13 OIL, MACRO VOLATILITY, AND CRIME IN THE DETERMINATION OF BELIEFS IN VENEZUELA

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In this chapter, we use data on political beliefs (broadly, left–right position, meritocracy, and origins of poverty) to discuss Venezuela's economic institutions. Our starting point is the large role attributed to beliefs in determining the economic system and the extent of government intervention (see, for example, Alesina, Glaeser, and Sacerdote 2001). This brings us to the question of what causes changes in beliefs. We briefly discuss and present evidence consistent with the idea that some of the main social and economic forces that affected Venezuela this century may have changed people's rational beliefs. These include a dependence on oil, a history of macroeconomic volatility, the rise in crime, and the rise in a preoccupation with corruption. We end up with a cautionary result: although these results point in the direction of giving a role to real shocks in the determination of beliefs, we test and find that perceptions for different phenomena are sometimes correlated. In particular, the perception of corruption is related to the perception of crime rather than the amount of real corruption actually experienced.

In an important paper, Piketty (1995) showed how beliefs could be central to economic organization. He focused on beliefs concerning the income-generating process and argued that when income was determined by luck, rational agents would be inclined to increase taxes. In contrast, when effort played a large role, rational agents fearing adverse incentive effects would moderate taxes. He then argued that, even if there were one fixed reality, two agents who started with prior beliefs at each end of the spectrum would not necessarily converge as long as agents could not freely find credible information to generalize from their own

experience. In fact, he argued that information on how much effort really pays is not easy to observe (given that effort input is not observable), and that eventually agents would settle on some belief about the likely value of these parameters and stop experimenting (a form of bandit problem). Generalizing to countries, he argued that tax choices would reinforce these beliefs: where effort doesn't pay and luck dominates, agents would tend to vote on high taxes and luck would then really dominate. Indeed, the key finding in Piketty's paper is that two different economic systems—one with high taxes and beliefs that luck matters that can be called the French equilibrium, and another with low taxes and a belief that effort pays that can be called an American equilibrium—could arise out of the same underlying reality. Other papers that explore related ideas concern the role of upward mobility (Benabou and Ok 2001), fairness (Alesina and Angeletos 2005b), belief in a just world (Benabou and Tirole 2006), and corruption (Alesina and Angeletos 2005a; Di Tella and MacCulloch 2006). Denzau and North (1994) discuss institutions as "shared mental models" (see also Greif 1994).

A belief-based explanation is attractive given the difficulties that the standard economic model (e.g., Meltzer and Richard 1981) has in explaining the observed patterns of inequality and redistribution across Europe and the United States. Indeed, these models are particularly relevant once one observes the remarkable differences in beliefs across the Atlantic. For instance, Alesina, Glaeser, and Sacerdote (2001) report that 60 percent of Americans—yet only 26 percent of Europeans—believe the poor are lazy, while spending on social welfare in 1995 in the United States was 16 percent of GDP compared to an average of 25 percent for countries in Europe. (See also Lipset and Rokkan 1967; and the evidence in Hochschild 1981; Alesina and La Ferrara 2005; Fong 2004; and Ladd and Bowman 1998.)

Given the centrality of beliefs in economic organization, it seems natural to ask what drives beliefs. Very little evidence (that has a causal interpretation) is available (but see Di Tella, Donna, and MacCulloch 2008 on the connection with crime; and Di Tella, Rafael, Schargrodsky, and Galiani 2007, on the connection with property rights and a windfall gain). One extreme position is to argue that beliefs are cultural norms and are thus immutable. Alternatively, a rational learning process would posit their dependence on economic conditions. The latter hypothesis is particularly interesting in the context of Latin America in general, and Venezuela in particular, given their rather eventful history, with several traumatic and joyous events that may have affected beliefs simply because reality, at least for a while, appeared to have changed. The oil discoveries and the high prices during the 1970s, the macroeconomic crises, and the crime waves are all candidate episodes to be explored.

In this chapter, we take some of the likely forces that may have affected the formation of beliefs in Venezuela, explore their validity using data from a broader sample of countries, and then use the results to see how much of the Venezuelan experience they can explain. In particular, we wish to explain why the economy did so well between 1920 and 1970 yet so poorly after 1970, when the economies of other Latin American countries were growing. Our explanation centers on the increased macroeconomic volatility caused by the oil price shocks in the 1970s that led to a shift toward more leftist economic beliefs. In particular, Venezuelans began to view luck as the predominant determinant of economic success rather than effort. In this sense, the result of Venezuela's "resource curse" may have been a tendency for people to become more left-wing as volatile oil prices ushered in an era of populist and interventionist government policies that hampered the nation's post-1970s economic development.

In the next section, we discuss the role of a history of macroeconomic volatility; after that we explore the role of a country's dependence on oil rents; in the following section, we present further results on the role of corruption and beliefs (along the lines discussed in Di Tella and MacCulloch 2006), while after that we present the correlations between beliefs and having been the victim of crime. The next section studies the correlation between beliefs about a phenomenon (corruption) and beliefs about a second phenomenon (crime) controlling for reality (i.e., the experience with corruption and the experience with crime). After that we discuss the results in the context of Venezuela, while in the final section we offer some concluding comments.

Beliefs and a History of Macro Volatility

In this section, we study the correlation between a country's historical macroeconomic performance and its citizens' average beliefs in a cross-section of countries. We use the average values obtained from the third wave of the World Values Survey to construct our measures of beliefs and the World Bank's World Development Indicators to construct our measures of macro volatility. The basic results are presented in tables 13.1a and 13.1b. All regressions are estimated using OLS for simplicity (similar results are obtained if ordered logits are estimated) and control for income (six categories), gender, and age.[1] Results in columns (1–4) in table 13.1a focus on a general measure of beliefs: ideological self-placement on a 0–10 scale. These regressions are illustrative as a first broad pass at the data, as clearly the answers are provided with some country-specific ideological content. It is still perhaps interesting to note that a history of inflation volatility tilts the

survey answers significantly to the left. In order to get some sense of the size of the effect, note that one standard deviation of the history of inflation volatility variable is associated with a decline of right wing-R of 5.8 percent of a standard deviation of this variable [−0.058 = (329.1/2.33)·(−4.1e−04)]. Columns (2–4) in table 13.1a present similar regressions, using history of GDP growth volatility, history of exchange rate volatility, and history of unemployment. The results are consistent (the coefficients are negative) although they are less precisely estimated.

Regressions (5–8) in table 13.1a focus on a more interesting dimension of beliefs, namely, unfair for poor-L, a dummy equal to 1 if the response to the question "Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? (1) They are poor because of laziness and lack of willpower, or (2) They are poor because society treats them unfairly" is (2) and 0 if the answer is (1). Now the key coefficients are generally positive as expected (the variable is defined so that bigger numbers have a natural interpretation as being left) and significant for both a history of inflation volatility and a history of exchange rate volatility. A history of unemployment volatility is also positive, but only significant at the 15 percent level.

Columns (1–4) in table 13.1b focus on the variable no escape-L (all variable definitions are in the appendix) and reveal that the volatility of inflation and of the exchange rate, as well as the history of unemployment, are correlated with more left-wing beliefs as expected. Columns (5–8) focus on business owner-L. Columns (5–6) are positive and significant, while column (7) is positive but significant only at the 11 percent level.

Beliefs and Oil

We now explore the hypothesis that economic dependence on oil causes the average beliefs in the country to lean toward the left end of the political spectrum. The results are presented in table 13.2, where we now focus on one summary variable of beliefs (ideological self-placement on a 1–10 scale) and regress the average country–year values against several measures of dependence on oil. One improvement over the previous section is that, given that we are no longer interested in historical background, we can exploit the time dimension of the values data and present panel regressions that control for country and year fixed effects. We adopt the convention that data from the WVS for wave 1 is matched to World Development Indicators data from 1981, for wave 2 to 1990, and wave 3 to 1997. All regressions control for age, gender and income of the respondents, although given representative sampling within countries this should not have a

Table 13.1a How beliefs (general ideology and "poor are lazy") vary with macro volatility: Cross-section, thirty-two countries

Dependent variables	(1) Right wing-R	(2) Right wing-R	(3) Right wing-R	(4) Right wing-R	(5) Unfair for poor-L	(6) Unfair for poor-L	(7) Unfair for poor-L	(8) Unfair for poor-L
History of inflation volatility	−4.1e−04 (1.3e−04)	—	—	—	1.5e−04 (3.9e−05)	—	—	—
History of GDP growth volatility	—	−0.018 (0.034)	—	—	—	−0.006 (0.015)	—	—
History of exchange rate volatility	—	—	−0.033 (0.027)	—	—	—	0.019 (0.007)	—
History of unemployment	—	—		−0.017 (0.022)	—	—	—	0.008 (0.005)
R-sq.	0.013	0.010	0.003	0.011	0.018	1e−04	0.011	0.010
Number of groups	32	32	32	32	31	31	31	31
Number of obs.	31,585	31,585	31,585	31,585	27,120	27,120	27,120	27,120

NOTE: Name of dependent variable has L (R) extension if higher numbers mean more left (right). Right wing-R: a categorical variable that is the answer to the question "In politics people talk of the 'left' and of the 'right.' In a scale where '0' is left and '10' is right, where would you place yourself?" Unfair for poor-L: a dummy that is the response to the question "Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? (1) They are poor because of laziness and lack of willpower, or (2) They are poor because society treats them unfairly." The dummy takes the value 1 if the answer is (2) and 0 if the answer is (1). All regressions are cross-section (third wave) OLS regressions. Standard errors (adjusted for clustering) are in parentheses. The regressions include a set of personal controls that include age, gender and income Ia (which is the respondent's declared income level as captured in the answer to the question "People sometimes describe themselves as belonging to the lower class, the middle class, or the upper class. How would you describe yourself?"). Left-hand variables are constructed using the World Bank's World Development Indicators as follows. History of inflation volatility: average of the absolute value of the inflation (CPI) 1993–1997 (five years before the third wave of the WVS), using annual averages in percent. History of growth volatility: average of the absolute value of the GDP growth 1993–1997 (five years before the third wave of the WVS) using annual averages in percent. History of exchange rate volatility: average of the absolute value of the exchange rate growth 1993–1997 (five years before the third wave of the WVS) calculated using the official exchange rate (LCU per USD, annual average). History of unemployment: average of the absolute value of the unemployment rate 1993–1997 (five years before the th ird wave of the WVS) using annual averages (percentage of total labor force).

Table 13.1b How beliefs ("escape from poverty" and "ownership of business") vary with macro volatility: Cross-section, thirty-two countries

Dependent variables	(1) No escape–L	(2) No escape–L	(3) No escape–L	(4) No escape–L	(5) Business owner-L	(6) Business owner-L	(7) Business owner-L	(8) Business owner-L
History of inflation volatility	2.2e–04 (5.3e–05)	—	—	—	2.0e–04 (4.4e–05)	—	—	—
History of GDP growth volatility	—	–0.009 (0.022)	—	—	—	0.036 (0.005)	—	—
History of exchange rate volatility	—	—	0.029 (0.010)	—	—	—	0.024 (0.015)	—
History of unemployment	—	—	—	0.016 (0.008)	—	—	—	–8.2e–04 (0.005)
R-sq.	0.024	0.007	0.015	0.023	0.032	0.057	0.014	0.007
Number of groups	32	32	32	32	32	32	32	32
Number of obs.	32,266	32,266	32,266	32,266	29,566	29,566	29,566	29,566

NOTE: Name of dependent variable has L (R) extension if higher numbers mean more left (right). No Eecape–L: a dummy equal to 1 if the answer to the question "In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping? (1) They have a chance, or (2) There is very little chance" was category (2) and 0 if it was category (1). Business ownership-L: the response to the World Values question "There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? (1) The owners should run their business or appoint the managers, (2) The owners and the employees should participate in the selection of managers, (3) The government should be the owner and appoint the managers, (4) The employees should own the business and elect the managers." Business ownership-L was defined as a dummy equals 1 if the answer is category (3) or (4) and 0 if the answer is category (1) or (2). All regressions are cross-section (third wave) OLS regressions. Standard errors (adjusted for clustering) are in parentheses. The regressions include a set of personal controls which include age, gender, and income Ia (which is the respondent's declared income level as captured in the answer to the question "People sometimes describe themselves as belonging to the lower class, the middle class, or the upper class. How would you describe yourself?" Left-hand variables are constructed using the World Bank's World Development Indicators as follows. History of inflation volatility: average of the absolute value of the inflation (CPI) 1993–1997 (five years before the third wave of the WVS), using annual averages in percent. History of growth volatility: average of the absolute value of the GDP growth 1993–1997 (five years before the third wave of the WVS) using annual averages in percent. History of exchange rate volatility: average of the absolute value of the exchange rate growth 1993–1997 (five years before the third wave of the WVS) calculated using the official exchange rate (LCU per USD, annual average). History of unemployment: average of the absolute value of the unemployment rate 1993–1997 (five years before the third wave of the WVS) using annual averages (percentage of total labor force).

Table 13.2 Left-wing beliefs and dependence on oil rents: Panel regressions

Dependent variable: Right wing-R	(1)	(2)	(3)	(4)	(5)	(6)
Fuel exports	−0.010 (0.006)	—	—	—	—	—
Log fuel exports	—	−0.323 (0.092)	—	—	—	—
Ores exports	—	—	−0.065 (0.026)	—	—	—
Log ores exports	—	—	—	−0.466 (0.256)	—	—
Manufacturing exports	—	—	—	—	0.006 (0.004)	—
Log manufacturing exports	—	—	—	—	—	0.211 (0.204)
Adj. R-sq.	0.061	0.062	0.062	0.062	0.060	0.060
Between number of groups	24	24	24	24	24	24
Max number of groups	49	49	49	49	49	49
Number of obs.	79,251	79,251	79,251	79,251	79,251	79,251

NOTE: All regressions are OLS regressions and include country and year dummies. Dependent variable is right wing-R, a categorical variable that is the answer to the question "In politics people talk of the 'left and of the 'right.' In a scale where '0' is left and '10' is right, where would you place yourself?" and is obtained from the WVS. Fuel exports refers to "fuel exports as percentage of merchandise exports" and is obtained from the World Bank's World Development Indicators. Ores exports refers to "ores and metals exports as percentage of merchandise exports" and is obtained from the World Bank's World Development Indicators. Manufacturing exports refers to "manufactures exports as % of merchandise exports" and is obtained from the World Bank's World Development Indicators. Merchandise exports show the FOB value of goods provided to the rest of the world valued in U.S. dollars. They are classified using the Standard International Trade Classification. In particular, the World Bank figures distinguish between "merchandise exports" and "exports of services." Log variable name refers to the natural log of variable name. All regressions control for age, gender, and income Ia. For income Ia, the respondents declared income level as captured in the question "People sometimes describe themselves as belonging to the lower class, the middle class, or the upper class. How would you describe yourself?" Standard errors on fuel exports, log fuel exports, ores exports, log ores exports, manufacturing exports, and log manufacturing exports adjusted to take account of clustering within countries. Clustered standard errors in parentheses.

large influence in our results.[2] All standard errors are adjusted for clustering at the country level.

Column (1) reports a negative coefficient, significant at the 13 percent level, indicating a tendency to move left when fuel exports (as a percentage of merchandise exports) increase. Column (2) uses logs and reports a somewhat larger and considerably more precise coefficient on the dependence on oil (it is significant

at the 1 percent level). In terms of size, one standard deviation of log fuel exports is associated with a decline equal to 4.6 percent of a standard deviation in (right-wing) beliefs.

The rest of the table switches to other measures of income's dependence on luck in the country. Column (3) focuses on ores and metal exports as a percentage of merchandise exports. The coefficient is negative but insignificant. Column (4) uses logs, and finds a negative coefficient significant at the 8 percent level. In terms of size, one standard deviation of log ores exports is associated with a decline equal to 3.5 percent of a standard deviation in beliefs. Columns (5–6) present weaker results (but still with the expected sign) using manufacturing exports and its log.

Beliefs and Corruption

In table 13.3, we explore the relationship between ideological inclination and corruption. When corruption is widespread, the legitimacy of profits and business is called into question and individuals will be attracted to left-wing ideas, particularly in the economic sphere (see Di Tella and MacCulloch 2006). It uses a corruption variable as coded by experts working for Political Risk Services, a private international investment risk service. Introduced into economics by Knack and Keefer (1995), the International Country Risk Guide (ICRG) corruption index has been produced annually since 1982 and intends to capture the extent to which "high government officials are likely to demand special payments," and the extent to which "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans."

Column (1) in table 13.3 correlates the average ideological inclination in the country with the perceived corruption level, controlling for country and year effects. The coefficient is negative as expected and significant at the 3 percent level. In terms of size, we note that one standard deviation (within) in the ICRG corruption indicator is associated with a decline in a country's ideological inclination, right wing-R, equal to 3.7 percent of a standard deviation (within) of the ideological variable [$-0.037 = 0.42 \cdot (-0.19)/2.15$]. Column (2) shows that the same correlation using logs is weaker, as it is only statistically significant at the 10.5 percent level.

Beliefs and Crime

In table 13.4, we study the connection between crime and beliefs following Di Tella and MacCulloch (2006). Such a connection might be expected when,

Table 13.3 How left-wing beliefs vary with corruption: Panel regressions

Dependent variable: Right wing-R	(1)	(2)
Corruption	−0.190 (0.086)	—
Log corruption	—	−0.262 (0.157)
Adj. R-sq.	0.067	0.061
Between number of groups	25	25
Max number of groups	36	36
Number of obs.	66,144	66,144

NOTE: All regressions are OLS regressions and include country and year dummies. Dependent variable is right wing-R, a categorical variable that is the answer to the question "In politics people talk of the 'left and of the 'right.' In a scale where '0' is left and '10' is right, where would you place yourself?" and is obtained from the WVS. Corruption is obtained the ICRG. See Knack and Keefer 1995. Log corruption refers to the natural log of corruption. All regressions control for age, gender, and income Ia. For income Ia, the respondents declared income level as captured in the question "People sometimes describe themselves as belonging to the lower class, the middle class, or the upper class. How would you describe yourself?" Standard errors on corruption and log corruption adjusted to take account of clustering within countries. Clustered standard errors in parentheses.

for example, agents have incomplete information about the role of effort in the income-generating process, and the observation of crime informs agents about other people's view of how much it pays to work hard (which is probably low, given that they have chosen crime). Indeed, the two equilibriums in the Piketty (1995) model survive only as long as agents cannot observe how much effort others are putting in (and how much income they obtain). This requires that agents cannot reconstruct other people's information set from their choices in the labor market or in the political market, which is a somewhat artificial assumption given that vote outcomes and career choices are well-known. In order to test this hypothesis we need data on people's beliefs and on their view of how much crime there is (or on their experience as victims of crime).

Such data can be found in the Latinobarómetro, an annual public opinion survey of approximately nineteen thousand interviews in eighteen countries in Latin America. Questions of interest rotate, so the number of waves (and thus our sample size) varies considerably depending on the question being studied. It is produced by Latinobarómetro Corporation, an NGO based in Santiago. It has data on a number of attitudinal variables associated with ideological standing (on an economic dimension). From the long list we choose two that are suitable for our purposes. One concerns the fairness of the distribution of income and the other concerns how successful were privatizations. The exact data is fair-L and privatiz-L (see table 13.4 for the exact wording of the questions).

In columns (1–2) of table 13.4, we correlate these beliefs question with perception of crime, the answer to the question "Crime has increased or decreased?"

Table 13.4 How left-wing beliefs vary with crime: Panel regressions

	Latin America							
Dependent variables	(1) Fair-L	(2) Privatiz-L	(3) Fair-L	(4) Privatiz-L	(5) Fair-L	(6) Privatiz-L	(7) Fair-L	(8) Privatiz-L
Perception of crime	−0.283 (0.012)	−0.051 (0.005)	—	—	−0.237 (0.014)	−0.050 (0.005)	—	—
Real crime	—	—	−0.031 (0.009)	−0.011 (0.004)	—	—	−0.022 (0.011)	−0.010 (0.004)
Personal controls I	Yes	Yes	Yes	Yes	No	No	No	No
Personal controls II	No	No	No	No	Yes	Yes	Yes	Yes
Pseudo RSQ	0.082	0.045	0.072	0.044	0.105	0.045	0.099	0.042
Max no. of groups	17	17	17	17	17	17	17	17
Between no. g roups	17	17	17	17	15	17	15	17
Number of obs.	47,283	53,107	47,231	68,738	35,267	51,827	35,181	66,323

NOTE: Name of dependent variable has L (R) extension if higher numbers mean more left (right). All regressions are OLS regressions and include country and year dummies. All variables are obtained from the Latinobarómetro. Standard errors in parentheses. Perception of crime is a dummy that equals 0 if the answer to the question "Crime has increased or decreased?" is "Has increased a lot" and 1 if it is "Has increased a little," "Has stayed the same," "Has fallen a little," or "Has fallen a lot." Real crime is a categorical variable equal to 1 if the answer to the question "Have you or a relative of yours been a victim of an assault, an aggression, or a crime, in the last twelve months?" is "Yes" and 2 if the answer is "No." Personal controls I: age, gender and income Ib. Personal controls II: age, gender, income ib, and city size. Income Ib: the respondents declared income level as capture in the question "The wage or salary you receive and the total family income, does it allow you to satisfactorily cover your needs? In which of these situations are you?" The possible answers are "It is good enough, you can save," "It is just enough, without great difficulties," "It is not enough, you have difficulties," and "It is not enough, you have great difficulties." City size: the size/population of the city where the interview takes place. The two possible categories are 1 if "100,000 or less" and 2 if "capital or more than 100,000." Dependent variables are the answers to the questions:

Columns (1, 3, 5, 7) Fair-L: Now I'd like you some questions about the problem of poverty, in this country and in other countries: How fair do you think the distribution of income is in this country? The five possible answers are 1. Very fair; 2. Fair; 3. Neither fair nor unfair; 4. Unfair; and 5. Very unfair.

Columns (2, 4, 6, 8) Privatiz-L: Do you agree or disagree with the following statement: The privatization of public companies has been beneficial to the country. The two possible values are 1. I agree (if the answer to the question is: I completely agree or I agree); and 2. I disagree (if the answer to the question is: I completely disagree or I disagree).

The possible answers are coded such that it takes the value 0 if the answer is "Has increased a lot" and 1 if it is "Has increased a little," "Has stayed the same," "Has fallen a little," or "Has fallen a lot." We collapse the answers into two because, although there are five categorical answers to this question, the overwhelming majority chooses one option. The raw data show that 96,358 individuals selected the answer "Crime has increased a lot," while 14,610 say it has increased somewhat, 8,591 say it has stayed the same, 2,904 say it has dropped somewhat, and 439 say it has dropped a lot. We repeated the analysis using the five categories and all the results remain qualitatively similar. Both coefficients are negative as expected, and significant. Note that this is unlikely to reflect a fixed trait of the respondents because such a fixed characteristic is most likely ideological orientation: right-wing individuals are always complaining that crime is a terrible thing, and they tend to think that the distribution of income is fair. In this case the connection goes the opposite way, so, at least in this regard, it is an underestimate of the true effect. We also include a set of control variables that help ameliorate this concern, including age, gender, and income, as well as year and country fixed effects.

Columns (3–4) move to real crime as an independent variable, namely, whether the respondent (or a relative of the respondent) was a victim of crime over the previous year. Again, both coefficients are negative and comfortably significant. Now the potential confounding effect is not an ideological fixed effect but rather some omitted variable such as income, which determines that you are both the victim of crime and that you hold left-wing views. Columns (5–6) repeat the exercise with a broader set of controls. These include age, gender, dummies for city size, and all the previous explanatory variables, but using a new measure of each respondent's income. A person's declared income level is now captured by the question "The wage or salary you receive and the total family income, does it allow you to satisfactorily cover your needs? In which of these situations are you?" The possible answers are "It is good enough, you can save," "It is just enough, without great difficulties," "It is not enough, you have difficulties," and "It is not enough, you have great difficulties." The results are again supportive of the hypothesis that an experience with crime moved individuals to the left end of the political spectrum. In auxiliary regressions, we included controls for educational attainment, a person's ideological self-placement, and simultaneous controls for both measures of income, and obtained similar results.

Perceptions versus Reality

Having established that perceptions of corruption and crime affect ideological inclination, it is interesting to explore what drives these perceptions. Is it reality,

so that people's perception of corruption follows the fact that there is more corruption? Or is it that these perceptions are like "moods" that can be divorced from reality? In a recent paper, Olken (2006) shows that there can be a substantial divorce between reality and perceptions using Indonesian data.

One possible strategy is to evaluate whether the perception of a certain phenomenon is related strongly to the experience of that phenomenon, or the perception of a (presumably unrelated) phenomenon. In table 13.5 we present regressions for perception of corruption on real corruption. The coefficient is positive and significant, suggesting that reality does affect perceptions. Regression (2) includes year fixed effects and the coefficient remains unaffected. Regression (3) shows that when we include the perception and reality of a second phenomenon, crime, the coefficient on real corruption is almost halved and is now statistically insignificant. Interestingly, the coefficient on perception of crime is positive and statistically well defined (while real crime is uncorrelated with perception of corruption). Real crime is included as a reassurance that actual crime is being kept constant (although its inclusion does not affect the conclusions). The size of the coefficient is extremely large, suggesting that the role of perceptions (generally) is important, potentially overwhelming the impact of reality. To get a sense of the relative size, note that one standard deviation increase in real corruption is associated with an increase in perceived corruption equal to less than 1 percent of a standard deviation in that variable [$0.009 = (0.43/0.68) \cdot 0.015$]. In contrast, one standard deviation increase in perception of crime is associated with an increase in perception of corruption equal to 53 percent of a standard deviation [$0.53 = (0.74/0.68) \cdot 0.49$]. Real crime has virtually no effect (just over 1.4 percent in standardized units).

Regressions (5–6) repeat the exercise for Venezuela and reveal that the same phenomenon applies there. This suggests that perceptions of corruption (and of other "bads") are driven not by reality, but rather by some other force. We conjecture that this makes the electorate particularly receptive to "political activists" who supply beliefs, as in Glaeser's (2005) model of hatred.

The Case of Venezuela

We can apply the above results to the case of Venezuela. We first focus on the role of volatility of the economy. High levels of volatility may mean that the connection between effort and reward is lost. This may in turn affect people's (right–left) beliefs about the degree of regulation and taxation that is required for their society. Venezuela lies in the top quarter of the countries in our sample in terms of both

Table 13.5 How perceptions of corruption vary with real corruption, perception of crime, and real crime: Panel regressions

Dependent variable	Latin America				Venezuela	
Perception of corruption	(1)	(2)	(3)	(4)	(5)	(6)
Real corruption	0.028 (0.012)	0.028 (0.012)	0.015 (0.011)	0.015 (0.011)	0.069 (0.064)	0.068 (0.059)
Perception of crime	—	—	0.490 (0.007)	0.490 (0.007)	—	0.660 (0.044)
Real crime	—	—	0.011 (0.010)	0.011 (0.010)	—	−0.028 (0.054)
Year dummy	No	Yes	No	Yes	Year: 2001	Year: 2001
R^2 overall	0.009	0.010	0.217	0.220	0.036	0.211
Number of groups	17	17	17	17	—	—
Number of obs.	17,564	17,564	17,564	17,564	1,037	1,037

NOTE: All regressions are OLS regressions. Dependent variable is perception of corruption, a categorical variable equal to 1 if the answer to the question "Corruption has increased or decreased?" is "Has increased a lot," 2 if it is "Has increased a little," 3 if it is "Has stayed the same," 4 if it is "Has fallen a little," and 5 if it is "Has fallen a lot." Real corruption is a categorical variable equal to 1 if the answer to the question "Have you or a relative of yours been a victim of corruption in the last twelve months?" is "Yes," and 2 if the answer is "No." Perception of crime, a categorical variable, equals 1 if the answer to the question "Crime has increased or decreased?" is "Has increased a lot," 2 if it is "Has increased a little," 3 if it is "Has stayed the same," 4 if it is "Has fallen a little," and 5 if it is "Has fallen a lot." [Real crime is a categorical variable equal to 1 if the answer to the question "Have you or a relative of yours been a victim of an assault, an aggression, or a crime, in the last twelve months?" is "Yes" and 2 if the answer is "No." All regressions control for age, gender, income Ib, and right wing-R. Income Ib: the respondents declared income level as capture in the question "The wage or salary you receive and the total family income, does it allow you to satisfactorily cover your needs? In which of these situations are you?" The possible answers are "It is good enough, you can save," "It is just enough, without great difficulties," "It is not enough, you have difficulties," and "It is not enough, you have great difficulties." Right wing-R is the answer to the World Values question "In politics people talk of the 'left' and of the 'right.' In a scale where '0' is left and '10' is right, where would you place yourself?" Standard errors in parentheses.

inflation and unemployment volatility. An increase in inflation (unemployment) volatility from U.S. to Venezuelan levels explains 6.9 percent (24.8 percent) of the difference in leftist beliefs about the degree to which the poor have been treated unfairly, and 4.3 percent (21.0 percent) of the difference in leftist beliefs about the chances of escaping from poverty between these two nations (see tables 13.1a–b).

Another striking feature of Venezuela is its unusually high dependence on natural resources, in particular oil. To the extent that this country relies on abundant natural resources, becoming wealthy may be more associated with success in

capturing rents and belonging to the elite, rather than on working hard in competitive industries. Venezuela has the second highest level of fuel exports as a proportion of total merchandise exports across all the countries in our sample at 78.9 percent (the highest proportion is Nigeria). A high dependence on oil may also be one of the causes of the increased unemployment and inflation volatility discussed above (see Carruth, Hooker, and Oswald 1998). An increase in fuels as a proportion of total merchandise exports from U.S. to Venezuelan levels is predicted to push an individual toward having more leftist beliefs by 1.1 units on the 0–10 right–left scale (see table 13.2).

Turning to corruption, the International Country Risk Guide index places Venezuela in the bottom 13 percent of nations in our sample. An increase in the corruption index from U.S. to Venezuelan levels is predicted to push an individual toward having more leftist beliefs by 0.24 units on the 0–10 right–left scale (see table 13.3). We also noted earlier how higher observed crime rates may lead people to believe that effort exerted in legal labor market activities is not rewarding, thereby affecting their political beliefs. An increase from the lowest to the highest average measures of perception of crime recorded between 1995 and 2001 within Venezuela explains 15.4 percent of the range of leftist values, as measured by fairness of the distribution of income (see table 13.4).

Conclusions

The starting point of this chapter is the fact that the Venezuelan public has become more receptive to left-wing, populist, antimarket rhetoric. This chapter explores why. Our main explanation centers on the increased macroeconomic volatility stemming from the oil price shocks in the 1970s that led Venezuelans to view luck (rather than effort) as the reason behind economic success. Their heavy dependence on oil meant that internationally determined prices became an important driver of the economy, and led to a shift toward more leftist economic beliefs that favored the view that the poor were not to blame for their predicament and therefore should be helped by the government. In other words, the result of Venezuela's "resource curse" may have been a tendency for the people to become more left-wing as volatile oil prices in the 1970s ushered in an era of populist and interventionist policies that hampered the nation's post-1970s economic development.

More specifically, we use anecdotal evidence to focus on four phenomena that appear to be widespread in Venezuela: a history of macro volatility, an economic dependency on oil, a belief that corruption is widespread, and a belief that there

has been a crime wave in the country. These four phenomena are theoretically compatible with moving the electorate to the left, because macro volatility and oil dependency mean that luck is important relative to effort in the determination of income, because corruption erodes the legitimacy of business (see, e.g., Di Tella and MacCulloch 2006), and because widespread crime gives us information about how badly other people (criminals) fared in the labor market. The evidence is consistent with the hypothesis that beliefs are correlated with these forces.

Although this all points broadly in the direction of reality being an important factor in the formation of beliefs for some of the factors study (e.g., our data on oil dependency is from actual oil dependency), the data on corruption used in Di Tella and MacCulloch (2006) is based on the perception of corruption. Perceptions may sometimes be divorced from reality, as political players (like Hugo Chávez) can potentially affect the beliefs of the electorate (perhaps by attacking a political group for political gain). In an attempt to shed some light on the relative perception of reality, we run regressions of the perception of corruption on reality (personal experience with corruption) and on the perceptions of another phenomena (the perceptions of how much has crime increased), controlling for reality. We note that the perceptions of corruption are strongly correlated with the perceptions of this second phenomenon (the increase in crime) and have a much weaker connection with the personal experience with corruption or crime (reality).

APPENDIX: DESCRIPTION OF WORLD VALUES SURVEY

World Values Survey and European Values Survey (1981–1984, 1990–1992, 1995–1997)

The Combined World Values Survey is produced by the Institute for Social Research, based in Ann Arbor, Michigan. The series is designed to enable a cross-national comparison of values on a wide variety of norms, and to monitor changes in values and attitudes across the globe. Both national random and quota sampling were used. All the surveys were carried out through face-to-face interviews, with a sampling universe consisting of all adult citizens, aged eighteen and older, across more than sixty nations around the world. The 1981–83 survey covered twenty-two independent countries; the 1990–93 survey covered forty-two independent countries; the 1995–97 survey covered fifty-three independent countries. In total, sixty-four independent countries have been surveyed in at least one wave of this investigation (counting East Germany as an independent

country, which it was when first surveyed). These countries include almost 80 percent of the world's population. A fourth wave of surveys was carried out in 1999–2000. The following is the full set of countries and territories covered: Argentina, Armenia, Australia, Austria, Azerbaijan, Bangladesh, Belarus, Belgium, Bosnia–Herzegovina, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Czech Republic, Denmark, Dominican Republic, East and Unified Germany, Estonia, Finland, France, Georgia, Ghana, Hungary, Iceland, India, Ireland, Italy, Japan, Latvia, Lithuania, Macedonia, Madagascar, Mexico, Moldova, Montenegro, Moscow, The Netherlands, Nigeria, Northern Ireland, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Puerto Rico, Romania, Russia, Serbia, Slovak Republic, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Tambov Oblast, Turkey, Ukraine, Uruguay, United Kingdom, United States of America, and Venezuela.

Latinobarómetro

The Latinobarómetro Survey is an annual public opinion survey of approximately nineteen thousand interviews in eighteen countries in Latin America. Questions of interest rotate, so the number of waves (and thus our sample size) varies considerably depending on the question being studied. It is produced by Latinobarómetro Corporation, an NGO based in Santiago. It surveys development of democracies, economies, and societies; we are particularly interested in a number of attitudinal variables that are associated with ideological standing (on an economic dimension). Just like the WVS, it is designed to enable a cross-national comparison of values and norms on a variety of topics. As far as we can tell, a national random sampling were used, and the surveys were carried out through face-to-face interviews, with a sampling universe consisting of adult citizens, aged eighteen and older. The countries covered are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Spain, Uruguay, and Venezuela.

World Development Indicators (World Bank)

WDI Online is a data source on the global economy. It contains statistical data for more than six hundred development indicators and time series data from 1960 to 2004 (selected data for 2005) for more than two hundred countries and eighteen country groups. Data includes social, economic, financial, natural resources, and environmental indicators.

NOTES

1. The controls are chosen to keep constant some basic set of personal characteristics of the respondents that may affect beliefs (although these are country averages, so their influence in this particular case is marginal) without sacrificing sample size.

2. When we add gender as personal control in the regressions of table 13.2, Mexico's observations for the first wave are lost. This might be significant as Mexico is a gross outlier, with the largest reduction in dependence on fuel exports, all concentrated in the first two waves, and the largest decline in right-wing inclinations.

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