatory variable, which is desirable for reasons discussed above, and it is the preferred specification.

A comparison of Models 1.b and 2.b shows that inclusion of the Positive and Negative affect variables increases the R-squared goodness of fit. The constant (representing the Liberal VoC type) is also larger and statistically significant. The coefficients of US Hegemon and Social Democratic VoC types are also both larger and remain statistically significant. Lastly, the coefficient of East Asia VoC type is more negative and becomes statistically significant. In sum, Model 2.b speaks to VoC type mattering for happiness. Being the US hegemon and being Social Democratic both increase happiness. However, despite gaining significantly from its status as hegemon and having higher GDP per capita, the US is still less happy than Social Democratic countries (see Table 2 and Figure 3) because of its adverse societal characteristics.

Table 12 repeats the above regression estimates, with the inclusion of year fixed effects, which mimics the *WHR* regression. The inclusion of year fixed effects may also mitigate difficulties associated with LGDPpc possibly being non-stationary. The estimated equations in Table 12 are Models 3.a - 3.c and Models 4.a - 4.c. A comparison of the results in Tables 11 and 12 show that the coefficients of the estimated equations are very similar regarding signing, magnitude, and significance. Table 12 shows including a year fixed effect raises the R-squared goodness of fit, suggesting the year fixed effect contains information and is warranted. The preferred equation is Model 4.b which includes a year fixed effect, LGDPpc, and the positive and negative affect variables. It has the highest R-squared. The coefficients of the VoC fixed effects are also a little larger in Model 4.b compared to Model 2.b, but their signing and significance are the same. That pattern re-affirms that relative to the Liberal VoC type, the US hegemonic and Social Democracy VoC types raise happiness, while the East Asian type lowers happiness.

Table 12. WHR structural regression with country Happiness Index as the dependent variable.

INDEPENDENT VARIABLES	WHR Model 1	Model 3.a	Model 3.b	Model 3.c	WHR Model 2	Model 4.a	Model 4.b	Model 4.c
Constant		1.014	-0.104	0.872		0.911	2.211*	2.910***
		(1.630)	(1.554)	(1.340)		(1.560)	(1.318)	(1.019)
LGDPpc	0.31	0.424***	0.114		0.324	0.387***	0.0751	
	(0.066)***	(0.105)	(0.0865)		(0.065)***	(0.101)	(0.0808)	
Social Support	2.362	2.908***	2.274***	2.302***	2.011	2.823***	1.718***	1.726***
	(0.363)***	(0.472)	(0.508)	(0.510)	(0.389)***	(0.468)	(0.490)	(0.490)
Healthy Life Expectancy	0.036	-0.0192	0.0574***	0.0605***	0.033	-0.0193	0.0712***	0.0736***
	(0.01)***	(0.0129)	(0.0197)	(0.0201)	(0.009)***	(0.0136)	(0.0183)	(0.0186)
Freedom to Make Life Choices	1.199	0.837***	0.331	0.333	0.522	0.687**	0.236	0.240
	(0.298)***	(0.310)	(0.300)	(0.305)	(0.287)*	(0.325)	(0.289)	(0.291)
Generosity	0.661	0.877***	1.144***	1.167***	0.39	0.808***	1.047***	1.063***
	(0.275)**	(0.136)	(0.139)	(0.138)	-0.273	(0.150)	(0.144)	(0.144)
Perceptions of Corruption	-0.646	-1.124***	-1.170***	-1.191***	-0.27	-1.051***	-1.100***	-1.112***
	(0.297)**	(0.117)	(0.118)	(0.119)	(0.294)**	(0.111)	(0.110)	(0.110)
Positive Affect					1.944	0.459	0.105	0.0833
					(0.355)***	(0.409)	(0.374)	(0.374)
Negative Affect					0.379	-0.777**	-2.170***	-2.213***
					0.425	(0.394)	(0.485)	(0.487)
US Hegemon VOC			0.581***	0.622***			0.683***	0.713***
			(0.0923)	(0.0914)			(0.0907)	(0.0900)
SocDemVoC			0.321***	0.342***			0.267***	0.280***
			(0.0382)	(0.0360)			(0.0391)	(0.0379)
MedCorpVoC			0.00137	-0.0117			0.0828	0.0749
			(0.0791)	(0.0798)			(0.0809)	(0.0810)
EastAsiaVoC			-0.171*	-0.178*			-0.360***	-0.369***
			(0.0934)	(0.0952)			(0.0940)	(0.0948)
Year fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Number of countries	156	26	26	26	156	26	26	26
Observations	1627	362	362	362	1623	362	362	362
R-squared	0.751	0.828	0.862	0.862	0.768	0.830	0.872	0.872
Standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Lastly, Section 4 reported that LGDPpc may be non-stationary. Given that, the models in Table 12 were re-estimated using the change in LGDPpc (ΔLGDPpc) in place of the level of LGDPpc. The results are reported in Table 13 as Models 5.a – 5.c and 6.a – 6.c. 4.b. The results are very similar to those reported in Table 12 regarding coefficient signs, magnitudes, and significance. Based on theoretical considerations and the R-squared goodness of fit statistic, the preferred equation is Model 6.b. It includes the ΔLGDPpc variable and the positive and negative affect variables. The conclusions remain the same as before.

Table 13. WHR structural regression with country Happiness Index as the dependent variable.

INDEPENDENT VARIABLES	Model 5.a	Model 5.b	Model 5.c	Model 6.a	Model 6.b	Model 6.c
Constant	6.094***	-0.195	0.872	6.320***	0.136	1.013
	(1.052)	(1.407)	(1.340)	(1.176)	(1.374)	(1.279)
ALGDPpc	-0.910	0.550		-1.327**	0.352	
	(0.690)	(0.663)		(0.646)	(0.592)	
Social Support	2.982***	2.139***	2.302***	2.885***	1.670***	1.726***
	(0.496)	(0.501)	(0.510)	(0.487)	(0.488)	(0.490)
Healthy Life Expectancy	-0.0335**	0.0708***	0.0605***	-0.0340**	0.0809***	0.0736***
	(0.0133)	(0.0206)	(0.0201)	(0.0144)	(0.0196)	(0.0186)
Freedom to Make Life Choices	1.202***	0.418	0.333	0.988***	0.306	0.240
	(0.347)	(0.313)	(0.305)	(0.373)	(0.306)	(0.291)
Generosity	0.907***	1.182***	1.167***	0.848***	1.089***	1.063***
	(0.146)	(0.140)	(0.138)	(0.160)	(0.147)	(0.144)
Perceptions of Corruption	-1.209***	-1.149***	-1.191***	-1.083***	-1.076***	-1.112***
	(0.136)	(0.119)	(0.119)	(0.120)	(0.109)	(0.110)
Positive Affect				0.428	0.105	0.0833
				(0.442)	(0.385)	(0.374)
Negative Affect				-1.165***	-2.178***	-2.213***
				(0.435)	(0.511)	(0.487)
US Hegemon VoC		0.654***	0.622***		0.736***	0.713***
		(0.0945)	(0.0914)		(0.0945)	(0.0900)
SocDemVoC		0.354***	0.342***		0.294***	0.280***
		(0.0372)	(0.0360)		(0.0391)	(0.0379)
Med/CorpVoC		-0.00777	-0.0117		0.0891	0.0749
		(0.0805)	(0.0798)		(0.0836)	(0.0810)
EastAsiaVoC		-0.207**	-0.178*		-0.380***	-0.369***
		(0.0957)	(0.0952)		(0.0971)	(0.0948)
Year fixed effects	Included	Included	Included	Included	Included	Included
Number of countries	26	26	26	26	26	26
Observations	349	349	362	349	349	362
R-squared	0.807	0.845	0.846	0.814	0.859	0.859
Standard errors in parentheses						
*** p<0.01, ** p<0.05, * p<0.1						

In sum, this section has provided structural multiple regression estimates of the relationship between country Happiness Index scores and VoC types. The data and benchmark regression equation were drawn from the 2020 *WHR*, and that benchmark equation was then augmented to include fixed effects for different VoC. Tables 11 – 13 provide estimation results for alternative model specifications. The stability and significance of the regression coefficients speak to the robustness of the theoretical claim regarding existence of a structural relationship between societal happiness and VoC.

The principal findings are (1) the US's hegemonic standing increases its happiness; (2) despite that, the US is less happy than countries with Liberal and Social Democratic VoC because of its adverse societal relations; (3) the Social Democratic variety increases country happiness; and (4) the East Asian variety lowers country happiness.[12] As regards policy,

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[12] It should be noted that it is possible "response bias" may also contribute to the US Hegemon and East Asian VoC effects. For instance, US Americans may have cultural proclivities that systematically contribute to them overstating their happiness, in which case the US Hegemon VoC coefficient would be biased upward. Conversely, East Asians may have cultural proclivities whereby they are more modest and less effusive in their response to questions about

countries cannot choose to adopt the US hegemonic variety, but they can choose whether to
adopt the Social Democratic variety. Doing so will increase their happiness, and that also holds
for the US which also has the option of doing so.

5. The relationship between societal variables and VoC

The regressions in Tables 11, 12, and 13 use different societal variables as independent variables
to explain country Happiness Index scores. This section explores the relationship between those
societal variables and type of VoC. The regression results help understand the logic of the
findings reported in the previous section.

Table 14 reports VoC fixed effects regressions with country societal variables as the
dependent variable. The regressions are specified with the US Hegemon variety as the baseline
(i.e., as the constant). The added fixed effects are for Liberal, SocDem, MedCorp, and East Asian
varieties. The results show that the societal variables have a statistically significant relation to the
type of capitalism. That means the variety type may influence the magnitude of those societal
variables over a long-time horizon. In that case, it could be argued the impact of the VoC type on
the Happiness Index score is understated in the regressions reported in Tables 11 – 13.

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their happiness, which would bias down the East Asian VoC coefficient. Unfortunately, response bias cannot be
ruled out. It is a built-in possibility, and it is a perennial concern in happiness economics that is rooted in the
methodology.

Table 14. VoC fixed effects regression with country societal measures as the dependent variable.

	Social Support	Social Support	Healthy Life Expectancy	Healthy Life Expectancy	Freedom to Make Life Choices	Freedom to Make Life Choices	Generosity	Generosity	Perceptions of Corruption	Perceptions of Corruption	Positive Affect	Positive Affect	Negative Affect	Negative Affect
INDEPENDENT VARIABLES	MODEL 1.a	MODEL 1.b	MODEL 2.a	MODEL 2.b	MODEL 3.a	MODEL 3.b	MODEL 4.a	MODEL 4.b	MODEL 5.a	MODEL 5.b	MODEL 6.a	MODEL 6.b	MODEL 7.a	MODEL 7.b
Constant	0.923***	0.933***	68.44***	67.07***	0.843***	0.843***	0.187***	0.264***	0.688***	0.735***	0.828***	0.847***	0.262***	0.253***
	(0.00542)	(0.00583)	(0.0552)	(0.215)	(0.00935)	(0.0117)	(0.0163)	(0.0165)	(0.00937)	(0.0194)	(0.00531)	(0.00578)	(0.00528)	(0.00587)
LiberalVOC	0.0263***	0.0259***	3.693***	3.746***	0.0605***	0.0605***	0.0731***	0.0693***	-0.277***	-0.279***	0.000555	-0.000203	-0.0401***	-0.0398***
	(0.00573)	(0.00506)	(0.118)	(0.216)	(0.0103)	(0.0104)	(0.0189)	(0.0145)	(0.0142)	(0.0177)	(0.00659)	(0.00514)	(0.00628)	(0.00581)
SocDemVoC	0.0152***	0.0150***	3.477***	3.500***	0.0627***	0.0627***	-0.0821***	-0.0835***	-0.243***	-0.243***	-0.0233***	-0.0236***	-0.0610***	-0.0608***
	(0.00567)	(0.00507)	(0.0941)	(0.213)	(0.00997)	(0.0100)	(0.0190)	(0.0154)	(0.0166)	(0.0196)	(0.00618)	(0.00504)	(0.00582)	(0.00526)
MedCorpVoC	-0.0550***	-0.0554***	3.963***	4.015***	-0.142***	-0.142***	-0.289***	-0.291***	0.181***	0.180***	-0.121***	-0.122***	0.0530***	0.0533***
	(0.00874)	(0.00833)	(0.135)	(0.225)	(0.0177)	(0.0177)	(0.0227)	(0.0198)	(0.0120)	(0.0164)	(0.00795)	(0.00688)	(0.00766)	(0.00714)
EastAsiaVoC	-0.0682***	-0.0684***	4.235***	4.393***	-0.126***	-0.126***	-0.261***	-0.268***	0.0746***	0.0736***	-0.0766***	-0.0770***	-0.0855***	-0.0853***
	(0.00954)	(0.00923)	(0.329)	(0.329)	(0.0160)	(0.0160)	(0.0208)	(0.0176)	(0.0142)	(0.0174)	(0.0120)	(0.0116)	(0.00948)	(0.00923)
Year		-0.00120***		0.172***		5.36e-05		-0.00901***		-0.00587***		-0.00246***		0.00105**
		(0.000390)		(0.00947)		(0.000841)		(0.00133)		(0.00154)		(0.000518)		(0.000448)
Observations	397	397	387	387	397	397	369	369	395	395	397	397	397	397
R-squared	0.495	0.505	0.311	0.638	0.592	0.591	0.554	0.601	0.652	0.664	0.466	0.494	0.594	0.599
Number of countries	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Standard errors in parentheses														
*** p<0.01, ** p<0.05, * p<0.1														

Five of the societal variables (Social support, Healthy life expectancy, Freedom to make life choices, Generosity, and Positive affect) should positively impact the Happiness index, and two (Perceptions of corruption, Negative affect) should negatively impact it. Inspecting the regression coefficients shows that the US scores lower on most of the positive impact societal variables, and scores higher on the negative impact variables. That pattern is consistent with arguments made above whereby the societal variables were invoked to reconcile why the US has a low reported Happiness Index (see Table 2 and Figure 3), yet the coefficient of US Hegemonic variety is large and positive in the Happiness Index regressions. The US benefits from its hegemonic status, but that benefit is offset by its adverse societal relations.

The regressions in Table 14 provide insight into the sources of comparative happiness and the impacts of VoC types on reported happiness. Social Democracies score high on social support (Models 1.a and 1.b), but low on generosity (Models 4.a and 4.b). That may reflect how

government support is high, and it also displaces private community support and charity which is less needed and less relied on.

The US scores relatively low on healthy life expectancy (Models 2.a and 2.b), as shown by the positive dummy coefficients for other VoC types. That pattern likely reflects well known problems with the US health care system. The US scores relatively high on freedom to make life choices (Models 3.a and 3.b), likely reflecting the US's social libertarianism.

The US scores relatively high on positive affect (Models 6.a and 6.b) and high on negative affect (Models 7.a and 7.b). That is reversed for the East Asian VoC type, which scores relatively low on both affects. That pattern may reflect cultural and societal security effects. US citizens may be optimistic (high positive affect) and subject to societal stress and insecurity (high negative affect), whereas East Asian citizens may be more restrained (low positive affect) and their society may be subject to less churn and change (low negative affect).

In sum, Liberal and SocDem VoC types tend to score better than the US on societal variables, which contributes to explaining their higher Happiness Index scores. The MedCorp and East Asian VoC types have a mixed record on societal variables compared to the US Hegemon.

6. Conclusion

This paper investigated the impact of different VoC on happiness. It began with a critique of Neoclassical welfare economics which emphasizes Pareto optimality, and it argued for focusing on reported societal happiness. Using a sample of twenty-six high-income countries drawn from the 2020 *WHR*, the paper showed that Social Democratic countries systematically report higher happiness levels. The US benefits from its standing as global economic hegemon, but it still reports lower happiness than Liberal and Social Democratic economies owing to its adverse

societal relations. The public policy implication is the Social Democratic variety of capitalism produces higher levels of societal happiness. More generally, the paper shows how happiness analysis can fill a gap in VoC theory and strengthen it by providing an operational form of welfare analysis. Making happiness the focus of attention will also likely change how economists interpret economies, which stands to change both economic theory and policy.

Appendix

Count of country Happiness Index observations before (left-hand panel) and
after (right-hand panel) interpolating for missing years.

```
. tab year if Happinessindex!=.                        . tab year if HIi!=.

   year |   Freq.   Percent     Cum.              year |   Freq.   Percent     Cum.

   2005 |     13      3.68      3.68               2005 |     13      3.27      3.27
   2006 |     12      3.40      7.08               2006 |     24      6.05      9.32
   2007 |     15      4.25     11.33               2007 |     24      6.05     15.37
   2008 |     22      6.23     17.56               2008 |     25      6.30     21.66
   2009 |     16      4.53     22.10               2009 |     26      6.55     28.21
   2010 |     23      6.52     28.61               2010 |     26      6.55     34.76
   2011 |     23      6.52     35.13               2011 |     26      6.55     41.31
   2012 |     26      7.37     42.49               2012 |     26      6.55     47.86
   2013 |     24      6.80     49.29               2013 |     26      6.55     54.41
   2014 |     25      7.08     56.37               2014 |     26      6.55     60.96
   2015 |     26      7.37     63.74               2015 |     26      6.55     67.51
   2016 |     26      7.37     71.10               2016 |     26      6.55     74.06
   2017 |     26      7.37     78.47               2017 |     26      6.55     80.60
   2018 |     25      7.08     85.55               2018 |     26      6.55     87.15
   2019 |     26      7.37     92.92               2019 |     26      6.55     93.70
   2020 |     25      7.08    100.00               2020 |     25      6.30    100.00

  Total |    353    100.00                        Total |    397    100.00
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