The Urban-Rural Happiness Gradient Across Countries

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This study shows, for the first time, that city unhappiness is common across the world. We use the World Values Survey comulative dataset 1981-2020 from www.worldvaluessurvey.org. In all developed countries, without exception, we find that city dwellers are not happier than rural residents. This finding is important because it contradicts a common belief that emerged recently, arguably for ideological reasons (e.g., Glaeser 2011b, Glaeser et al. 2016, Burger et al. 2020), claiming that urban areas are happier. The effort to contravene the findings that cities tend to be less happy than smaller areas is arguably due to economics axioms: money is centered in cities (production, productivity, income, and consumption increase with population size), and therefore, cities have greater utility, so they must be happier. Yet, empirical evidence says otherwise.

Research by Berry and Okulicz-Kozaryn (2011) provided evidence of an "urban-rural gradient" in many countries, where happiness levels rise from lowest in largest cities to highest in smallest places. The gradient is non-linear—the very largest cities are markedly less happy than all other areas in a country, e.g.: New York City (Okulicz-Kozaryn and Mazelis 2016, Senior 2006), London (Office for National Statistics 2011, Chatterji 2013), Helsinki (Morrison 2015), Bucharest (Lenzi and Perucca 2016), and Sydney (cited in Morrison 2011). The goal of this paper is to test the gradient across countries using one dataset with uniform set of variables. This study shows, for the first time, that city unhappiness is common across the world.[1]

The intersection of Subjective Wellbeing (SWB) and Urban Studies is an exciting area of research. Academics, policymakers, administrators, and people in general, have started to pay more attention to SWB, and not just to monetary measures such as GDP or income. This occurs at a time when the world is experiencing massive urbanization, arguably the most dramatic change to way of life of human species (Wirth 1938, Hanson 2015). It raises the question, how do cities affect the human condition? Do cities affect subjective wellbeing?

Modern research on the effect of cities on human wellbeing should be rooted on the extensive classic urban sociological research (Tönnies [1887] 2002, Wirth 1938, Simmel 1903, Park 1915, Park et al. [1925] 1984), which advanced our knowledge on the negative effect of cities on humans. Quantitative research on the urban-rural happiness gradient dates back to Gurin et al. (1960) and Campbell et al. (1976), who found a significant negative effect of urbanicity on humans. Over the past several decades, dozens of studies have concurred (for a review see Okulicz-Kozaryn 2015).

Yet, most research in the area examines the United States, Western Europe, and recently China and only a handful of other countries. Most studies are conducted focusing on a single country. Hence, we contribute to the literature by using a uniform dataset across many countries. In what follows, we investigate the relationship between urbanicity and happiness across the world.

We begin by defining SWB and the mechanisms likely to link the size of a place to SWB, then discuss the literature and provide a critical perspective on economic theory. We present our model, discuss results, and conclude by discussing the findings.

Subjective Wellbeing

Subjective wellbeing is an umbrella term for various subjective measures of wellbeing, notably positive and negative affects, happiness, and life satisfaction. Most of the SWB research, including this study, uses the life satisfaction measure, which is a global self evaluation of one's life as a whole. This measure is mostly cognitive and not affective—a respondent evaluates her life as whole globally (professional, personal, family, community, etc). The measure captures everything that is going on in one's life—that's a major advantage of the SWB measure over other social and economic indicators aiming at measuring the human condition, progress, and development. The SWB measure is simply the most comprehensive measure possible dwarfing earlier measures such as income, education, or life expectancy (for a review see Diener 2009). Following usual practice, for simplicity, we use these terms interchangeably: SWB, happiness, and life satisfaction, but specifically we mostly mean life satisfaction as previously defined.

[1] Most extant research about the urban-rural happiness gradient is about the United States, Western Europe, recently China, and a handful of other countries. These studies were conducted in single countries, not using a uniform dataset across countries. The three apparent exceptions (Berry and Okulicz-Kozaryn 2009, Burger et al. 2020, Easterlin et al. 2010a) do not actually examine a gradient—they all use binary urban-rural operationalizations and present simple mean differences for each country and aggregate results to group of countries in regressions. The Gallup data used by Burger et al. (2020) and Easterlin et al. (2010a) are problematic as elaborated later on in this paper.

The SWB measure is also at least adequately reliable and valid and considered acceptable for public policy making and public administration (Diener 2009, Stiglitz et al. 2009), and used frequently in urban research (e.g., Moeinaddini et al. 2020, Mouratidis 2019, Wang et al. 2019, ano 2017, Ma et al. 2017, Wkeziak-Bialowolska 2016, Valente and Berry 2016, Chen et al. 2015).

There are cross-cultural comparability caveats, however, and SWB may not be adequately comparable across countries (Kahneman et al. 1999, Diener 2009). This limitation should be kept in mind when comparing results across countries in the present study. More focus should be on within-country differences, and this is what this study is mostly about—the difference between smaller and larger places in terms of SWB within different countries. We treat each country separately and do not pull the data together. In short, one should focus on within-country differences across urbanicity and exercise caution when comparing effects across countries.

Definition, Theory, and Potential Causal Mechanism

This is an observational study, not an experiment, and we don't test causality, but it is instructive to discuss the potential causal mechanisms driving unhappiness in the largest places.

It is useful to begin with the theory that defines urbanicity and predicts how it would affect SWB. We start with the classic urban sociological theory of urban malaise (Tönnies [1887] 2002, Wirth 1938, Simmel 1903, Park 1915, Park et al. [1925] 1984): cities produce superficiality, transitoriness, withdrawal, impersonality, superficiality, deviance, shallowness, anomie, alienation, and cognitive overload.[2] Sociological theory does not specify at which point urban malaise arises, there is clearly no hard cutoff point, rather, the more urban, the more malaise. There may be a certain threshold though, at which malaise intensifies as hinted at by Fischer (1973): in the largest cities. In classical urban sociology, a city is defined by a large population size, density, and heterogeneity (Wirth 1938). It is clearly not a binary distinction, but a gradient: "we should not expect to find abrupt and discontinuous variation between urban and rural" (Wirth 1938, p. 2). Thus, we can conclude that urbanicity has mostly a negative effect on humans, and it is rather a continuum than a binary measure, although a threshold at a population of several hundred thousand where malaise intensifies may exist.

Another indication of continuity in the effect of the size of a place on the human condition comes from physics. There is a physical city constant of 1.15: if you double the area's population size, many phenomena (e.g. crime, GDP, income, patents) increase by 15% (Bliss 2014, Bettencourt et al. 2010, Bettencourt and West 2010, Bettencourt et al. 2007).[3]

We would like to especially highlight that for over 95% of our evolutionary history[4] we have lived outside of cities as hunter-gatherers usually in small bands of 50–80 people (Maryanski and Turner 1992). This way of life only started to slowly change in about 10,000 B.C. with the domestication of animals and agriculture. The first large cities (larger than several hundred thousand) only emerged after 500 B.C. and there were just a handful of them. It was only after industrialization that large cities started to house a noticeable proportion of the population, and only in the 20th century we saw an urbanization explosion—in 1800 a mere 1.7% of the world population lived in cities larger than 100k, it slowly increased to 2.3% in 1850, it doubled to 5.5% in 1900, and doubled again to 13% in 1950 (Davis 1955).

The larger the place, the more the environment differs from the habitat in which we have evolved: dense and crowded,[5] airports, subway or rapid transit, tall buildings in downtown, etc. And while urbanness is a continuum, there is a threshold, likely around several hundred thousands of people, when the built environment changes significantly. There are at least several significantly different stages of urbanicity on the urbanness continuum: wilderness, open country, villages, small towns, large towns, cities, large cities, and very large cities. Surely, it is difficult to capture urbanness in its entirety—most datasets only allow us to analyze a few stages, including the data used here—but the point is that treating urbanness as an urban-rural dichotomy (Glaeser 2011b, Burger et al. 2020) is an oversimplification without much theory to support it.

The biological/evolutionary perspective can be complemented by recent neurological evidence. Urban living is unhealthy to the human brain (Lederbogen et al. 2011) and urban living contributes to the development of psychosis (Abrahamyan Empson et al. 2020).

Economics and Happiness

Economists try to argue that cities are happier than smaller places, yet, the overwhelming evidence points to the contrary (Gurin et al. 1960, Campbell et al. 1976, Berry and Okulicz-Kozaryn 2011, Okulicz-Kozaryn and Mazelis 2016, Senior 2006, Office for National

[2]The classics argued that poor social ties existed in cities, but refer to later arguments by Fischer and his subcultural theory (Fischer 1995, 1975, 1972).

[3]For example, suppose there's a city with a population of 1 million and a murder rate of 10 per 100k; for a city twice as big, with a population of 2 million, the murder rate would be 11.5 per 100k, and so on.

[4]Per human species evolutionary history, for instance, see the Encyclopedia Britannica, `http://www.britannica.com/EBchecked/topic/277071/hunting-and-gathering-culture`. For post-medieval history see White and White (1977).

[5]There are striking examples of crowding in the largest cities. To be sure, the majority of the urban population does not live in such extreme crowding, the trend however is in that direction as cities are becoming larger and less affordable. Furthermore, even without extreme crowding, the usual population density is related to crime (Bettencourt and West 2010). There is also evidence that density relates to negative consequences: interestingly, there is evidence that density impacts pathology more than crowding (Levy and Herzog 1974). Yet, it is not only density and crowding, other factors such as social support matter as well (Cassel 2017). Some studies didn't find a negative effect of density or crowding and the results were mixed (Collette and Webb 1976). While it seems to be reasonable to assume that density and crowding are positively related, some studies do not find that to be the case (Webb 1975, Rodgers 1982). Crowding probably has become more common in recent years as cities are becoming less affordable (Misra 2015, Florida and Schneider 2018, Weinberg 2011, Solari 2019, Schuetz 2019, Kotkin 2013). For an usefuk discussion and overview of density, crowding and human behavior see Boots (1979), Choldin (1978).

Statistics 2011, Chatterji 2013, Morrison 2015, Lenzi and Perucca 2016, Morrison 2011, Okulicz-Kozaryn and Valente 2020).

The discipline of economics is largely driven by "axioms" (the self-evident truths) or "laws."[6] One axiom is that the more money (income or consumption), the greater the utility (e.g., Autor 2010). Utility, however, cannot be measured, thus, it is often operationalized as or proxied by "happiness" in the discipline:[7]:

$$money = utility \approx happiness \tag{1}$$

Easterlin (2015, 2010b) and many others have found that income is unrelated to happiness in the long run at the country level (the so called Easterlin Paradox). But the finding directly contradicts the economics axiom, and accordingly economists try to find evidence to the contrary. Stevenson and Wolfers (2013), for example, challenged the Easterlin Paradox by claiming to have conflicting "evidence." Except, that they studied something different—they examined a different unit of analysis (data at the household level, or across countries at one point in time) and log transformed the data.

The effort to contravene the finding that cities tend to be less happy than smaller areas is also arguably due to the economics axiom: money is centered in cities,[8] and therefore, cities have greater utility, and by extension, they must be happier. Glaeser (2011b) analyzes only poor countries for his urbanicity–happiness analysis, but argues that the relationship holds in general. He contends that the positive relationship is "driven primarily by poorer countries"—and leaves the impression that the overall relationship is positive for all countries and simply stronger for poorer countries. Empirical evidence, however, is incongruent: for most countries the relationship is negative and it is only positive in a few cases, typically in the very poorest countries. Concurrently, Burger et al. (2020) states "in line with earlier research, we found that urban populations are, on average, happier than rural populations in that they return higher levels of happiness" and also builds his case by focusing on exceptional outliers, mostly poor African countries. Glaeser et al. (2016) studies US counties, but retains only cities and drops from his study all other areas. In contrast, Okulicz-Kozaryn and Mazelis (2016) using the very same data finds a negative relationship by examining all areas.

What We Know So Far, The Literature

Most research on the urbanicity–happiness relationship points to an urban-rural happiness gradient, where happiness raises from its lowest level in largest cities, to the highest level in smallest rural areas (e.g., Campbell et al. 1976, Berry and Okulicz-Kozaryn 2011, Okulicz-Kozaryn and Mazelis 2016, Okulicz-Kozaryn and Valente 2020). Yet, most research has been conducted in the US or Western Europe, and there are only three cross-country investigations using a common dataset: Berry and Okulicz-Kozaryn (2009), Easterlin et al. (2010a) and Burger et al. (2020).

Easterlin et al. (2010a) focuses on the effect of economic growth by urban–rural areas and only a small part of the study is about urban–rural differences in SWB, and their results are similar to Berry and Okulicz-Kozaryn (2009), who found that in developed countries people are less happy in cities. All three studies, however, are limited. First, there is no urban–rural gradient in these studies—they all use binary operationalizations, urban v rural. Urbanness or urbanicity is a degree, not a dichotomy.[9] Also, the three studies mostly present simple mean differences for each country and aggregate results to groups of countries in regressions and fail to control for necessary predictors of SWB.

Most critically, there are multiple problems with the Gallup data used by Easterlin et al. (2010a) and Burger et al. (2020).[10] First, it is not meant for research but for commerce—Gallup charges $30,000 (per year) for data access.[11] Second, the urbanicity classification is twice less precise than in the World Values Survey (WVS) used in the present study: 4 v 8 categories. Third, while the WVS uses precise population size with numeric cutoffs, Gallup uses fuzzy concepts such as "rural area," "small town or village," "large city." Fourth, Gallup uses self-reports of urbanicity, which is highly subjective and problematic in this case—many, if not most people, would likely classify themselves completely arbitrarily into "rural area" v "village" and so forth. The WVS uses interviewer's information about the place. Fifth, apparently much of the data are missing—Easterlin et al. (2010a) notes that in 14 countries "rural area" responses were exceptionally low. About half of the world population is rural, but Burger et al. (2020) reports that in their dataset only about a quarter of respondents report rural residence. This study is the first to analyze the urban–rural happiness gradient across countries using a more suitable and accurate dataset.

[6] No other social science discipline has axioms, and for a good reason—they do not exist in the social world, and so they should not appear in social science. See Feynman (1981) and Davies (2018) for elaboration.

[7] Curiously, some economists who do happiness research are skeptical about it at the same time, and do not consider happiness worthy investigation (e.g., Deaton 2013, Glaeser et al. 2014, 2016).

[8] Production, productivity, income, and consumption increase with population size (Glaeser 2011a, 2007, Glaeser et al. 2001, Rosenthal and Strange 2002, 2003, 2008).

[9] Strikingly, Burger et al. (2020) argues that there is a uniform way to measure urbanicity, which is a mere 3 categories: 1) Cities, 2) Towns and semi-dense areas and 3) Rural areas; yet, uses a dichotomy in their study.

[10] Easterlin et al. (2010a) acknowledge Gallup's limitations and attempts to address them. Burger et al. (2020), on the other hand, does not.

[11] Gallup charges $30,000 per year for the use of their happiness data (authors' email inquiry)—private corporations are making a fortune from tax dollars and students tuition—scholars should resist the corporatization of academia (Mills 2012a, Cox 2013, Mills 2012b, Catropa and Andrews 2020, Schmidlin 2015), and the corporatization of happiness research (Davies 2015).

Data And Model

We use the World Values Survey comulative file 1981-2020 from www.worldvaluessurvey.org, which is representative of about 90% of the world population,[12] and as elaborated in the previous section, is much better suited for the study than an inadequate and poorly designed Gallup survey. The variables are listed in table 1. Country codes and descriptive statistics are in the Supplementary Online Material (SOM).

The SWB question reads, "All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are 'completely dissatisfied' and 10 means you are 'completely satisfied' where would you put your satisfaction with your life as a whole?"

Urbanicity is operationalized with the WVS variable "X049," objective and recorded by the interviewer, not the respondent. There are eight categories ranging from '<2k' to '>500k.' This is an important advantage, because as elaborated earlier, urbanicity or urbanness is a continuum, not a binary urban v rural dichotomy. We conduct the analysis using a set of dummy variables for all eight categories (leaving out the base case) in the SOM. For simplicity and ease of exposition, however, we present simplified results in the body of the paper using three categories only. In other words, this study uses 8 categories of urbanicity, and summarizes the results for ease of presentation with 3 categories. Thus, please refer to the SOM for the results of all categories.

Because in many countries, there are either no observations or few observations in the first two bottom categories −2k and 2−5k, we combined them together for the analyses in the main body of the paper. These two categories together proxy a city-free natural environment most closely resembling the natural human habitat where we have evolved, and it includes: wilderness, open country, and small villages. The other critical category that must be measured based on the earlier review of theory is large cities. There is likely to be a threshold at several hundred thousand, hence we use the top category on the WVS variable "X049" which is '>500k' as a proxy of large cities. Such places, are the least resembling of the natural human habitat and are mostly consisting of man–made objects such as asphalt, concrete, glass, etc., and accordingly are likely to be the least happy. Such classification into large cities v natural areas produces third category in between, 5−500k. The two cutoffs are driven by theory. It would be a gross oversimplification to use an ubran-rural dichotomy with one cutoff, for example, '<100k' v '>100k' (or any other value). A place never changes abruptly from rural to urban at some cutoff, it is a continuum, it can be simplified to carefully chosen extreme categories, but one must always start with the continuum. Since this aggregation or simplification into 3 categories is still somewhat arbitrary, we present our alternative aggregations in the supplementary online material in addition to the full 8-step urbanness gradient.

Table 1: Variable definitions.

name	description
happiness	"All things considered, how satisfied are you with your life as a whole these days?" 1="dissatisfied" to 10="satisfied"
place size	"OBSERVATIONS BY THE INTERVIEWER; Code size of town where interview was conducted"
year survey	year of survey
age	age
age2	age squared
male	male
married or living together as married	married or living together as married
divorced/separated/widowed	divorced/separated/widowed
education	"Highest educational level attained"
income	"Scale of incomes"
class	"Social class (subjective)"
health	"State of health (subjective)"
postmaterialist	"Post materialist index "
god important	"How important is God in your life? Please use this scale to indicate- 10 means very important and 1 means not at all important."
religion important	"For each of the following aspects, indicate how important it is in your life. Would you say it is: Religion"
autonomy	"Autonomy index"
freedom	"Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means 'none at all' and 10 means 'a great deal' to indicate how much freedom of choice and control you feel you have over the way your life turns out."
trust	"Most people can be trusted"

In the choice of controls we generally follow Okulicz-Kozaryn and Valente (2020). Table 1 lists the control variables used in the body of the paper and there are specific controls worth discussing. Young, single and childless persons and young men with tertiary education are relatively more satisfied with urban areas as a place of residence (Carlsen and Leknes 2019). Income, class, and education not only predict greater SWB, but are also confounded and higher in cities.[13]

[12]While the WVS is conducted in about 100 countries that represent about 90% of the world population, due to missing data for the particular variables of interest, the present's study coverage is slightly smaller, covering about 70 countries (depending on the model and specification).

[13]Simply comparing unadjusted means may result in oversimplified or biased research claiming that people are happier in cities (e.g. (Burger et al. 2020))—e.g., there is confounding of urbanicity with higher income, education and class—see SOM for tables with and without controls.

One great advantage of city life that is often forgotten is freedom, "City air makes men free (Stadt Luft macht frei)," (Park et al. [1925] 1984, p. 12)[14] hence we control for freedom. Likewise, trust is important, as it predicts SWB, and it is lower in cities (Milgram 1970). Health is a key predictor of SWB, and the subjective health measure used here is a reasonable measure of actual health (Subramanian et al. 2009).

We use a standard OLS regression with robust standard errors. We treat the 10-step happiness variable as continuous. An ordinal happiness variable can be treated as a continuous variable (Ferrer-i-Carbonell and Frijters 2004). OLS has become the default method in happiness research (Blanchflower and Oswald 2011). Theoretically, while there is still debate about the cardinality of SWB, there are strong arguments to treat it as a cardinal variable (Ng 1996, 1997).

Results

There is a tradeoff in this study between ease of presentation and elaboration as there are dozens of countries and presenting elaborated specifications would result in unwieldy presentation—additional specifications are in the SOM. Here we just present one model that is our full model. It includes all necessary and some additional controls (yet, not over-saturated where too many controls would result in collinearity and many missing observations)—we use here models with controls listed in table 1. The model presented here uses 3 urbanicity categories, <5k (base), 5k–500k, and >500k. Results are set in Table 2. We are interested in the comparison between <5k v >500k because places larger than several hundred thousand according to the theory are the most unnatural environment for humans .

[14] It originated in the Middle Ages, and it meant freedom from feudalism: non-feudal islands in a sea of feudalism (Harvey 2012).

	5-500k	500k-	N
ALB	-0.4*	0.4+	1,582
ARG	-0.2	-0.0	855
AUS	-0.0	-0.1	3,728
AZE	-0.1	0.3	964
BFA	0.3	0.0	567
BGD	0.0	0.7*	2,104
BGR	-0.0	-0.5*	1,229
BLR	-0.1	-0.1	2,815
BRA	-0.2	-0.4*	3,576
CAN	-0.1+	-0.3*	3,177
CHL	-0.7*	-0.7*	3,527
CHN	0.0	-0.4*	2,005
COL	0.0	-0.1	1,376
DEU	-0.1	0.0	4,795
DZA	-0.4*	-0.6	1,596
ECU	-0.9*	-0.7*	1,182
EGY	-0.4*	-1.1*	3,428
ESP	-0.1	-0.1	1,487
ETH	0.3	0.4	1,017
GEO	0.1	0.1	2,401
GHA	0.3*	-0.0	2,572
HUN	0.0	-0.4*	887
IDN	0.1	-0.0	2,056
IND	-0.0	0.3*	5,857
IRN	-0.3*	-0.0	2,119
IRQ	-0.1	-0.0	1,123
ITA	-0.1	0.2	585
JOR	0.1	-0.2	2,089
KAZ	-0.0	-0.3*	1,497
KGZ	-0.1	-0.3*	2,293
LBN	0.1	0.2	731
LTU	0.3	0.3	750
LVA	-0.1	-0.6*	963
MAR	0.0	-0.2	845
MDA	0.2*	0.2	2,478
MEX	-0.1	-0.2+	3,544
MKD	-0.2	-0.1	1,385
MYS	0.1	-0.4*	1,541
NGA	-0.1	-0.1	4,488
NZL	-0.1		417
PAK	0.4+	0.3	900
PER	0.3*	-0.5	1,026
PHL	0.4	0.5	2,294
POL	-0.1	-0.1	1,533
ROU	-0.2*	0.3*	3,568
RUS	0.2*	0.2*	3,253
RWA	-0.7*	-0.4+	2,398
SRB	0.1	-0.4*	2,539
SVN	0.2+	-0.2	1,620
SWE	0.2	0.2	1,769
THA	0.1	0.1	2,178
TUN	0.1		826
UKR	0.0	-0.1	2,985
URY	0.2	0.1	2,017
USA	-0.1	-0.2*	3,372
UZB	0.0	-0.3*	1,247
VEN	-1.7*	-1.2*	1,034
VNM	0.1	-1.5*	2,039
ZAF	0.2*	0.0	5,330
ZWE	0.1	0.2	1,487

* p<0.05, + p<0.1; robust std err

Table 2: OLS regressions of SWB on place size for each country separately controling for predcictors of SWB listed in table 1.

The results in table 2 show that in 80% of countries with significant happiness differences across urbanicity, people are less happy in cities than in smaller areas. The only exceptions are in the East European Post Soviet countries (ALB, ROU, RUS), and in South-Asian countries (BGD and IND). Notably, these are all poor or developing countries. In all developed countries, people are happier in smaller places than in large places—without exception, we find that city dwellers are not happier than rural residents.

The conclusion is that in all developed countries studied here, AUS, CAN, DEU, ESP, ITA, NLD,[15] NZL, SWE, USA, the largest areas are less happy than smaller areas.[16]

The urban-rural gradient is greatest in EGY, VEN,[17] and VNM where the effect sizes are larger than one, while the effect sizes for most other places are small to moderate, around .3 to .5 (on the 1–10 SWB scale). Yet, as indicated earlier, because of the limited cross-cultural comparability of the SWB measure, when interpreting our results, the focus should be on within–country SWB differences across urbanicity, and not on comparing cross–country effect sizes.

It is worth noting that in the first column (5-500k), the majority of the results are negative with only 5 countries yielding a positive result: GHA, MDA, PER, RUS, and ZAF—again, what is remarkable is that none of these countries is a developed country.

[15] Results for NLD are only in SOM.

[16] At least in less elaborate specifications shown in the SOM, but even in the most elaborate specifications, even when the coefficient on larger places is insignificant, it is still negative.

[17] Note: result for VEN should be interpreted with caution—this is the main difference with table exT4-3 in SOM and probably has to do with the fact that there are only 60 obs on the base case category. Other results are similar between the two tables.

Conclusion And Discussion

Classic urban sociological theory, biological/evolutionary mechanism, and neurological evidence point to lower levels of human wellbeing in cities. Throughout most of our evolutionary history, humans have lived in small homogeneous groups with low density. As hunters gatherers, humans lived in small bands of 50 to 80 people, later on in simple horticultural society in groups of 100 to 150 people, and in more advanced society these groups reached five to six thousand people (Maryanski and Turner 1992). Hence, unlike other species living in heterogeneous, dense, and large settlements, human have not evolved to live there. Simply put, city living is unnatural to human species. It is not city problems, such as crime and poverty, but the city itself and its core characteristics that result in lower wellbeing (Okulicz-Kozaryn and Mazelis 2016).

In the vast majority of countries, the results show a negative effect, and only positive in East European Post Soviet ALB, ROU, and RUS, and South-Asian BGD and IND. East European Post Soviet countries are still quite centralized where power, opportunity, and resources are located in the large cities. India and Bangladesh are curious outliers (for some discussion see Deb 2020). Also note that in about a third or even half of the countries (depending on the model), there is no SWB difference across urbanicity. This is also a finding worth reporting as it runs counter to common pro-urbanism and city triumphalism (e.g., Glaeser 2011b). One would think that cities are the best places to live as people flock there in doves. Thus, a finding showing no difference for many cases is already surprising.

Even as coefficient estimates are small to moderate, the practical significance of the results is very strong because of the sheer size of urbanization. Even a minuscule negative effect of .1 (on a scale 1-10) on a large place v a smaller place for a small country of 10 million people translates into an effect equivalent to making 100 thousand people from the most miserable to the most happy on the SWB scale 1-10. Globally, for billions of people living in cities, there is a massive amount of human misery produced.

Why are people less happy in large cities in the developed world, yet happier in some developing countries? There is at least one reason. In many developing countries, life is simply unbearable outside of the city lacking necessities such as shelter, food, water, sanitation, and healthcare. In developed countries, even the smallest places have reasonable access to necessities, and they do not suffer from urban disamenities.

As per Maslow's pyramid of needs (Maslow [1954] 1987), survival and opportunity come first, and this arguably can explain much of the paradox found in this paper—despite the city being biologically, neurologically, and socially negative for humans, cities can be useful for human wellbeing at the early stage of a country's economic development.

Last but not least, it is important to underscore an alarming trend in higher education, which is the corporatization of higher education and research (Mills 2012a, Cox 2013, Mills 2012b, Catropa and Andrews 2020, Schmidlin 2015). This includes happiness research (Davies 2015). 'The 'World Happiness Report" (Helliwell et al. 2020) and its chapter about the urban–rural gap in happiness (Burger et al. 2020) uses data from a private corporation, Gallup, and the report is largely an advertisement for Gallup. Gallup then sells the happiness data for $30,000 per year per user [18]—arguably this is not meant for research (most researchers cannot afford it). This is incongruous with what research is meant to do, which is to produce unbiased knowledge for the sake of knowledge. Instead, the objective of this corporatization of research is to make money—after all, the sole responsibility of a business is to profit (Friedman 1970).

Takeaway for Practice

Humans are worse off in cities (in terms of happiness), but sometimes what makes us happy is not the right thing to do (Linden 2011, Haybron 2008, Nussbaum 2005). Notably, climate change is more important than human happiness, and cities are the most environmentally friendly type of settlement (Meyer 2013). Also, there are some things that can be done to make cities less miserable—we know what can make a city a relatively happy place of residence (see Ballas 2013).

Perhaps the clearest takeaway for practice is that we suffer from overpopulation and overconsumption. It could be argued that we only need cities because of overpopulation and climate change (Pachauri et al. 2014), and not because of production, productivity, or consumption premium, of cities. In fact, consumption is already much higher than needed in the developed world, and we need less consumption (Dittmar et al. 2014, Kasser 2003, Leonard 2010). We arguably also need less production and less economic growth (Kallis et al. 2012, Kallis 2011, Van den Bergh 2011). While cities are the most environmentally friendly way to squeeze human overpopulation to deal better with climate change, cities directly cause climate change by being centers of production and consumption that drives climate change—it's a vicious cycle.

Concurrently, we would need cities less if we had fewer people (e.g. contraception, family planning, and sterilization). It is only when there are fewer people that we can have a meaningful discussion about the right city size as we used to have a couple of decades ago.[19]

[18] Authors' inquiry to Gallup to use their data.

[19] It is astonishing that there is no discussion about this. How could we have gone so wrong to think that the bigger the better and that there is no limit—cities are ballooning—Tokyo has about 40 million people, and there are many cities with 20 million residents; In comparison, the greatest and largest cities of antiquity like Ancient Athens had 140 thousand people while Rome had a population of 450 thousand.

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SOM: ONLINE APPENDIX (THIS WILL NOT BE A PART OF THE PAPER

Descriptive Statistics

code	name
ALB	Albania
ARG	Argentina
AUS	Australia
AZE	Azerbaijan
BFA	BurkinaFaso
BGD	Bangladesh
BGR	Bulgaria
BLR	Belarus
BOL	Bolivia
BRA	Brazil
CAN	Canada
CHL	Chile
CHN	China
COL	Colombia
DEU	Germany
DZA	Algeria
ECU	Ecuador
EGY	Egypt
ESP	Spain
ETH	Ethiopia
FRA	France
GEO	Georgia
GHA	Ghana
GRC	Greece
GTM	Guatemala
HRV	Croatia
HUN	Hungary
IDN	Indonesia
IND	India
IRN	Iran
IRQ	Iraq
ITA	Italy
JOR	Jordan
KAZ	Kazakhstan
KGZ	Kyrgyzstan
KWT	Kuwait
LBN	Lebanon
LTU	Lithuania
LVA	Latvia
MAR	Morocco
MDA	Moldova
MEX	Mexico
MKD	NorthMacedonia
MYS	Malaysia
NGA	Nigeria
NLD	Netherlands
NOR	Norway
NZL	NewZealand
PAK	Pakistan
PER	Peru
PHL	Philippines
POL	Poland
ROU	Romania
RUS	Russia
RWA	Rwanda
SRB	Serbia
SVN	Slovenia
SWE	Sweden
THA	Thailand
TJK	Tajikistan
TUN	Tunisia
TUR	Turkey
UKR	Ukraine
URY	Uruguay
USA	UnitedStates
UZB	Uzbekistan
VEN	Venezuela
VNM	Vietnam
ZAF	SouthAfrica
ZWE	Zimbabwe

Table 3: Country codes.

Some countries were dropped if data were missing on major categories. If there were less than 30 obs on both collectively 2 smallest categories or on top category a country was dropped.

code	T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8
ALB	743	235	198	74	187	195	201	134
ARG	261	120	80	140	142	160	254	2880
AUS	404	420	440	469	698	621	779	2681
AZE	164	232	65	46	61	82	80	272
BFA	60	124	271	331	342	128	30	169
BGD	437	1498	781	371	397	223	289	156
BGR	500	246	103	133	178	247	348	318
BLR	917	111	61	252	251	160	1063	812
BOL	423	30	101	71	254	109	378	701
BRA	72	301	340	539	835	852	1740	2814
CAN	1321	490	537	372	410	762	693	1145
CHL	141	43	9	23	110	702	3466	2206
CHN	237	274	126	373	1812	1999	2139	2568
COL	16	48	225	358	1053	910	1476	1940
DEU	784	825	645	1279	1373	601	1147	996
DZA	190	7	364	278	456	544	549	92
ECU	50	132	127	144	179	301	916	553
EGY	119	362	1464	1143	1149	504	313	1072
ESP	307	328	365	451	433	362	946	729
ETH	98	108	360	291	207	691	904	71
FRA	246	82	39	48	47	85	67	387
GEO	742	442	138	151	189	49	309	682
GHA	159	1541	238	242	374	139	156	237
GRC	290	30	50	50	150	140	50	440
GTM	263	121	92	77	321	151	201	977
HRV	375	181	4	141	8	104	127	215
HUN	153	320	73	189	216	171	223	312
IDN	801	1204	1270	796	426	211	304	1203
IND	2965	2368	1421	1234	987	834	1171	1238
IRN	439	384	295	140	261	176	542	1737
IRQ	84	467	73	182	184	85	449	1117
ITA	70	148	135	176	131	124	100	128
JOR	310	489	459	356	676	286	299	754
KAZ	293	449	173	225	193	95	702	646
KGZ	983	958	373	194	168	141	231	695
KWT	114	61	19	70	23	6	297	462
LBN	80	265	336	336	529	275	153	191
LTU	324	12	48	114	66	30	252	163
LVA	373	24	57	81	101	108	57	399
MAR	44	270	292	474	100	51	293	921
MDA	700	906	370	202	214	20	261	365
MEX	1196	1129	749	653	697	566	1686	2764
MKD	475	253	163	60	326	343	48	382
MYS	300	503	269	282	314	276	735	241
NGA	318	804	669	658	1044	1123	1774	1428
NZL	308	0	270	182	152	190	516	187
PAK	529	1124	566	251	62	10	251	1935
PER	590	137	60	108	175	339	1070	131
PHL	350	295	210	105	590	430	1000	620
POL	1097	173	111	168	318	277	629	343
ROU	819	1203	568	411	487	482	1326	468
RUS	1166	600	541	417	784	461	1810	2532
RWA	15	76	92	128	419	1620	634	50
SRB	691	508	580	316	606	758	544	732
SVN	1520	475	240	149	226	78	278	118
SWE	123	56	91	166	377	545	762	766
THA	2450	613	389	164	190	93	45	153
TJK	360	370	80	70	90	90	30	110
TUN	73	468	669	429	251	252	191	80
TUR	96	12	84	48	264	230	1273	408
UKR	962	527	178	327	294	305	806	912
URY	99	129	118	229	493	328	1	1336
USA	410	352	357	636	960	746	972	1168
UZB	500	440	40	40	60	20	260	140
VEN	20	40	172	192	242	242	484	1008
VNM	63	708	736	784	190	94	966	154
ZAF	3912	218	194	258	269	238	390	987
ZWE	470	687	317	86	183	422	323	227

* p<0.05, + p<0.1; robust std err

Table 4: Counts by 8 urbanicity categories on `X049`.

Limitations

We do not use the Gallup dataset. Some may argue that this is a limitation because Gallup covers more countries than the WVS. However, given that the Gallup data cost tens of thousands of dollars, we cannot afford it. In fact, we'd discourage scientists from paying from their tax money to private corporations to do research. Therefore, we actually consider it an advantage not to use the Gallup dataset.

Still, many world countries are missing, and using more waves of WVS data in the future as they become available would contribute significantly to the literature.

A limitation is that many countries were not included as a result of not having many people in the smallest or the largest areas. In

addition, cross cultural comparability is a caveat. Hence, we run separate analysis for each country and don't pool the data together, but still, it should be kept in mind that happiness can mean something different in different societies. Similarly, cities around the world are very different. The breadth of the study is accompanied by oversimplifcation. Some research in this area claims that urban-rural differentials might be country-specific and not be generalisable at all.

Again, we would like to have more gradation at the top of the distribution, but 500 thousand is a reasonable and adequate cutoff to distinguish a large city from other places. Unfortunately, there are no other data better suited for this purpose and we do best we can with what's available. The results are conservative—if we had a cutoff at 750 thousand or 1 million, they'd be stronger (Okulicz-Kozaryn 2015).

The limitation of X049 is not only a low top bin for largest cities (500k+), but also about a thrird of values missing. Future research can focus on specific countries using other data or WVS data using X049CS variable, which has country specific sizes of places, which however are not directly or easily comparable–bins differ across countries and in some cases place is names "major city", "Farm / Mountain / Fishing village," etc).

Cities in Developing Countries

Cities can be actually useful for human wellbeing at the early stage of a country's development. The graphs 1 and 2 elaborate the Maslow's pyramid mentioned in the body of the paper. At first, one needs to focus on necessities such as survival and cities do help, which could explain why people in developing countries are happier there; Yet, it is remarkable that in all developed countries studied here, people in cities are less happy.

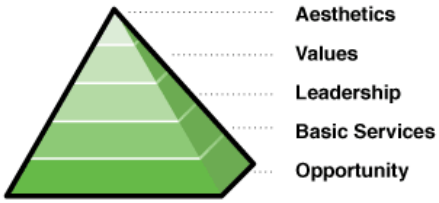

Figure 1: Place Pyramid, (Florida 2008, p 294).

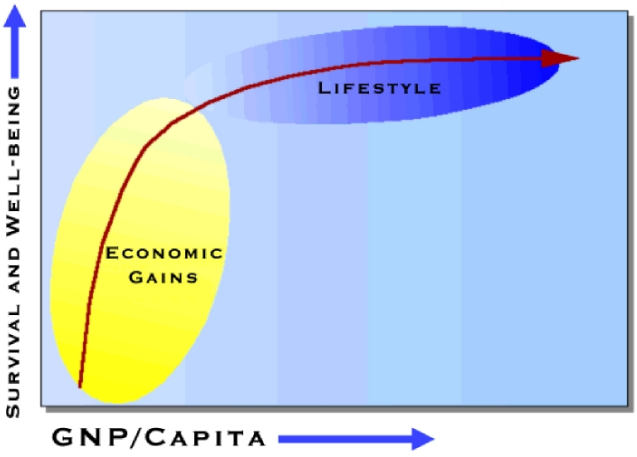

Figure 2: Well-being and income, (Inglehart 1997).

Urbanicity Definition and Operationalization: Alternative Models

We have three different operationalizations of urbanicity: the original 8 categories, and categories collapsed in 2 alternative ways. There are 4 sets of models: bivariate (with year dummies), essentially the mean difference between categories; 2) basic set of controls, necessary/important ones; 3) full/extended (the one reported in the body); and 4) over-saturated models, with many observations missing.

The models are presented in tables below, where the coding is as follows: T# is the type of setup: T is the original 8 categories on the urbanicity variable; T3 is three categories, and T4 is four categories. The number after the dash (-#) denotes the elaboration of the model: -1 only includes the urbanicity variable and year dummies

-2 adds age, gender, marital status, education, income, social class, and health

-3 adds materialism, religiosity, automomy, freedom and trust

-4 adds crime and financial satisfaction

	-10	10-50k	50-500k	500k-	N
ALB	0.0	0.1	0.2*	0.4*	1960
ARG	0.0	0.2+	-0.0	-0.1	4010
AUS	0.0	-0.0	-0.0	-0.0	6466
AZE	0.0	-0.2	-0.3	0.4*	1002
BFA	0.0	-0.3*	0.6*	-0.0	1421
BGD	0.0	-0.2*	0.4*	1.5*	4106
BGR	0.0	0.6*	0.7*	0.8*	2014
BLR	0.0	0.5*	0.4*	0.5*	3603
BOL	0.0	-0.1	-0.0	0.1	2058
BRA	0.0	-0.0	-0.3*	-0.3*	7462
CAN	0.0	-0.1	-0.1*	-0.5*	5720
CHL	0.0	0.3	-0.2	-0.2	6657
CHN	0.0	0.2	0.4*	0.2+	9407
COL	0.0	-0.0	-0.0	-0.1	6025
DEU	0.0	-0.1*	0.0	-0.0	7625
DZA	0.0	0.3+	0.1	0.4	2433
ECU	0.0	-0.2	-0.1	0.0	2400
EGY	0.0	-0.2+	-0.1	-0.5*	6120
ESP	0.0	-0.0	-0.1	-0.2+	3898
ETH	0.0	-0.5*	0.1	0.1	2719
FRA	0.0	0.0	0.3+	0.1	1000
GEO	0.0	0.0	0.5*	0.5*	2676
GHA	0.0	0.7*	0.7*	0.5*	3080
GRC	0.0	0.0	0.2	-0.4*	1200
GTM	0.0	0.6*	0.8*	0.3*	2202
HRV	0.0	0.1	-0.1	0.3	1152
HUN	0.0	0.0	0.1	0.1	1649
IDN	0.0	0.2*	0.4*	0.3*	6092
IND	0.0	0.6*	0.1+	0.5*	11971
IRN	0.0	0.2	-0.3*	0.0	3973
IRQ	0.0	0.1	-0.1	0.2+	2631
ITA	0.0	-0.0	-0.1	0.1	1006
JOR	0.0	0.2*	-0.0	0.1	3622
KAZ	0.0	0.1	0.1	-0.0	2761
KGZ	0.0	-0.2	0.2	-0.7*	3731
KWT	0.0	-0.6*	0.4+	0.1	1034
LBN	0.0	0.0	-0.1	-0.1	2159
LTU	0.0	0.5+	0.6*	0.6*	996
LVA	0.0	-0.0	-0.2	-0.4*	1190
MAR	0.0	0.2+	0.7*	0.2	2442
MDA	0.0	0.3*	0.9*	0.7*	3000
MEX	0.0	0.1	0.0	-0.0	9329
MKD	0.0	-0.1	0.2	0.4*	2031
MYS	0.0	0.1	0.0	-0.1	2919
NGA	0.0	-0.0	0.1	0.5*	7807
NZL	0.0	-0.1	-0.2+	0.1	1770
PAK	0.0	0.6*	0.1	0.4*	3677
PER	0.0	0.3+	0.6*	0.5*	2602
PHL	0.0	0.6*	0.4+	0.7*	3600
POL	0.0	0.1	0.2*	0.0	3093
ROU	0.0	0.1	0.4*	0.4*	5618
RUS	0.0	0.2*	0.1	0.4*	8187
RWA	0.0	-0.0	-0.2	-0.3	3030
SRB	0.0	0.2*	0.4*	0.2+	4654
SVN	0.0	0.3*	0.4*	0.1	3065
SWE	0.0	0.2	0.3*	0.2	2882
THA	0.0	0.2	-0.1	-0.7*	4086
TJK	0.0	-0.1	-0.2	-0.1	1200
TUN	0.0	0.1	0.0	-0.8*	2405
TUR	0.0	0.7*	0.9*	1.0*	2405
UKR	0.0	0.2+	0.0	0.0	4169
URY	0.0	0.1	-0.0	0.1	2717
USA	0.0	-0.0	-0.2*	-0.3*	5586
UZB	0.0	-0.2	-0.2+	-0.4*	1493
VEN	0.0	-0.2	-0.2	0.1	2385
VNM	0.0	0.4*	0.5	0.0	3674
ZAF	0.0	0.9*	1.2*	1.1*	6448
ZWE	0.0	0.2	0.2	0.2	2714

* p<0.05, + p<0.1; robust std err

Table 5: exT4-1

	-5	5-500k	500k-	N
ALB	0.0	0.1	0.4*	1960
ARG	0.0	0.1	-0.1	4010
AUS	0.0	-0.1	-0.1	6466
AZE	0.0	-0.4*	0.3	1002
BFA	0.0	-0.1	-0.0	1421
BGD	0.0	0.1+	1.5*	4106
BGR	0.0	0.7*	0.9*	2014
BLR	0.0	0.4*	0.5*	3603
BOL	0.0	-0.1	0.1	2058
BRA	0.0	0.1	-0.0	7462
CAN	0.0	-0.1*	-0.5*	5720
CHL	0.0	-0.1	-0.1	6657
CHN	0.0	0.5*	0.3*	9407
COL	0.0	0.1	0.1	6025
DEU	0.0	-0.0	-0.0	7625
DZA	0.0	0.2	0.4	2433
ECU	0.0	-0.1	0.0	2400
EGY	0.0	-0.6*	-1.0*	6120
ESP	0.0	-0.1	-0.2*	3898
ETH	0.0	0.2	0.3	2719
FRA	0.0	0.0	0.0	1000
GEO	0.0	0.3*	0.5*	2676
GHA	0.0	0.7*	0.5*	3080
GRC	0.0	0.2	-0.4*	1200
GTM	0.0	0.6*	0.3*	2202
HRV	0.0	0.0	0.3+	1152
HUN	0.0	-0.0	-0.0	1649
IDN	0.0	0.2*	0.3*	6092
IND	0.0	0.2*	0.4*	11971
IRN	0.0	-0.1	-0.0	3973
IRQ	0.0	0.0	0.2+	2631
ITA	0.0	-0.0	0.1	1006
JOR	0.0	0.1	0.1	3622
KAZ	0.0	0.1	-0.0	2761
KGZ	0.0	-0.1	-0.7*	3731
KWT	0.0	0.1	0.1	1034
LBN	0.0	-0.1	-0.2	2159
LTU	0.0	0.6*	0.7*	996
LVA	0.0	-0.0	-0.4*	1190
MAR	0.0	0.4*	0.3	2442
MDA	0.0	0.5*	0.8*	3000
MEX	0.0	0.0	-0.0	9329
MKD	0.0	0.0	0.3*	2031
MYS	0.0	0.1	-0.1	2919
NGA	0.0	-0.2*	0.2*	7807
NZL	0.0	-0.3*	0.0	1770
PAK	0.0	0.2*	0.4*	3677
PER	0.0	0.5*	0.5*	2602
PHL	0.0	0.3*	0.6*	3600
POL	0.0	0.2*	0.1	3093
ROU	0.0	0.3*	0.4*	5618
RUS	0.0	0.3*	0.5*	8187
RWA	0.0	-0.6*	-0.7*	3030
SRB	0.0	0.3*	0.2*	4654
SVN	0.0	0.4*	0.1	3065
SWE	0.0	0.4*	0.3*	2882
THA	0.0	0.1	-0.7*	4086
TJK	0.0	-0.2	-0.1	1200
TUN	0.0	0.1	-0.7*	2405
TUR	0.0	1.2*	1.4*	2405
UKR	0.0	0.1	0.0	4169
URY	0.0	0.1	0.1	2717
USA	0.0	-0.1	-0.3*	5586
UZB	0.0	-0.1	-0.4*	1493
VEN	0.0	-1.8*	-1.5*	2385
VNM	0.0	0.2*	-0.3+	3674
ZAF	0.0	1.0*	1.1*	6448
ZWE	0.0	0.3*	0.3+	2714

* p<0.05, + p<0.1; robust std err

Table 6: exT3-1

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ALB	0.0	0.3+	-0.0	0.0	0.2	0.1	0.5*	0.5*	1960
ARG	0.0	0.5*	0.2	0.4*	0.4*	0.6*	-0.2	0.0	4010
AUS	0.0	0.1	-0.1	0.1	-0.1	0.0	-0.1	-0.0	6466
AZE	0.0	-0.1	-0.8*	-0.5	-0.2	-0.3	-0.6*	0.2	1002
BFA	0.0	-0.8*	-0.4+	-1.0*	-0.6*	0.2	-0.1	-0.5*	1421
BGD	0.0	-0.4*	-0.1	-0.6*	-0.3*	0.1	0.1	1.2*	4106
BGR	0.0	0.5*	0.6*	0.7*	0.8*	0.9*	1.0*	1.0*	2014
BLR	0.0	0.7*	0.1	0.8*	0.3+	0.7*	0.5*	0.6*	3603
BOL	0.0	-0.0	-0.1	-0.1	-0.1	0.2	-0.1	0.1	2058
BRA	0.0	0.1	0.7*	0.3	0.4	0.3	0.0	0.1	7462
CAN	0.0	0.1	-0.1	-0.1	-0.0	-0.1	-0.2+	-0.5*	5720
CHL	0.0	0.6+	0.8	0.4	0.5+	0.1	-0.1	0.0	6657
CHN	0.0	-0.1	0.6*	0.7*	0.2	0.5*	0.6*	0.3+	9407
COL	0.0	-0.9+	-0.5	-0.7+	-0.5	-0.5	-0.6	-0.6+	6025
DEU	0.0	0.1	0.1	-0.0	-0.1	0.1	0.0	0.0	7625
DZA	0.0	1.9*	0.1	0.2	0.5*	0.2	0.3	0.5	2433
ECU	0.0	-0.2	-0.2	-0.1	-0.6+	-0.3	-0.2	-0.1	2400
EGY	0.0	0.6*	-0.2	-0.1	-0.2	0.0	-0.4	-0.5+	6120
ESP	0.0	-0.2	-0.2	-0.3+	-0.1	-0.1	-0.3*	-0.3*	3898
ETH	0.0	0.8+	0.9*	0.2	0.3	0.8*	1.1*	1.0*	2719
FRA	0.0	-0.3	-0.8*	-0.3	0.1	0.3	0.0	-0.1	1000
GEO	0.0	0.1	0.4*	0.1	0.1	1.0*	0.5*	0.6*	2676
GHA	0.0	0.3	0.9*	1.0*	1.0*	1.1*	0.8*	0.7*	3080
GRC	0.0	0.2	0.4	-0.1	0.2	0.5*	-0.3	-0.3*	1200
GTM	0.0	-0.2	0.1	0.9*	0.5*	1.0*	0.7*	0.3+	2202
HRV	0.0	-0.3	2.0*	0.1	0.4	-0.7*	0.3	0.2	1152
HUN	0.0	0.3	-0.2	-0.1	0.4+	-0.2	0.7*	0.2	1649
IDN	0.0	0.1	0.2+	0.1	0.8*	0.6*	0.4*	0.4*	6092
IND	0.0	0.4*	0.0	0.7*	0.8*	0.1	0.4*	0.6*	11971
IRN	0.0	-0.2	-0.2	0.3	-0.0	-0.6*	-0.3+	-0.1	3973
IRQ	0.0	-0.5+	-0.4	-0.5	-0.1	-0.3	-0.6+	-0.3	2631
ITA	0.0	-0.4	-0.2	-0.2	-0.3	-0.4	-0.3	-0.1	1006
JOR	0.0	0.0	-0.0	0.3	0.2	-0.1	0.1	0.1	3622
KAZ	0.0	-0.1	-0.1	-0.3+	0.4*	0.4	-0.0	-0.1	2761
KGZ	0.0	-0.1	-0.2	-0.4*	-0.2	-0.5*	0.4*	-0.8*	3731
KWT	0.0	1.5*	0.4	-0.0	-0.2	0.4	0.9*	0.6*	1034
LBN	0.0	-0.0	-0.2	-0.1	-0.0	-0.2	-0.2	-0.2	2159
LTU	0.0	0.4	0.2	0.5	0.6+	-0.0	0.8*	0.7*	996
LVA	0.0	-0.0	0.4	0.1	-0.0	-0.0	-0.5	-0.4*	1190
MAR	0.0	-0.2	-0.0	0.1	-0.0	0.5	0.6*	0.1	2442
MDA	0.0	0.2*	0.4*	0.3+	0.7*	-2.0*	1.3*	0.9*	3000
MEX	0.0	0.1	0.1	-0.0	0.2*	0.1	0.1	0.0	9329
MKD	0.0	0.8*	0.0	0.3	0.1	0.3+	1.4*	0.6*	2031
MYS	0.0	0.4*	0.4*	0.4*	0.4*	0.2	0.3*	0.2	2919
NGA	0.0	-0.3+	-0.8*	-0.7*	-0.4*	-0.4*	-0.3+	0.0	7807
NZL	0.0		-0.3	-0.2	-0.3	-0.2	-0.4*	0.0	1770
PAK	0.0	0.1	0.2+	1.9*	0.4	2.3*	0.2	0.5*	3677
PER	0.0	0.1	-0.1	0.3	0.3	0.4*	0.7*	0.5*	2602
PHL	0.0	0.3	0.1	0.5+	0.8*	0.4+	0.7*	1.0*	3600
POL	0.0	0.2	0.3	0.4*	0.0	0.2	0.3*	0.1	3093
ROU	0.0	0.3*	0.2+	0.1	0.5*	0.2	0.8*	0.6*	5618
RUS	0.0	0.6*	0.6*	0.4*	0.6*	0.4*	0.4*	0.7*	8187
RWA	0.0	-0.7+	-1.5*	-1.3*	-1.0*	-1.3*	-1.0*	-1.3*	3030
SRB	0.0	0.3*	0.2	0.2	0.4*	0.7*	0.3*	0.3*	4654
SVN	0.0	0.3*	0.3*	0.7*	0.2+	0.4+	0.5*	0.2	3065
SWE	0.0	0.2	0.4	0.3	0.4*	0.4*	0.5*	0.4*	2882
THA	0.0	0.2+	0.2+	0.3+	0.1	-0.1	-0.0	-0.7*	4086
TJK	0.0	-0.1	-0.2	-0.7*	0.2	-0.2	-0.5*	-0.2	1200
TUN	0.0	-0.6	-0.4	-0.6+	0.2	-0.4	-0.2	-1.1*	2405
TUR	0.0	-3.2*	0.6*	0.2	0.9*	0.8*	0.9*	1.0*	2405
UKR	0.0	0.4*	0.1	0.5*	0.1	0.1	0.1	0.2	4169
URY	0.0	0.1	0.2	0.2	0.3	0.1	1.6*	0.2	2717
USA	0.0	-0.3*	-0.2	-0.1	-0.2*	-0.4*	-0.3*	-0.5*	5586
UZB	0.0	0.3*	0.5+	0.1	-0.2	-1.0*	-0.0	-0.3+	1493
VEN	0.0	1.5	-1.1	-0.9	-0.6	-0.8	-0.8	-0.5	2385
VNM	0.0	0.5*	0.4+	1.0*	0.3	1.2*	1.0*	0.5	3674
ZAF	0.0	-0.1	0.4*	0.9*	1.1*	1.2*	1.2*	1.2*	6448
ZWE	0.0	0.1	0.4+	0.1	0.5*	0.1	0.6*	0.4+	2714

* p<0.05, + p<0.1; robust std err

Table 7: exT-1

	-10	10-50k	50-500k	500k-	N
ALB	0.0	-0.3*	-0.1	-0.0	1864
ARG	0.0	0.2	-0.2	0.1	955
AUS	0.0	0.1	-0.1	-0.1	3895
AZE	0.0	0.1	-0.2	0.2	995
BFA	0.0	-0.2	0.3	-0.4	636
BGD	0.0	-0.2	0.1	0.9*	2562
BGR	0.0	0.0	0.1	-0.1	1637
BLR	0.0	0.0	-0.0	0.0	3394
BRA	0.0	-0.2	-0.5*	-0.5*	3780
CAN	0.0	-0.1	-0.2*	-0.5*	3320
CHL	0.0	0.5	-0.7*	-0.6*	3823
CHN	0.0	0.2	0.3*	0.1	4371
COL	0.0	0.2	0.1	-0.0	4376
DEU	0.0	-0.2*	-0.0	0.0	5137
DZA	0.0	0.3+	0.0	-0.1	1806
ECU	0.0	-0.5	-0.6*	-0.5+	1187
EGY	0.0	-0.2	-0.0	-0.8*	3466
ESP	0.0	0.1	-0.0	-0.2+	1652
ETH	0.0	-1.8*	-0.2	-0.4	1246
GEO	0.0	-0.0	0.0	0.1	2602
GHA	0.0	0.3*	0.1	-0.2	2602
HUN	0.0	-0.1	-0.0	-0.6*	952
IDN	0.0	0.2+	0.1	0.1	2459
IND	0.0	0.5*	-0.4*	0.5*	6931
IRN	0.0	0.3	-0.5*	0.1	2208
IRQ	0.0	0.2	-0.4*	-0.2	1233
ITA	0.0	-0.3*	-0.5*	0.0	639
JOR	0.0	0.2*	0.1	-0.1	2137
KAZ	0.0	0.4*	-0.0	-0.3*	1497
KGZ	0.0	-0.3	0.3*	-0.5*	2427
KWT	0.0	-0.4	0.5*	0.1	953
LBN	0.0	0.1	0.1	-0.2	898
LTU	0.0	0.2	0.3	0.5+	889
LVA	0.0	-0.2	-0.5*	-0.7*	1119
MAR	0.0	0.2	0.2	-0.2	888
MDA	0.0	0.1	0.1	0.2	2740
MEX	0.0	0.0	-0.1	-0.3*	3782
MKD	0.0	-0.3+	0.1	-0.2	1600
MYS	0.0	0.3+	0.1	-0.2	1559
NGA	0.0	0.1	0.1	0.1	4628
NZL	0.0	0.2	-0.2		625
PAK	0.0		0.3	0.4*	1131
PER	0.0	0.2	0.7*	-0.3	1122
PHL	0.0	0.2	-0.1	0.1	2343
POL	0.0	-0.2	-0.0	-0.3+	2683
ROU	0.0	-0.3*	-0.1	0.3*	3966
RUS	0.0	0.2+	0.1	0.2*	3999
RWA	0.0	-0.1	-0.3*	0.3	2432
SRB	0.0	-0.1	0.3*	-0.5*	3128
SVN	0.0	0.2+	0.1	-0.3	1896
SWE	0.0	0.2	0.1	0.1	1888
THA	0.0	-0.2	0.1	0.0	2387
TUN	0.0	-0.1			901
UKR	0.0	0.0	-0.2*	-0.2*	3593
URY	0.0	0.3*	0.2	0.1	2511
USA	0.0	0.0	-0.2*	-0.2*	3493
UZB	0.0	-0.0	0.0	-0.3*	1407
VEN	0.0	-0.5	-0.8*	-0.1	1111
VNM	0.0	0.3*	-0.0	-0.5	2330
ZAF	0.0	0.3*	0.3*	0.1	5575
ZWE	0.0	-0.1	0.1	-0.0	1492

* p<0.05, + p<0.1; robust std err

Table 8: exT4-2

	-5	5-500k	500k-	N
ALB	0.0	-0.2*	-0.1	1864
ARG	0.0	-0.2	-0.0	955
AUS	0.0	-0.1	-0.2*	3895
AZE	0.0	-0.2	0.1	995
BFA	0.0	0.3	-0.0	636
BGD	0.0	0.1	0.9*	2562
BGR	0.0	0.0	-0.1	1637
BLR	0.0	-0.0	-0.0	3394
BRA	0.0	0.1	-0.1	3780
CAN	0.0	-0.2*	-0.5*	3320
CHL	0.0	-0.5	-0.5	3823
CHN	0.0	0.4*	0.2+	4371
COL		0.0	-0.1	4376
DEU	0.0	-0.1	0.0	5137
DZA	0.0	-0.4+	-0.6	1806
ECU	0.0	-1.0*	-0.8*	1187
EGY	0.0	-0.4*	-1.1*	3466
ESP	0.0	-0.0	-0.3+	1652
ETH	0.0	0.0	-0.2	1246
GEO	0.0	0.1	0.1	2602
GHA	0.0	0.3*	-0.1	2602
HUN	0.0	-0.1	-0.6*	952
IDN	0.0	0.1	0.1	2459
IND	0.0	-0.0	0.4*	6931
IRN	0.0	-0.4*	-0.0	2208
IRQ	0.0	-0.2	-0.2	1233
ITA	0.0	-0.2	0.1	639
JOR	0.0	0.1	-0.1	2137
KAZ	0.0	0.1	-0.3*	1497
KGZ	0.0	-0.1	-0.5*	2427
KWT	0.0	0.3	0.2	953
LBN	0.0	-0.0	-0.3	898
LTU	0.0	0.2	0.5+	889
LVA	0.0	-0.3+	-0.7*	1119
MAR	0.0	0.0	-0.3	888
MDA	0.0	0.2+	0.2+	2740
MEX	0.0	-0.0	-0.3*	3782
MKD	0.0	-0.2+	-0.3	1600
MYS	0.0	0.1	-0.3	1559
NGA	0.0	-0.2+	-0.2	4628
NZL	0.0	0.0		625
PAK	0.0	0.5*	0.5*	1131
PER	0.0	0.5*	-0.3	1122
PHL	0.0	-0.0	0.1	2343
POL	0.0	-0.1	-0.3+	2683
ROU	0.0	-0.1+	0.3*	3966
RUS	0.0	0.3*	0.3*	3999
RWA	0.0	-0.8*	-0.3	2432
SRB	0.0	0.1	-0.6*	3128
SVN	0.0	0.2*	-0.3	1896
SWE	0.0	0.2	0.2	1888
THA	0.0	0.1	0.1	2387
TUN	0.0	0.1		901
UKR	0.0	-0.1	-0.2*	3593
URY	0.0	0.3*	0.1	2511
USA	0.0	-0.1	-0.2*	3493
UZB	0.0	0.1	-0.3+	1407
VEN	0.0	-2.2*	-1.6*	1111
VNM	0.0	0.1	-0.5+	2330
ZAF	0.0	0.3*	0.2	5575
ZWE	0.0	0.2	0.1	1492

* $p<0.05$, + $p<0.1$; robust std err

Table 9: exT3-2

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ALB	0.0	0.3*	-0.3+	-0.6*	-0.2	-0.3	0.1	-0.0	1864
ARG	0.0	0.9*	-0.3	0.1	0.4	0.0	-0.4	0.1	955
AUS	0.0	0.0	-0.3	0.1	0.0	-0.1	-0.1	-0.2	3895
AZE	0.0	-0.0	-0.4	-0.2	0.1	-0.1	-0.4	0.1	995
BFA	0.0	0.1	0.6+	-0.2	0.3	0.6+	0.7	-0.0	636
BGD	0.0	-0.4*	-0.2	-0.4*	-0.5*	-0.1	-0.3	0.5*	2562
BGR	0.0	0.5*	0.1	0.2	0.2	0.0	0.4*	0.1	1637
BLR	0.0	0.3	-0.2	0.2	-0.1	0.1	-0.0	0.0	3394
BRA	0.0	-0.3	0.4	-0.1	-0.1	-0.2	-0.5	-0.4	3780
CAN	0.0	-0.0	-0.2	-0.2	-0.2+	-0.3*	-0.2*	-0.5*	3320
CHL	0.0	0.5	1.0	-0.1	1.2*	-0.2	-0.3	-0.2	3823
CHN	0.0	0.0	0.5*	0.8*	0.1	0.2	0.6*	0.4+	4371
COL			0.0	0.0	0.2	0.1	0.0	-0.0	4376
DEU	0.0	-0.1	-0.0	-0.2*	-0.2*	-0.0	-0.0	-0.0	5137
DZA	0.0	1.7*	-0.5*	-0.1	-0.1	-0.5+	-0.3	-0.5	1806
ECU	0.0	0.1	-1.2	-1.0*	-0.7*	-1.1*	-0.9*	-0.8*	1187
EGY	0.0	0.6+	0.0	-0.1	-0.1	0.3	-0.3	-0.7*	3466
ESP	0.0	-0.2	-0.2	-0.2	0.1	-0.0	-0.2	-0.4+	1652
ETH	0.0	0.7	2.2*	0.0	-2.0*	-0.2	0.5	0.1	1246
GEO	0.0	0.2+	0.3+	0.2	0.0	1.1*	-0.0	0.2+	2602
GHA	0.0	0.3+	0.8*	0.7*	0.6*	0.5+	0.3	0.1	2602
HUN	0.0	0.1	-0.3	-0.3	0.1	0.1	-0.0	-0.5+	952
IDN	0.0	-0.0	0.0	-0.2	1.0*	0.5+	-0.0	0.1	2459
IND	0.0	0.2*	-0.2*	0.6*	0.4*	-0.5*	-0.3*	0.4*	6931
IRN	0.0	-0.5*	-0.7*	-0.2	0.1	-1.0+	-0.7*	-0.2+	2208
IRQ	0.0	-0.6+	-0.6	-0.7	-0.3	-0.8+	-1.0*	-0.7*	1233
ITA	0.0	-0.5+	-0.0	-0.4+	-0.7*	-0.6*	-0.9*	-0.3	639
JOR	0.0	-0.1	-0.2	0.2	0.0	-0.2	0.1	-0.2	2137
KAZ	0.0	-0.5*	-0.4	-0.0	0.1	-0.6+	-0.3+	-0.6*	1497
KGZ	0.0	-0.2+	-0.6*	-0.5*	-0.3	-0.1	0.3+	-0.6*	2427
KWT	0.0	1.7*	0.5	0.2	0.1	1.3*	1.2*	0.8*	953
LBN	0.0	-0.6+	-0.6+	-0.5+	-0.3	-0.4	-0.4	-0.7+	898
LTU	0.0	1.0	0.1	0.2	0.2	-0.4	0.4+	0.5+	889
LVA	0.0	-0.0	0.2	-0.2	-0.2	-0.3	-0.7*	-0.7*	1119
MAR	0.0	-0.2	-0.4	-0.1	-0.2	-0.2	-0.0	-0.4	888
MDA	0.0	0.3*	0.4*	0.3+	0.5*	-3.0*	0.5*	0.4*	2740
MEX	0.0	0.2+	0.1	0.1	0.2	0.1	0.1	-0.1	3782
MKD	0.0	0.9*	-0.1	-0.2	-0.1	0.1	1.4*	-0.0	1600
MYS	0.0	0.1	-0.0	0.2	0.4	-0.2	0.2	-0.2	1559
NGA	0.0	-0.0	-0.6	-0.2	-0.2	-0.4	-0.1	-0.3	4628
NZL	0.0		0.2	0.4	0.0	-0.1	-0.1		625
PAK	0.0	0.0	0.5+				0.4	0.5*	1131
PER	0.0	-0.1	-0.4	0.1	0.2	0.3	0.6*	-0.3	1122
PHL		0.0		-0.5	0.2	-0.2	-0.0	0.1	2343
POL	0.0	-0.1	0.0	0.2	-0.4*	-0.0	-0.1	-0.3+	2683
ROU	0.0	0.0	0.0	-0.5*	-0.1	-0.4*	0.0	0.3*	3966
RUS	0.0	0.5*	0.5*	0.5*	0.5*	0.3*	0.5*	0.5*	3999
RWA	0.0	-0.3	-1.3*	-1.0+	-0.8	-1.2*	-0.8	-0.5	2432
SRB	0.0	0.2	0.0	0.1	-0.0	0.4*	0.2	-0.5*	3128
SVN	0.0	0.1	0.3*	0.4*	0.2	0.2	0.1	-0.3	1896
SWE	0.0	-0.7*	-0.0	0.2	0.0	0.0	0.0	-0.0	1888
THA	0.0	0.2*	0.3*	0.0	-0.2	0.0	0.7*	0.1	2387
TUN	0.0	-0.7	-0.5	-0.7	-0.4				901
UKR	0.0	0.4*	0.1	0.3*	0.0	-0.2	-0.0	-0.1	3593
URY	0.0	0.2	0.2	0.4+	0.5*	0.3	2.1*	0.2	2511
USA	0.0	-0.2	-0.1	-0.1	-0.1	-0.4*	-0.3+	-0.4*	3493
UZB	0.0	0.3*	0.5+	0.4	-0.1	-0.3	0.2	-0.1	1407
VEN	0.0	1.3	-1.6	-1.2	-1.0	-1.2	-1.6+	-0.7	1111
VNM	0.0	0.2	0.1	0.6*	-0.1	1.1*	0.0	-0.3	2330
ZAF	0.0	-0.3+	0.3+	0.2	0.4*	0.2	0.4*	0.1	5575
ZWE	0.0	-0.0	0.4	-0.3	0.1	0.1	0.3	0.1	1492

* p<0.05, + p<0.1; robust std err

Table 10: exT-2

	-10	10-50k	50-500k	500k-	N
ALB	0.0	-0.4*	-0.2	0.5*	1582
ARG	0.0	0.1	-0.3	-0.0	855
AUS	0.0	0.1	0.0	-0.0	3728
AZE	0.0	0.1	-0.0	0.3*	964
BFA	0.0	-0.0	0.3	-0.2	567
BGD	0.0	-0.2*	0.1	0.6*	2104
BGR	0.0	-0.0	-0.1	-0.5*	1229
BLR	0.0	0.0	-0.1	-0.1	2815
BRA	0.0	-0.3*	-0.5*	-0.6*	3576
CAN	0.0	-0.1	-0.1+	-0.3*	3177
CHL	0.0	0.6+	-0.7*	-0.7*	3527
CHN	0.0	-0.3	-0.4	-0.7	2005
COL	0.0	0.1	0.0	-0.1	1376
DEU	0.0	-0.2*	-0.0	0.0	4795
DZA	0.0	0.3+	0.0	-0.0	1596
ECU	0.0	-0.7*	-0.7*	-0.5+	1182
EGY	0.0	-0.2	0.1	-0.8*	3428
ESP	0.0	-0.1	-0.0	-0.1	1487
ETH	0.0	-1.4+	0.1	0.1	1017
GEO	0.0	-0.0	0.1	0.0	2401
GHA	0.0	0.2+	0.1	-0.1	2572
HUN	0.0	0.0	-0.1	-0.4*	887
IDN	0.0	0.3*	0.2	0.1	2056
IND	0.0	0.5*	-0.4*	0.4*	5857
IRN	0.0	0.3	-0.5*	0.0	2119
IRQ	0.0	0.3+	-0.3*	-0.0	1123
ITA	0.0	-0.2	-0.3+	0.0	585
JOR	0.0	0.2*	-0.0	-0.2	2089
KAZ	0.0	0.2	-0.1	-0.3*	1497
KGZ	0.0	-0.1	0.2	-0.3*	2293
LBN	0.0	0.3+	0.1	0.2	731
LTU	0.0	0.3	0.3	0.2	750
LVA	0.0	-0.1	-0.4*	-0.7*	963
MAR	0.0	0.1	0.2	-0.1	845
MDA	0.0	0.2+	0.2	0.1	2478
MEX	0.0	-0.0	-0.1	-0.2+	3544
MKD	0.0	-0.3+	0.1	0.0	1385
MYS	0.0	0.2	0.0	-0.4*	1541
NGA	0.0	0.2	0.2+	0.1	4488
NZL	0.0	0.0	-0.1		417
PAK	0.0		0.2	0.2	900
PER	0.0	0.1	0.5*	-0.5	1026
PHL	0.0	0.4	0.4	0.5	2294
POL	0.0	-0.2	-0.1	-0.2	1533
ROU	0.0	-0.3*	-0.2*	0.3*	3568
RUS	0.0	0.1	0.1	0.2+	3253
RWA	0.0	-0.1	-0.2*	0.1	2398
SRB	0.0	0.0	0.2*	-0.4*	2539
SVN	0.0	0.3*	-0.1	-0.3	1620
SWE	0.0	0.2	0.1	0.1	1769
THA	0.0	-0.1	0.2	0.0	2178
TUN	0.0	-0.1			826
UKR	0.0	0.1	0.0	-0.1	2985
URY	0.0	0.3*	0.1	0.1	2017
USA	0.0	0.0	-0.1	-0.2*	3372
UZB	0.0	-0.1	0.0	-0.3*	1247
VEN	0.0	-0.2	-0.7+	0.1	1034
VNM	0.0	0.3*	0.2	-1.4*	2039
ZAF	0.0	0.2+	0.1	-0.0	5330
ZWE	0.0	-0.2	0.1	0.0	1487

* p<0.05, + p<0.1; robust std err

Table 11: exT4-3

	-5	5-500k	500k-	N
ALB	0.0	-0.4*	0.4+	1582
ARG	0.0	-0.2	-0.0	855
AUS	0.0	-0.0	-0.1	3728
AZE	0.0	-0.1	0.3	964
BFA	0.0	0.3	0.0	567
BGD	0.0	0.0	0.7*	2104
BGR	0.0	-0.0	-0.5*	1229
BLR	0.0	-0.1	-0.1	2815
BRA	0.0	-0.2	-0.4*	3576
CAN	0.0	-0.1+	-0.3*	3177
CHL	0.0	-0.7*	-0.7*	3527
CHN		0.0	-0.4*	2005
COL		0.0	-0.1	1376
DEU	0.0	-0.1	0.0	4795
DZA	0.0	-0.4*	-0.6	1596
ECU	0.0	-0.9*	-0.7*	1182
EGY	0.0	-0.4*	-1.1*	3428
ESP	0.0	-0.1	-0.1	1487
ETH	0.0	0.3	0.4	1017
GEO	0.0	0.1	0.1	2401
GHA	0.0	0.3*	-0.0	2572
HUN	0.0	0.0	-0.4*	887
IDN	0.0	0.1	-0.0	2056
IND	0.0	-0.0	0.3*	5857
IRN	0.0	-0.3*	-0.0	2119
IRQ	0.0	-0.1	-0.0	1123
ITA	0.0	-0.1	0.2	585
JOR	0.0	0.1	-0.2	2089
KAZ	0.0	-0.0	-0.3*	1497
KGZ	0.0	-0.1	-0.3*	2293
LBN	0.0	0.1	0.2	731
LTU	0.0	0.3	0.3	750
LVA	0.0	-0.1	-0.6*	963
MAR	0.0	0.0	-0.2	845
MDA	0.0	0.2*	0.2	2478
MEX	0.0	-0.1	-0.2+	3544
MKD	0.0	-0.2	-0.1	1385
MYS	0.0	0.1	-0.4*	1541
NGA	0.0	-0.1	-0.1	4488
NZL	0.0	-0.1		417
PAK	0.0	0.4+	0.3	900
PER	0.0	0.3*	-0.5	1026
PHL	0.0	0.4	0.5	2294
POL	0.0	-0.1	-0.1	1533
ROU	0.0	-0.2*	0.3*	3568
RUS	0.0	0.2*	0.2*	3253
RWA	0.0	-0.7*	-0.4+	2398
SRB	0.0	0.1	-0.4*	2539
SVN	0.0	0.2+	-0.2	1620
SWE	0.0	0.2	0.2	1769
THA	0.0	0.1	0.1	2178
TUN	0.0	0.1		826
UKR	0.0	0.0	-0.1	2985
URY	0.0	0.2	0.1	2017
USA	0.0	-0.1	-0.2*	3372
UZB	0.0	0.0	-0.3*	1247
VEN	0.0	-1.7*	-1.2*	1034
VNM	0.0	0.1	-1.5*	2039
ZAF	0.0	0.2*	0.0	5330
ZWE	0.0	0.1	0.2	1487

* p<0.05, + p<0.1; robust std err

Table 12: exT3-3

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ALB	0.0	0.2	-0.5*	-0.6*	-0.4*	-0.5*	0.0	0.4*	1582
ARG	0.0	0.6+	-0.0	0.0	0.3	-0.1	-0.3	0.1	855
AUS	0.0	0.0	-0.2	0.1	0.0	-0.1	-0.0	-0.1	3728
AZE	0.0	0.0	-0.5	-0.2	0.3	-0.0	-0.1	0.3	964
BFA	0.0	0.3	0.7+	0.1	0.6+	0.8+	0.8	0.2	567
BGD	0.0	-0.8*	-0.6*	-1.0*	-0.8*	-0.5*	-0.6*	-0.0	2104
BGR	0.0	0.4*	0.3	0.3	0.1	-0.1	0.2	-0.3+	1229
BLR	0.0	0.5*	-0.3	0.1	-0.0	0.1	-0.1	-0.0	2815
BRA	0.0	-0.6+	-0.2	-0.6+	-0.6*	-0.7*	-0.9*	-0.9*	3576
CAN	0.0	-0.1	-0.1	-0.1	-0.2	-0.3*	-0.1	-0.4*	3177
CHL	0.0	0.8+	0.3	0.8	1.1*	-0.2	-0.3	-0.3	3527
CHN			0.0	0.1	-0.4	-0.4	-0.3	-0.7	2005
COL			0.0	0.5	-0.0	0.2	-0.1	-0.1	1376
DEU	0.0	-0.0	-0.0	-0.2+	-0.2*	-0.1	-0.1	-0.0	4795
DZA	0.0	1.6*	-0.6*	-0.2	-0.1	-0.4	-0.4+	-0.5	1596
ECU	0.0	-0.0	-1.0	-1.3*	-0.8*	-1.0*	-0.9*	-0.8*	1182
EGY	0.0	0.4	-0.1	-0.2	-0.2	0.3	-0.4	-0.8*	3428
ESP	0.0	-0.4+	-0.4	-0.4*	-0.2	-0.2	-0.3+	-0.3+	1487
ETH	0.0	-0.3	2.3*	0.2	-2.0*	-0.2	0.4	0.2	1017
GEO	0.0	0.1	0.2	0.1	-0.0	0.8*	0.0	0.1	2401
GHA	0.0	0.4*	0.8*	0.6*	0.6*	0.5+	0.3	0.2	2572
HUN	0.0	0.1	0.2	-0.1	0.2	-0.1	0.0	-0.4	887
IDN	0.0	-0.2	-0.3	-0.1	0.4	0.2	-0.1	-0.1	2056
IND	0.0	0.1	-0.2*	0.5*	0.4*	-0.5*	-0.4*	0.3*	5857
IRN	0.0	-0.4*	-0.5*	-0.1	0.2	-0.9	-0.7*	-0.2	2119
IRQ	0.0	-0.0	-1.0	-0.4	0.3	-0.2	-0.4	-0.1	1123
ITA	0.0	-0.5+	-0.0	-0.4	-0.5+	-0.5	-0.7*	-0.2	585
JOR	0.0	-0.0	-0.1	0.2	0.2	-0.2	0.0	-0.2	2089
KAZ	0.0	-0.5*	-0.6*	-0.3	-0.1	-0.5+	-0.4*	-0.7*	1497
KGZ	0.0	0.0	-0.3	-0.2	-0.2	0.2	0.2	-0.3*	2293
LBN	0.0	-0.5	-0.5	-0.3	0.1	-0.4	-0.2	-0.2	731
LTU	0.0	0.6	0.3	0.4	0.3	-0.4	0.4+	0.3	750
LVA	0.0	-0.2	0.3	-0.1	-0.1	-0.3	-0.5+	-0.7*	963
MAR	0.0	-0.1	-0.2	0.0	-0.0	-0.0	0.0	-0.2	845
MDA	0.0	0.4*	0.5*	0.5*	0.6*	-2.9*	0.7*	0.4*	2478
MEX	0.0	0.1	0.0	0.0	-0.0	-0.1	-0.0	-0.1	3544
MKD	0.0	0.5+	-0.3	-0.6+	-0.1	0.1	1.3*	0.1	1385
MYS	0.0	0.1	0.1	0.2	0.3	-0.1	0.1	-0.4+	1541
NGA	0.0	0.5	-0.0	0.3	0.3	0.2	0.4	0.3	4488
NZL	0.0		-0.2	0.0	-0.1	-0.0	-0.2		417
PAK	0.0	0.1	0.5				0.3	0.3	900
PER	0.0	-0.2	-0.5	0.0	0.1	0.4	0.4*	-0.6	1026
PHL		0.0		-0.2	0.5	0.3	0.4	0.5	2294
POL	0.0	-0.1	0.1	-0.1	-0.2	0.0	-0.1	-0.2	1533
ROU	0.0	-0.1	-0.2	-0.7*	-0.2	-0.5*	-0.2	0.2	3568
RUS	0.0	0.5*	0.4*	0.3	0.4*	0.3+	0.4*	0.4*	3253
RWA	0.0	-0.7	-1.6*	-1.2*	-1.1*	-1.4*	-1.1*	-1.0*	2398
SRB	0.0	0.2	-0.0	0.2	0.1	0.3+	0.3+	-0.3*	2539
SVN	0.0	-0.0	0.2	0.6*	0.2	-0.0	-0.0	-0.3	1620
SWE	0.0	-0.8*	-0.1	0.1	-0.0	-0.1	-0.1	-0.1	1769
THA	0.0	0.3*	0.3*	0.2	-0.2	0.0	1.0*	0.1	2178
TUN	0.0	-0.4	-0.2	-0.4	-0.1				826
UKR	0.0	0.4*	0.2	0.4*	0.0	0.2	0.1	0.1	2985
URY	0.0	-0.5+	-0.3	-0.1	0.0	-0.3	1.2*	-0.3	2017
USA	0.0	-0.2	-0.2	-0.1	-0.1	-0.3*	-0.3+	-0.4*	3372
UZB	0.0	0.3*	0.3	0.3	-0.1	-0.5	0.2	-0.2	1247
VEN	0.0	1.6	-0.9	-0.2	-0.4	-0.6	-0.9	-0.1	1034
VNM	0.0	0.1	-0.0	0.4+	-0.1	1.0*	0.1	-1.4*	2039
ZAF	0.0	-0.5*	0.3	0.2	0.3+	-0.0	0.3+	-0.0	5330
ZWE	0.0	0.1	0.4+	-0.3	0.2	0.2	0.3+	0.2	1487

* p<0.05, + p<0.1; robust std err

Table 13: exT-3

In table **??** several places appear happier like BGD, IND, LTU, PAK, ROU, and RUS, when adding more controls and full town categories that disappear except for 4 countries.

The results in table **??** are remarkable. In most countries, large cities are less happy than small settlements. Without exception, in no developed country the city is a happier place than the smallest areas. The only four countries where people are happier in large cities are:

	-10	10-50k	50-500k	500k-	N
ARG	0.0	0.2	-0.1	0.2	845
AUS	0.0	0.1	0.1	-0.1	925
AZE	0.0	0.3	0.2	0.4*	958
BLR	0.0	-0.2	-0.1	0.1	1254
BRA	0.0	-0.2	-0.2	-0.5*	1154
CHL	0.0	0.8*	-0.7*	-0.5*	797
CHN			0.0	-0.2*	1175
COL	0.0	0.1	0.1	0.1	1353
DEU	0.0	-0.2*	-0.0	-0.1	1832
DZA	0.0	0.2	0.1		732
ECU	0.0	-0.7*	-0.7*	-0.5*	1182
GEO	0.0	0.1	0.1	0.3*	1157
GHA	0.0	0.1	-0.2		1434
IND	0.0	0.2*	-0.3*	-0.4	2507
IRQ	0.0	0.1	-0.2+	-0.2	947
JOR	0.0	0.1	-0.2		1124
KAZ	0.0	0.2	-0.0	-0.2+	1443
KGZ	0.0	0.0	-0.1	0.0	1225
LBN	0.0	0.3+	-0.0	0.3	692
MEX	0.0	-0.1	-0.1	-0.2	1811
MYS	0.0	0.4	0.1	-0.8*	390
NGA	0.0	0.3+	0.0	0.3	1576
NLD	0.0	0.4	0.4	0.5	1448
NZL	0.0	0.1	0.0		408
PER	0.0	0.2	0.4*	-0.7	1018
PHL	0.0	0.4	0.6	0.5	1142
POL	0.0	0.0	0.0	-0.2	793
ROU	0.0	-0.1	-0.2	0.1	1323
RUS	0.0	-0.2	0.0	0.1	1665
RWA	0.0	-0.1	-0.1	0.2	1251
SVN	0.0	0.4*	-0.1	-0.5	807
SWE	0.0	0.1	0.0	0.1	981
THA	0.0	-0.5*	-0.3		922
TUN	0.0	0.0			822
UKR	0.0	-0.2	-0.3*	-0.1	1308
URY	0.0	0.2	-0.2	0.1	465
UZB	0.0	-0.0	0.1	-0.1	1179
ZAF	0.0	0.2	0.1		3058
ZWE	0.0	0.1	0.0	0.1	1478

* p<0.05, + p<0.1; robust std err

Table 14: exT4-4

	-5	5-500k	500k-	N
ARG	0.0	-0.0	0.1	845
AUS	0.0	0.0	-0.1	925
AZE	0.0	0.1	0.4*	958
BLR	0.0	-0.3*	-0.0	1254
BRA	0.0	-0.1	-0.4+	1154
CHL	0.0	-0.6*	-0.6*	797
CHN		0.0	-0.2*	1175
COL		0.0	0.0	1353
DEU	0.0	-0.2*	-0.2	1832
DZA	0.0	-0.4+		732
ECU	0.0	-0.9*	-0.8*	1182
GEO	0.0	0.2	0.4*	1157
GHA	0.0	0.2+		1434
IND	0.0	0.0	-0.4	2507
IRQ	0.0	-0.1	-0.2	947
JOR	0.0	-0.1		1124
KAZ	0.0	-0.0	-0.3*	1443
KGZ	0.0	-0.1	-0.0	1225
LBN	0.0	0.1	0.2	692
MEX	0.0	-0.1	-0.2+	1811
MYS	0.0	-0.5	-1.4*	390
NGA	0.0	-0.1	0.0	1576
NLD	0.0	-0.7*	-0.5+	1448
NZL	0.0	-0.0		408
PER	0.0	0.3+	-0.7	1018
PHL	0.0	0.6	0.5	1142
POL	0.0	0.0	-0.2	793
ROU	0.0	-0.2	0.0	1323
RUS	0.0	-0.1	0.0	1665
RWA	0.0	-0.6*	-0.4	1251
SVN	0.0	0.2+	-0.4	807
SWE	0.0	0.0	0.1	981
THA	0.0	-0.3*		922
TUN	0.0	0.1		822
UKR	0.0	-0.3*	-0.1	1308
URY	0.0	0.1	0.1	465
UZB	0.0	0.1	-0.1	1179
ZAF	0.0	0.3*		3058
ZWE	0.0	0.2	0.2	1478

* p<0.05, + p<0.1; robust std err

Table 15: exT3-4

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ARG	0.0	0.6	0.0	0.2	0.3	0.0	-0.1	0.2	845
AUS	0.0	0.0	-0.2	0.2	-0.0	0.0	0.1	-0.1	925
AZE	0.0	-0.1	-0.4	-0.3	0.5	0.3	-0.0	0.4+	958
BLR	0.0	-0.4	-1.2*	-0.2	-0.3+	-0.2	-0.2+	-0.0	1254
BRA	0.0	-0.5	-0.2	-0.4	-0.6+	-0.2	-0.7*	-0.8*	1154
CHL	0.0	0.8	-0.0	1.0+	1.1*	-0.5	-0.3	-0.2	797
CHN							0.0	-0.2*	1175
COL			0.0	0.3	-0.1	0.2	-0.0	0.0	1353
DEU	0.0	0.1	-0.1	-0.2	-0.3*	-0.2	0.0	-0.1	1832
DZA	0.0		-0.6*	-0.1	-0.3	-0.4	-0.2		732
ECU	0.0	-0.2	-1.0	-1.3*	-0.9*	-1.1*	-1.0*	-0.9*	1182
GEO	0.0	-0.1	0.3	0.4	-0.0	0.7	0.1	0.3*	1157
GHA	0.0	-0.1	0.2	0.1	0.2	-0.1	0.1		1434
IND	0.0	-0.2+	-0.2	0.2*	-0.6*	-0.5*	-0.2	-0.4	2507
IRQ		0.0			0.1	-0.3	-0.2	-0.2	947
JOR	0.0	0.1	-0.1	0.1	-0.0	-0.3			1124
KAZ	0.0	-0.5*	-0.5*	-0.1	-0.2	-0.5	-0.4*	-0.6*	1443
KGZ	0.0	-0.1	-0.2	-0.1	0.1		-0.2	-0.0	1225
LBN	0.0	-0.3	-0.4	-0.2	0.5	-0.3	-0.2	0.0	692
MEX	0.0	0.1	-0.1	0.0	-0.2	-0.1	-0.1	-0.2	1811
MYS	0.0	-0.8	-1.7+	-0.7	-0.9	-1.1	-1.1	-1.9*	390
NGA	0.0	0.4	-0.0	0.6+	0.3	0.1	0.2	0.4	1576
NLD		0.0	-1.2*	-0.6*	-0.6*	-0.7*	-0.6*	-0.5+	1448
NZL	0.0		-0.1	0.1	-0.1	0.0	-0.0		408
PER	0.0	-0.1	-0.5	0.1	0.1	0.3	0.4*	-0.7	1018
PHL		0.0		-1.2	0.4	0.7	0.6	0.5	1142
POL	0.0	-0.1	0.1	0.7+	-0.2	0.2	-0.0	-0.2	793
ROU	0.0	-0.6	-0.6	-0.9*	-0.4	-1.0*	-0.7+	-0.5	1323
RUS	0.0	0.5*	-0.0	-0.1	-0.1	0.3	0.1	0.2	1665
RWA		0.0	-0.9*	-0.6*	-0.5*	-0.7*	-0.5*	-0.3	1251
SVN	0.0	0.4*	0.3+	1.0*	0.4+	0.5	0.0	-0.4	807
SWE	0.0	-1.4*	-0.3	-0.0	-0.1	-0.2	-0.2	-0.2	981
THA	0.0	0.2	-0.1	-0.1	-0.6*	-0.2	-1.2*		922
TUN	0.0	0.4	0.4	0.4	0.4				822
UKR	0.0	0.2	-0.1	-0.3	-0.1	-0.3	-0.2	-0.0	1308
URY	0.0	-1.6*	-1.3*	-1.0+	-1.1+	-1.5*	-0.4	-1.2*	465
UZB	0.0	0.3*	0.2	0.3	-0.0	-0.5	0.3*	0.0	1179
ZAF	0.0	-0.3	0.5+	0.2	0.2	0.1			3058
ZWE	0.0	0.2	0.4+	-0.1	0.5*	0.2	0.2	0.3	1478

* p<0.05, + p<0.1; robust std err

Table 16: exT-4