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Do pro-market economic reforms drive human rights violations? An empirical assessment, 1981–2006

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Abstract Liberals argue that economic policy reforms will benefit most in terms of better access to goods, less inflation and better economic opportunities. Critics of market reforms, among them Marxists, critical theorists, skeptics of globalization as well as a large portion of the NGO community, see the majority as losers from such reform, expecting resistance that would lead to political repression. They suggest that free-market policy reforms are analogous to "swallowing the bitter pill." We make use of the change in the Index of Economic Freedom as a measure of market liberalizing reforms, employing data from a panel of 117 countries for the period from 1981–2006. Our results show a strong positive association between reforms towards more free markets with regard to governments' respect for human rights, controlling for a host of relevant factors, including the possibility of endogeneity. The results are robust in relation to sample size, alternative data and methods, and a sample of only developing countries; and they are substantively quite large. Our results support those who argue that freer markets generate better economic conditions and higher levels of social harmony and peace, and it seems as if getting there is less problematic than people generally think—in fact, halfhearted measures and backsliding that prolong crises could be more dangerous to human rights.

Keywords Free-market economic reforms · Human rights · Endogeneity

1 Introduction

There is little consensus on whether or not economic policy reforms towards freer markets lead to violations of human rights (see Abouharb and Cingranelli 2009; Eriksen

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and de Soysa 2009).[1] This issue resurfaces in many of the debates related to growing globalization and the spread of neo-liberal policies and values (Martell 2010; Stilwell 2006). Several prominent observers hail the victory of free-market capitalism over its rivals as progress that promotes prosperity, social peace and democracy (Friedman 1962; Hayek 1944; Bhagwati 2004; Fukuyama 1991). Thus, countries at higher levels of economic freedom and change at higher rates are expected to have less social dissatisfaction and less state repression of dissent (Sen 1999). Skeptics of market reform, comprising scholars of critical political economy, neo-marxist scholars, a large portion of the NGO community, the anti-globalization movement, as well as some orthodox economists, voice concern over capitalistic policy choices for social justice and stability (Root 2008; Stiglitz 2002). They claim that free-market reforms are mostly undertaken by ruling elites for narrower aims, in which the rich reap all the gain and displace the pain of austerity and budget cuts on the poor and politically powerless. Therefore, the question of whether economic reform policies towards more free markets cause social dissent and disarray, measured as the level and degree of state violations of human rights, is an empirical one which we address by examining the association of the levels and rates of change towards more free-market policies and respect for human rights of individual citizens by their own states.

We employ a widely-used measure of economic policies that capture broad-based reform towards free markets, rather than only assessing whether or not there was intervention by International Financial Institutions (IFIs hereafter), which has generally been the norm for addressing this question (Abouharb and Cingranelli 2007, 2009). The problem with such an approach is the rather strong assumption that governments actually do implement market-oriented reforms suggested by the IMF, which some suggest is not the case (Boockmann and Dreher 2003). Our approach is a direct test of the mechanism that purportedly explains why interventions by IFIs increase human rights violations, which is that free-market economic policies that these institutions push lead to state repression of human rights. Our measure of "economic opening" therefore captures both endogenous economic changes, with and without interventions from outside, and regardless of the severity of political and economic crisis that generally require the IMF to be involved. Many countries, notably China and India, undertook far reaching economic reforms without much external intervention.

This study contributes to the existing literature in at least two very important ways. Firstly, most studies simply address the issue of liberalization and human rights by looking at the level of economic openness, which is typically measured as openness to trade and foreign investment (FDI) (see Hafner-Burton 2005). We make use of a comprehensive measure of the Fraser Institute's Economic Freedom Index as a proxy for the extent of market-economic policy reforms. Secondly, we explicitly address a number of causality issues because of possible endogeneity between the respect for human rights and free market reforms by estimating dynamic models, employing the GMM estimation method, and addressing the issue of direction of causality using Granger Causality tests. We employ panel data for 117 countries (95 Least Developing Countries and 22 OECD countries) over the period from 1981–2006 (26 years). The rest of the paper is structured as follows: Sect. 2

[1] We use the terms *political repression* and *violations of human rights* interchangeably because they essentially mean the same thing. In fact, the two most widely-used empirical indicators, the CIRI human rights database and the Political Terror Scale, are essentially based on information obtained from agencies such as the US State Department and Amnesty International reports. Thus, conceptions of political terror and the degree of respect for human rights are analytically and empirically very similar.

presents the various theoretical discussions around how market economic reforms and its progress can affect human rights within countries. Section 3 introduces the two dimensions of market reforms, human rights and their measurement. Section 4 discusses the method of estimation and data. We report empirical results in Sect. 5, and then conclude.

2 Why might reforms matter for human rights?

Economic reforms are usually wide-ranging changes to the existing regulatory, institutional and structural make up of an economy, and are aimed at increasing economic efficiency by promoting the privatization of markets, free competition and the strengthening of property rights. Reforms generate winners and losers, and the causes of reforms and their consequences are functions of the "political economy" within these societies and not entirely due to economic factors alone, or any particular direction of the reforms being undertaken (Alesina and Drazen 1991; Rodrik 1997). It is empirically and theoretically recognized that economic policy reforms may require strong political authority since losers from reform are likely to resist them, whether they are directed towards more free markets or away from them (Alesina et al. 2006; Haggard and Kaufman 1992). On the other hand, political rulers who generally control *de facto* political power are likelier to repress rather than reform if reforms towards more free markets, particularly granting stronger property rights, might undermine access to power and privilege in the future (Acemoglu and Robinson 2008). Others show that reforms were undertaken in many cases because there was general consensus about the necessity for reform because of the widespread recognition that the previous policies had failed (Armijo and Faucher 2002). Indeed, many suggest that the recent spread of neoliberal policies has occurred because of emulation (Simmons et al. 2004).

Clearly, the view on whether market reforms necessitate human rights violations or causes it is mixed, and it is not immediately obvious how the degree of human rights in a country relates to economic policies. As studies of human rights violations show, the rights of people are violated by governments when they are faced with serious social dissent (Poe 2004). Consequently, repression is one tool from a "menu of choices" available to policy makers for dealing with serious threats to socio-political stability. The degree of human rights violations in a country is therefore a relatively good proxy for capturing the level of social dissent serious enough to threaten the incumbents in power, and in many ways, an indirect measure of the degree and extent of societal grievances.[2]

The causal link between the economic reforms and human rights are offered by two competing theoretical traditions in political economy. First, the direct effects of economic liberalism on human rights can be traced back to Adam Smith's "The Wealth of Nations," which argued that people who are free from economic regulations and restraints will naturally solve collective dilemmas such as peace and security as if by use of a "hidden hand" (Smith 1776). Free markets encourage voluntary exchange and the allocation of goods according to supply and demand, whereas success and failure in the market is based on effort and talents rather than by privilege. These processes obtain harmony because the power to determine social outcomes largely rests with individuals and communities rather than states—in other

[2] Of course, we also acknowledge that mass violations of human rights may occur without the threat of serious dissent, but this is likely to be the exception rather than the rule.

words, respect for property rights leads to the dilution of state power and the empowerment of citizens, who are free to choose or exit with their assets (Stilwell 2006).

Freer markets, rather than privilege, help disperse economic resources, allowing those with economic power to offset the influence of those with political power (Iversen 2008). Political competition and market competition are complements because they both prevent monopoly (Hayek 1944; Friedman 1962). In Friedman's (1962: 10) words, "the kind of economic organization that provides economic freedom directly, namely, competitive capitalism, also promotes political freedom because it separates economic power from political power and in this way enables the one to offset the other." Moreover, markets are viewed as superior at allocating scarce resources relative to states, and the incentives operating in markets act powerfully to raise individual productivity and wealth (Bjørnskov and Foss 2008). Liberals argue that economic and political pathologies related to rent-seeking can have severe negative consequences for society, whereas competitive capitalism should bring wealth, justice and social harmony (de Soysa and Fjelde 2010; Mousseau and Mousseau 2008). As a result, countries engaged in economic policy reform are likely to be on the right path to greater affluence, more democracy and conditions generally preferred by ordinary people (Murphy et al. 1991; Berggren 2003; Gans-Morse and Nichter 2008).

Liberals also argue for indirect effects through positive outcomes of reforms on social and human capital development (Goldsmith 1997; Dawson 1998; Norton 2003; Gerring and Thacker 2008). Likewise, there is much evidence to suggest that internal conflicts in their various forms occur as a result of underdevelopment and lower economic growth (Collier et al. 2003; Hegre and Sambanis 2006). Amartya Sen (1996) contends that it is the friendlier economic policies, and not repressive political systems *per se*, that provide economic growth and development. Countries that make use of the opportunities provided by economic policy reforms will gain economically and solve problems related to underdevelopment and the lack of industrialization, which are factors that promote respect for human rights and the empowerment of people. However, if opening up to free markets requires repression, then economic growth might be still-born because instability and political repression could scuttle growth. Although there is quite a bit of evidence that shows a positive relationship between economic policy reforms towards more free markets and economic growth[3], several scholars, including some prominent economists, voice concern about the redistributional effects of economic policy reforms. They argue that reforms imposed by elites impose costs on the poor that can lead to "race to the bottom" effects which would increase social tensions, undermine democracy and entrap states in cycles of poverty and repression (Przeworski 1991; Rodrik 1994; Armijo et al. 1994; Haggard and Kaufman 1995). Nevertheless, others argue that bad policies are purposely followed by political elites because bad policies are good politics that help the elites maintain their powers and privileges, which can lead to self-sustaining poverty traps (Acemoglu and Robinson 2008).

There is no doubt that reforms create winners and losers, and who actually dissents and for what reasons—whether socially beneficial or harmful—is generally unclear, but one might assume that repression is highest where the losers are many and the winners are small.

[3]Prominent studies such as: Easterly and Levine (1997), Ayal and Karas (1998), Gwartney et al. (1999), de Haan and Sturm (2000), Carlsson and Lundstrom (2002), Scully (2002), Dawson (2003), de Haan et al. (2006), Doucouliagos and Ulubasoglu (2006), Justesen (2008) have all examined the impact of economic freedom and economic growth. All the studies, including the meta-data study by Doucouliagos and Ulubasoglu (2006), find strong positive effects between economic freedom and economic growth with different samples, countries and periods. See Rodriguez and Rodrik (2001) for the other side of the debate.

Rodrik (1994) argues that the consequences of neoliberal policies often involve a redistribution of income among different groups. If the efficiency gains from neoliberal policies are not substantial and income is not redistributed properly, this may lead to widespread agitation for resisting the required policy changes. Others see economic liberalization causing problems due to the short-term hardships borne by some (Gans-Morse and Nichter 2008). Those directly hurt by austerity measures may take their anger to the streets, often resulting in strikes and riots that states respond to with repressive measures. Many scholars argue that these destabilizing effects pose a threat to democratic institutions, thereby ultimately leading to human rights repression (Przeworski 1991). Clearly, the net effect of economic policy reforms on human rights violations is theoretically and empirically ambiguous. Thus, we test the following hypothesis:

Ceteris paribus, countries moving towards freer economic policies will experience higher violations of human rights.

3 Measuring human rights and market-economic policy reforms

We use the Cingranelli and Richards (2006) Human Rights Data (CIRI) measuring the degree of government respect for Physical Integrity Rights (PIR hereafter). These data contain annual coverage from 1981 to 2008 for 195 countries. The sources of information used for coding the index are from both the US State Department's annual country reports on human rights practices and from Amnesty International's annual reports.[4] The "integrity of physical rights" deals with the abuses that physically harm people such as torture, disappearances, imprisonment for political beliefs and political murder. The PIR index contains information about the pattern and sequence of government respect for physical integrity rights in addition to the level of severity. Here, the pattern is defined as "the association of different levels of government respect for several physical integrity rights with a single, overall scale score" (Cingranelli and Richards 1999). Sequence is defined as "the order in which governments have a propensity to violate particular physical integrity rights" (Cingranelli and Richards 1999). Naturally, some forms of violations, such as political murder and torture, are more serious than others, such as imprisonment. The PIR index is based on the human rights practices of governments and any of its agents such as police or paramilitary forces. The index is an additive index constructed from observations on torture, extrajudicial killing, political imprisonment and disappearances. It ranges from 0, meaning no government respect for these four human rights to 8, or full government respect for physical integrity rights.

Our main independent variable is market reforms. Previous studies addressing the issue of market economic policy reforms have used proxies, such as a dummy variable capturing the date on which the country liberalized its economy, or a composite index made from several dummy variables on capital account and current account restrictions (Asiedu and Lien 2004). Others have used trade openness and the level of FDI in an economy. These single indicators only capture very specific aspects of economic policy reforms. Major upheavals to the social and economic order of a country possibly occur because of broader changes that include the privatization of business and regulatory laws covering labor and wages, the state of property rights enforcement, real and potential trade openness and the extent of government involvement in the economy.

[4]For more on the construction of the dataset and coding rules, see the CIRI Human Rights Data project at: http://ciri.binghampton.edu/documentation.asp.

Following Dreher et al. (2009), we consider the Fraser Institute's Economic Freedom Index (EFI hereafter) constructed by Gwartney and Lawson (2008) as a proxy for policy reforms. These data are available in five-year intervals for the period from 1970–2000, and on a yearly basis thereafter. The EFI is a comprehensive measure comprised of five sub-indices capturing: expenditure and tax reforms; property rights and legal reforms; trade reforms; reforms related to access to sound money; labor, business and credit reforms. These five sub indices are roughly comprised of 35 components of objective indicators. Each variable in the respective sub-indices was transformed to an index on a scale from 0 to 10. When higher values of the original variable indicated a higher degree of freedom, the formula $[(V_i - V_{\min})/V_{\max} - V_{\min})] \times 10$ was used for the transformation. Conversely, when higher values indicated less freedom, the formula was $[(V_{\max} - V_i)/V_{\max} - V_{\min})] \times 10$. The sub-component indices were then averaged to determine each component. The component indices within each area are averaged to derive the indices for each of the five sub-indices. In turn, the five sub-indices are averaged to derive the summary index for each country. The final index is then ranked on a scale of 0 (not free) to 10 (totally free).

Another way of interpreting this would be that the value of 0 denotes the absence of state regulations, or a state failure to provide these public goods, while 10 denotes the highest level in a highly competitive market economy. Hence, a higher index implies a higher degree of market conformity. Finally, the missing years between the reported quintiles for this variable are interpolated. Since the score on EFI changes slowly between the five-year periods, the interpolated values should not be problematic. The detailed description on EFI is captured in Appendix 1. However, unlike Dreher et al. (2009) and Bjørnskov and Foss (2008), we also make use of $\boldsymbol{\Delta}$ reforms (henceforth) denoting the year-to-year growth in the overall index of market-economic conformity (i.e. EFI), which in fact captures the degree to which reforms occurred. A positive value of $\boldsymbol{\Delta}$ reforms indicates a movement towards more free market policies, whereas a negative value would be a move towards more autarky. In other words, the $\boldsymbol{\Delta}$ reforms capture the new policy decisions taken by the state and not necessarily the accumulation of reforms over the years, which we also control for in our models because countries at very low levels are more likely to have higher rates of change and vice versa.

4 Data and method

We analyze a time-series cross-section dataset (TSCS) containing 117 countries covering the years from 1981 to 2006 (see Appendix 2). The available number of countries and the coverage over time are entirely dependent on the availability of the EFI measure and CIRI data on human rights. Since the EFI is not available for all countries for all years, our dataset is unbalanced. The model to be estimated is specified as:

$$PIR_{it} = \phi_1 + \psi_2 PIR_{it-1} + \psi_3 H_{it} + \psi_4 Z_{it} + \upsilon_t + \omega_{it} \tag{1}$$

where, PIR_{it} is the Physical Integrity Rights index for country $\boldsymbol{i}$ at year $\boldsymbol{t}$. H_{it} captures the hypothesis variable(s), namely $\boldsymbol{\Delta}$ reforms and EFI, and Z_{it} includes the vector of control variables. $\boldsymbol{\upsilon}_t$ are time dummies and $\boldsymbol{\omega}_{it}$ is the error term for country $\boldsymbol{i}$ at time $\boldsymbol{t}$. Following others, we also include lagged dependent variables (PIR_{it-1}). There are two reasons for the inclusion of a lagged dependent variable. First, it fixes problems associated with autocorrelation and model dynamic effects of the X variables on Y (Poe and Tate 1994; Beck and Katz 1995; Wilson and Butler 2007). Second, it is theoretically plausible that bureaucratic

decisions associated with the organs of state repression use past decisions to decide whether to repress or not in present circumstances, so this behavior can be quite sticky (Poe et al. 1999; Neumayer 2005). Hence, we also estimate all our models with a lagged dependent variable.

The vector of control variables (Z_{it}) includes other potential determinants of human rights which we obtain from the extant literature on the subject. We follow the pioneering studies of Poe and Tate (1994), Poe et al. (1999) and other comprehensive evaluations of these early studies on the determinants of repression (Landman 2005). Accordingly, the models control the effects of development by including per capita income (logged) in USD constant prices and the economic growth rates obtained from the Economic Research Service (ERS) International Macroeconomic 2008 dataset, Washington DC.[5] Since economic reforms are more likely to be peaceful when countries are richer and enjoying higher growth rates, we control for this. Following others (Landman 2005), we include the log of total population (ERS 2008). Large countries will generally have more dissent and are harder to govern. As a matter of fact, country size is one of the most robust predictors of civil war and political repression (Hegre and Sambanis 2006; Landman 2005). To measure the nature of the political regime in power, we included a measure of regime type using the Polity IV data (Marshall and Jaggers 2002). Democracies are less likely to use repression as a policy tool. We subtract the autocracy score from the democracy score, as is standard when using the Polity data. The democracy score ranges from +10 (full democracy) to −10 (full autocracy).

Additionally, we account for the degree of ethnic fractionalization sourced from Fearon and Laitin (2003) since some claim that ethnic difference can lead to social frictions that generally discourage good economic policies (Easterly 2006).[6] Naturally, an ongoing civil war is likely to affect both the degree of state repression and the degree of reform. We include a variable measuring civil war that takes the value 1 if there is armed conflict between an organized group and a state in which at least 25 deaths have occurred in a single year and 0 otherwise (Gleditsch et al. 2002). We also include the count of the number of years of civil peace so as to distinguish between immediate post-war situations and others (Gleditsch et al. 2002). In addition to these variables, we include oil export dependency, which is independently related to repression due to the so-called "resource curse" (Ross 2001; de Soysa and Binningsbo 2009). Oil wealth is a dummy taking the value 1 if oil exports exceed one-third of export revenue, and 0 if not. Finally, the legal heritage of countries is likely to matter. We include dummy variables, which take the value 1 separately if the country's legal heritage originates from one of the following: British, Socialist, French, German and Scandinavian, and 0 otherwise (La Porta et al. 1998). For more details on the data, see the data sources in Appendix 3. The descriptive statistics are presented in Appendix 4.

The baseline models are estimated using ordered probit with time dummies, in addition to the pooled OLS method (POLS henceforth). The pooled data are susceptible to having highly correlated data between and across panels that could lead to highly optimistic standard errors (Beck and Katz 1995). We use the Newey-West method which allows us to compute an AR1 process for autocorrelation and obtain Huber-White corrected robust standard errors that are robust to heteroscedasticity (Newey and West 1987). With both these

[5] We use the ERS dataset to maximize the number of observations in our dataset. The results do not change dramatically when using the per capita GDP data sourced from the World Development Indicator 2008 (World Bank 2008).

[6] For dissenting views on ethnic fractionalization and economic outcomes, see Collier (2001) and de Soysa (2011).

methods (Ordered probit and Newey-West POLS), we do not include any country fixed effects because some of the variables (ethnic fractionalization and legal heritage, etc.) are "time invariant." The usage of two-way fixed effects will not only be collinear with time-invariant or largely time-invariant regressors, but will also generate biased estimates (Beck 2001). However, we drop the time-invariant variables from our models and perform two-way POLS fixed effects because accounting for unit (country) heterogeneity is an additional robustness check since TSCS results can be sensitive to specification (Wilson and Butler 2007). We estimate the Huber-White corrected robust standard errors, which is a method robust to heteroscedasticity and serial correlation (Wiggins 1999).

4.1 Endogeneity concerns

It is quite possible that our key explanatory variables—**Δ** reforms and EFI—are endogenous to having less human rights violations. That is, it might be governments committed to respecting human rights that reform in the first place. For example, the expectation of political or regime instability arising out of dissent and uprising could deter new policy initiatives to be introduced by the government that, among other things, eases restrictions on economic freedom. Improvement in human rights performance of the states may also spur increases in economic policy reforms initiated by the government. Not taking this endogeneity into account would induce bias in our estimate of the effect of policy reforms and EFI on human rights. This issue is not trivial because those who argue that repression is required for free-market reforms make causal claims about reforms leading to repression. Nevertheless, to determine the direction of causality we use a dynamic model of Granger Causality (Granger 1969). Accordingly, the variable x is said to "Granger cause" a variable y if the past values of the x help explain y, once the past influence of y has been accounted for (Engle and Granger 1987). We follow Dreher and Siemers (2009) to account for Granger Causality in a panel setting as:

$$y_{it} = \sum_{j=1}^{\rho} \psi_j y_{i,t-j} + \sum_{j=1}^{\rho} \xi_j x_{i,t-j} + \delta_i + \zeta_t + \omega_{it} \tag{2}$$

where, the parameters are denoted as: $\psi_{i,t}$ and $\xi_{i,t}$ for country i during the year t, the maximum lag length is represented by ρ. While δ_i is unobserved individual effects, ζ_t is unobserved time effects. ω_{it} denotes the error term. Under the null hypothesis, the variable x is assumed to not Granger cause y, while the alternative hypotheses allow for x to Granger cause y after controlling for past influence of the variable y. Joint F-statistics are used to gauge the joint significance of PIR on **Δ** reforms and EFI.

After rejecting the null hypothesis of no endogeneity, we control for this by replicating the baseline models using the system-GMM estimator as suggested by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998). We are not aware of an IV estimator for an ordinal score dependent variable when the error term is serially correlated and heteroscedastic. We therefore follow Miguel et al. (2004) and Eichengreen and Leblang (2008) in estimating linear ordered probability models, which provide consistent estimates. The dynamic panel GMM estimator exploits an assumption about the initial conditions to obtain moment conditions that remain informative even for persistent data, which is considered most appropriate in the presence of endogenous regressors. The results are based on the two-step estimator implemented by Roodman (2006) in Stata 11. The two-step GMM estimator weights the instruments asymptotically by efficiently using the first-step estimates. Because our sample is large enough, we do not face the problem of under estimated standard errors (Arellano and Bond 1991). We apply the Sargan-Hansen test on the

Table 1 Causality tests on economic freedom index and human rights

Variables	(1) PIR	(2) PIR	(3) PIR	Variables	(1) EFI	(2) EFI	(3) EFI
Physical integrity rights ($t-1$)	0.487***	0.395***	0.352***	Economic freedom index ($t-1$)	0.948***	1.263***	1.181***
	(0.0196)	(0.0224)	(0.0234)		(0.00753)	(0.0375)	(0.0399)
Physical integrity rights ($t-2$)		0.153***	0.108***	Economic freedom index ($t-2$)		−0.333***	−0.0959
		(0.0223)	(0.0247)			(0.0356)	(0.0630)
Physical integrity rights ($t-3$)			0.120***	Economic freedom index ($t-3$)			−0.171***
			(0.0224)				(0.0390)
Economic freedom index ($t-1$)	0.233***	0.261*	0.159	Physical integrity rights ($t-1$)	0.0105***	0.00709***	0.00579**
	(0.0465)	(0.156)	(0.159)		(0.00219)	(0.00242)	(0.00242)
Economic freedom index ($t-2$)		−0.0838	0.0900	Physical integrity rights ($t-2$)		0.00207	0.00126
		(0.153)	(0.242)			(0.00255)	(0.00272)
Economic freedom index ($t-3$)			−0.133	Physical integrity rights ($t-3$)			0.000996
			(0.157)				(0.00228)
Joint F-statistics	25.03***	7.36***	2.51*	Joint F-statistics	22.91***	7.57***	3.26***

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

validity of the instruments used (amounting to a test for the exogeneity of the covariates) and the Arellano-Bond test of second order autocorrelation, which must be absent from the data in order for the estimator to be consistent. We treat the lagged dependent variable and our measures of **Δ** reforms and EFI as endogenous and all other variables as strictly exogenous. Thus, EFI and **Δ** reforms are lagged by two years.[7] As before, we include time dummies in the GMM regressions. In order to minimize the number of instruments in the regressions, we collapse the matrix of instruments as suggested by Roodman (2006).

5 Results

We begin with the Granger Causality tests (Tables 1 and 2). The null hypothesis in set 1 can be easily rejected at lag lengths from one to three (see Table 1). However, at lag two, the joint F-statistics, though significant at the 5% level, is down to the 10% level at three lags. The results do remain constant at the 10% level when we introduce one more lag structure into set 1. The joint F-statistic is strongly significant at the 1% level in column 1 of set 1 in Table 1. In set 2, we clearly find that there is reverse causality flowing from PIR to EFI at all three lag structures, with joint significance at the 1% level (see Table 1). The null hypothesis that human rights have no effect on economic freedom can therefore be rejected for lag length one to three. In Table 2, we find that at lag one and three there is a significant positive

[7] As a further robustness check, we used different versions of lagged values for EFI and **Δ** reforms. We lagged both variables by one and three years for both the global sample and the sample of LDCs, and the results remained unchanged.

Table 2 Causality tests on market-economic policy reforms and human rights

Variables	(1) PIR	(2) PIR	(3) PIR	Variables	(1) Reforms	(2) Reforms	(3) Reforms
Physical integrity rights ($t-1$)	0.507***	0.400***	0.356***	Economic reforms ($t-1$)	0.380***	0.311***	0.285***
	(0.0194)	(0.0224)	(0.0233)		(0.0397)	(0.0436)	(0.0442)
Physical integrity rights ($t-2$)		0.166***	0.111***	Economic reforms ($t-2$)		0.116***	0.0572
		(0.0224)	(0.0247)			(0.0426)	(0.0504)
Physical integrity rights ($t-3$)			0.122***	Economic reforms ($t-3$)			0.0946**
			(0.0224)				(0.0482)
Economic reforms ($t-1$)	1.632*	0.571	0.433	Physical integrity rights ($t-1$)	0.000351	0.000444	0.000340
	(0.854)	(0.885)	(0.860)		(0.000386)	(0.000484)	(0.000495)
Economic reforms ($t-2$)		1.178	−0.0946	Physical integrity rights ($t-2$)		−0.000686	−0.000376
		(0.859)	(0.880)			(0.000504)	(0.000559)
Economic reforms ($t-3$)			2.467***	Physical integrity rights ($t-3$)			−0.00102**
			(0.850)				(0.000464)
Joint F-statistics	3.65***	1.65	3.34**	Joint F-statistics	0.83	0.95	2.41*

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

impact of changes in the economic freedom index (**Δ** reforms) on human rights. However, the null hypothesis that human rights have no effect on economic reforms cannot be rejected for lag length one and two, but only at lag length three. Consequently, the purely statistical test addressing causality suggests that positive changes in economic reforms "cause" human rights to improve but reveals little effect from the other way around. In fact, the result from higher human rights to higher economic freedom is weakly negative.

Next, we move to dynamic models that allow us to control for other relevant intervening factors. In Table 3, column 1, we find that **Δ** reforms (annual change in the economic freedom scores) have a statistically significant positive impact on PIR, net of all the controls. The positive effect suggests that movement towards more free markets reduces the level of violations of physical integrity rights. These results are robust to the inclusion of a lagged dependent variable. The positive and statistically significant effect of free market economic reforms is robust to entering region dummies (see column 1 in Table 3). These results are upheld when including regional dummies in column 2. When we drop the time-invariant variables in column 3 by including country and time effects, the relationship between **Δ** reforms and PIR is still positive. Notice that the level of economic freedom (accumulated reforms) shows a robustly positive association with rights across the columns, thereby signifying that even when change towards more free markets are accounted for, the level of free market policies has a strong positive effect on rights, net of several important control variables, such as income per capita and the level of democracy. Thus, even if countries may have short-term pain from reforms in some cases, they may be worth undertaking in order to reach higher levels of economic freedom for obtaining social peace (de Soysa and Fjelde 2010; Mousseau and Mousseau 2008). We will come back to the issue of measuring substantive effects later. Overall, the results are in line with the basic argument put forth by Amartya

Table 3 Effects of EFI and market-economic reforms on human rights, 1981–2006 (Global sample)

Variables	(1) PIR ordered probit	(2) PIR ordered probit	(3) PIR ordered probit	(4) PIR Newey-West	(5) PIR Newey-West	(6) PIR fixed effects
Constant				1.731***	2.121***	3.615
				(0.265)	(0.340)	(4.445)
Lagged dependent variable	0.546***	0.517***	0.378***	0.620***	0.590***	0.408***
	(0.0173)	(0.0177)	(0.0201)	(0.0163)	(0.0175)	(0.0303)
Economic freedom index	0.144***	0.160***	0.171***	0.146***	0.167***	0.183***
	(0.0311)	(0.0319)	(0.0452)	(0.0312)	(0.0321)	(0.0573)
Economic reforms	1.803***	1.879***	1.840***	2.062***	1.975***	1.878**
	(0.682)	(0.681)	(0.714)	(0.742)	(0.743)	(0.847)
Per capita GDP (log)	0.128***	0.0595**	0.0445	0.126***	0.0634**	−0.0278
	(0.0249)	(0.0298)	(0.150)	(0.0247)	(0.0307)	(0.220)
Per capita GDP growth rate	0.00090	0.0018	0.0011	0.00136	0.0016	0.0016
	(0.0066)	(0.0065)	(0.0066)	(0.0078)	(0.0077)	(0.0084)
Population (log)	−0.0995***	−0.123***	0.284	−0.114***	−0.123***	−0.104
	(0.0138)	(0.0157)	(0.287)	(0.0149)	(0.0170)	(0.401)
Democracy	0.0227***	0.0300***	0.0498***	0.0203***	0.0279***	0.0394***
	(0.00403)	(0.00486)	(0.00739)	(0.00411)	(0.00512)	(0.0113)
Oil exports/GDP dummy	−0.160**	−0.0847	−0.142	−0.230***	−0.189***	−0.0865
	(0.0683)	(0.0694)	(0.155)	(0.0704)	(0.0724)	(0.218)
Conflicts	−0.755***	−0.860***	−1.009***	−0.988***	−1.066***	−1.176***
	(0.0740)	(0.0753)	(0.0944)	(0.0806)	(0.0827)	(0.161)
Civil peace years	0.00324**	0.000730	0.00226	0.00295**	0.00131	0.00576
	(0.00144)	(0.00152)	(0.00283)	(0.00147)	(0.00156)	(0.00377)
Ethnic fractionalization	0.341***	0.172		0.339***	0.185*	
	(0.102)	(0.118)		(0.101)	(0.111)	
British legal heritage	−0.792***	−0.549***		−0.289***	−0.143**	
	(0.141)	(0.144)		(0.0662)	(0.0660)	
Socialist legal heritage	−0.358**	−0.114		0.158*	0.225*	
	(0.155)	(0.184)		(0.0946)	(0.136)	
French legal heritage	−0.707***	−0.429***		−0.223***	−0.0621	
	(0.140)	(0.144)		(0.0647)	(0.0632)	
German legal heritage	−0.596***	−0.476***		−0.0787	−0.0217	
	(0.176)	(0.178)		(0.111)	(0.108)	
OECD region dummy		0.775***			0.461***	
		(0.133)			(0.131)	
MENA region dummy		0.305**			0.267**	
		(0.122)			(0.130)	
Europe region dummy		0.317**			0.301*	
		(0.156)			(0.165)	

(*continued on the next page*)

Table 3 (*Continued*)

Variables	(1) PIR ordered probit	(2) PIR ordered probit	(3) PIR ordered probit	(4) PIR Newey-West	(5) PIR Newey-West	(6) PIR fixed effects
South East Asia region dummy		0.254*			0.128	
		(0.134)			(0.136)	
South Asia region dummy		0.0563			−0.103	
		(0.158)			(0.164)	
Sub-Saharan Africa region dummy		0.266**			0.185	
		(0.126)			(0.131)	
Latin America and Caribbean dummy		−0.0868			−0.144	
		(0.106)			(0.110)	
Pseudo R^2	0.327	0.3351	0.3717			
Log pseudo likelihood	−3911.7	−3864.4	−3651.9			
R-squared						0.7503
F-statistics				330.6***	390.5***	30.44***
Time dummies	YES	YES	YES	YES	YES	YES
Country dummies	NO	NO	YES	NO	NO	YES
Number of countries	115	115	115	115	115	115
Total observations	2746	2746	2746	2746	2746	2746

Notes: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Sen (1999) and Hayek (1944) on the importance of economic freedom for social progress, although our results also show no contradiction between moving towards more free markets and the deterioration of human rights.

The results of OLS regressions with Newey-West standard errors and two-way OLS fixed effects are presented in columns 4–6 in Table 3. As seen there, the results remain the same as those reported for ordered probit regressions. The effect of free market reforms is positive on the government respect for human rights. A standard deviation increase in reforms would raise respect for human rights by roughly 39% of a standard deviation of the PIR index (columns 4 and 5). The impact from a maximum change of 180% on reforms could increase the PIR by 160% of a standard deviation, or 3.84 points, which is close to half the scale and certainly no small matter. The accumulated level of economic freedom also has a non-negligible effect, in which a standard deviation increase in the level of economic freedom would increase respect for human rights by roughly 19% of a standard deviation, and by almost 63% of a standard deviation of the PIR at the maximum value of economic freedom, net of all the other variables in the model. The somewhat lower impact of the level is not surprising since changes from lower to higher levels of economic freedom should yield a much higher impact than what might be expected when countries are already at high levels. In any case, because of the close association of wealth and democracy with economic freedom levels, the indirect effects are likely to be large. These results remain robust to the inclusion of regional dummies and two-way fixed effects estimations, in which the time-invariant variables drop out (columns 5 and 6; Table 3).

Table 4 demonstrates that the effect of reforms and EFI also matters when we only test a sample of 87 developing countries. In all columns, irrespective of the estimation techniques, both **Δ** reforms and EFI are significantly different from zero at the 1% level (see Table 4). In the developing countries only sample we find very similar substantive effects, which are in fact slightly increased in magnitude. These results remain robust to the inclusion of two-way OLS fixed effects regressions (see column 6, Table 4). Given that the results in both tables are net of the indirect effects through per capita income and the level of democracy, the total substantive impact of free market economic reforms on human rights seems quite substantial.

Interestingly, with the ordered probit, the Newey-West OLS and two-way fixed effects regressions, the control variables are consistent with those reported by others. There is a positive relationship between economic development (per capita GDP) and human rights. Increases in the level of income raises the cost of dangerous dissent and reduces the power of states to use repression as a viable policy tool. Although the results on the rate of economic growth are positive, they remain largely insignificant. Like others, we find that large countries have higher violations of rights. This effect is consistent across the methods displayed in all models in both samples. Contrary to many arguments about the effects of high ethnic fragmentation on social friction, we find significant positive effects of ethnic fractionalization on human rights in all the methods, which produces results that are consistent with those who argue that high fractionalization makes countries safer (de Soysa 2009, 2011; Landman and Larizza 2009). Conflicts cause higher violations of human rights, as others also report (Poe and Tate 1994; Poe et al. 1999; Dreher et al. 2010).

Likewise, the greater the years of civil peace, the lower the incidence of human rights abuse. With respect to legal heritage relative to Scandinavian legal origin, we find that other legal systems display negative signs. Oil exporters show higher levels of human rights abuses

Table 4 Effects of EFI and market-economic reforms on human rights, 1981–2006 (developing countries sample)

Variables	(1) PIR ordered probit	(2) PIR ordered probit	(3) PIR ordered probit	(4) PIR Newey-West	(5) PIR Newey-West	(6) PIR fixed effects
Constant				1.978***	2.102***	−0.332
				(0.339)	(0.385)	(5.409)
Lagged dependent variable	0.516***	0.505***	0.379***	0.606***	0.591***	0.418***
	(0.0183)	(0.0186)	(0.0211)	(0.0182)	(0.0189)	(0.0326)
Economic freedom index	0.118***	0.121***	0.152***	0.138***	0.146***	0.189***
	(0.0322)	(0.0334)	(0.0468)	(0.0343)	(0.0357)	(0.0613)
Economic Reforms	2.056***	2.099***	1.977***	2.396***	2.347***	2.097**
	(0.699)	(0.705)	(0.746)	(0.793)	(0.805)	(0.920)
Per capita GDP (log)	0.0860***	0.0842***	0.00829	0.0926***	0.0833**	−0.0194
	(0.0277)	(0.0310)	(0.161)	(0.0294)	(0.0333)	(0.242)
Per capita GDP growth rate	0.00205	0.00157	0.000683	0.00252	0.00194	0.00128
	(0.00674)	(0.00671)	(0.00672)	(0.00842)	(0.00833)	(0.00881)
Population (log)	−0.104***	−0.104***	0.311	−0.123***	−0.120***	0.306
	(0.0156)	(0.0165)	(0.345)	(0.0183)	(0.0191)	(0.519)

(*continued on the next page*)

Table 4 (*Continued*)

Variables	(1) PIR ordered probit	(2) PIR ordered probit	(3) PIR ordered probit	(4) PIR Newey-West	(5) PIR Newey-West	(6) PIR fixed effects
Democracy	0.0154***	0.0256***	0.0400***	0.0160***	0.0265***	0.0358***
	(0.00408)	(0.00532)	(0.00784)	(0.00434)	(0.00584)	(0.0120)
Oil exports/ GDP dummy	−0.126*	−0.140*	−0.0539	−0.193**	−0.213***	−0.00369
	(0.0696)	(0.0722)	(0.163)	(0.0771)	(0.0803)	(0.211)
Conflicts	−0.864***	−0.882***	−1.032***	−1.078***	−1.090***	−1.223***
	(0.0766)	(0.0781)	(0.0969)	(0.0885)	(0.0899)	(0.171)
Civil peace years	0.000325	0.000959	0.00121	0.00163	0.00234	0.00369
	(0.00172)	(0.00173)	(0.00332)	(0.00189)	(0.00191)	(0.00445)
Ethnic fractionalization	0.334***	0.195		0.364***	0.233*	
	(0.109)	(0.131)		(0.121)	(0.138)	
British legal heritage	−0.0695	−0.142**		−0.0813	−0.147**	
	(0.0538)	(0.0622)		(0.0589)	(0.0694)	
Socialist legal heritage	0.381***	0.168		0.397***	0.162	
	(0.0922)	(0.130)		(0.104)	(0.148)	
French legal heritage						
German legal heritage						
OECD region dummy						
MENA region dummy		0.265*			0.216	
		(0.138)			(0.155)	
Europe region dummy		0.305*			0.281	
		(0.161)			(0.179)	
South East Asia region dummy		0.290**			0.179	
		(0.147)			(0.158)	
South Asia region dummy		0.0378			−0.0763	
		(0.167)			(0.182)	
Sub-Saharan Africa region dummy		0.231*			0.140	
		(0.135)			(0.148)	
Latin America and Caribbean dummy		−0.0836			−0.169	
		(0.115)			(0.127)	
Pseudo R^2	0.2735	0.2761	0.3089			
Log pseudo likelihood	−3206.7	−3194.9	−3050.2			
R-squared						0.379
F-statistics				173.3***	160.7***	29.92***
Time dummies	YES	YES	YES	YES	YES	YES
Country dummies	NO	NO	YES	NO	NO	YES
Number of countries	87	87	87	87	87	87
Total observations	2074	2074	2074	2074	2074	2074

Notes: Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

than non-oil exporters. This result is consistent with the findings of Ross (2004) and de Soysa and Binningsbø (2009), who argue that oil exporters have high levels of social dissent and are likely to maintain autocratic regimes. As expected, democracy proved very important for human rights. In all the models irrespective of estimation technique, democracy is positively associated with less human rights violations. Interestingly, our main results on **Δ** reforms and EFI demonstrated a net positive effect on basic human rights despite the inclusion of several statistically significant controls.

Next, we examine our models, controlling for possible endogeneity between human rights, **Δ** reforms and EFI. As discussed earlier, we make use of the System GMM method to control for reverse causality (Table 5). The Hansen test and the Arellano-Bond test do not reject the GMM specifications at conventional levels of significance across the columns. The Hansen J-statistic clearly shows that the null-hypothesis of exogeneity of the instruments cannot be rejected at the conventional level of significance. In Table 5, EFI is significantly different from zero at the 1% level in all the columns (including developing countries). A noteworthy issue is that after controlling for potential feedback from PIR, the value of the coefficient of EFI in column 1 of Table 5 has more than doubled—from 0.15 to 0.40.

Changes in economic freedom, however, are now robustly significant on human rights only in the case of the LDCs sample and when regional dummies are not in the estimations for the global sample. This suggests that for the full sample, the result on reforms causing better human rights is not as robust, but given the stringency of the tests there are still statistically significant effects, particularly in the LDCs sample. For this reason, there is good evidence showing that reform efforts, even after controlling for endogeneity, improve human rights conditions among those countries already at lower levels of human rights. Both

Table 5 Effects of EFI and market-economic reforms on human rights, 1981–2006 (GMM)

Variables	(1) PIR full sample SGMM	(2) PIR LDCs SGMM	(3) PIR full sample SGMM	(4) PIR LDCs SGMM	(5) PIR full sample SGMM	(6) PIR LDCs SGMM
Constant	1.915	2.021	1.322	1.903	1.896*	2.079
	(1.246)	(1.648)	(1.665)	(5.293)	(1.066)	(1.540)
Lagged dependent variable	0.237***	0.221***	0.209***	0.202***	0.256***	0.239***
	(0.0339)	(0.0455)	(0.0367)	(0.0454)	(0.0368)	(0.0467)
Economic freedom index	0.358***	0.386***	0.398***	0.405***	0.280***	0.344***
	(0.0845)	(0.0991)	(0.0899)	(0.120)	(0.0867)	(0.106)
Economic reforms	3.427	6.531**	2.531	5.302	3.970*	6.669**
	(2.094)	(2.703)	(2.191)	(3.662)	(2.082)	(2.674)
Per capita GDP (log)	0.204***	0.164	0.138	0.208	0.186***	0.122
	(0.0664)	(0.102)	(0.110)	(0.136)	(0.0619)	(0.0971)
Per capita GDP growth rate	−0.00373	−0.00066	−0.00458	−0.00278	−0.00200	−0.00101
	(0.0095)	(0.0122)	(0.00982)	(0.0124)	(0.0099)	(0.0123)
Population (log)	−0.259***	−0.311***	−0.263***	−0.273***	−0.218***	−0.229**
	(0.0763)	(0.0966)	(0.0817)	(0.0996)	(0.0841)	(0.106)
Democracy	0.046***	0.032***	0.0523***	0.053***	0.046***	0.0325**
	(0.0109)	(0.0119)	(0.0134)	(0.0179)	(0.0110)	(0.0129)

(*continued on the next page*)

Table 5 (*Continued*)

Variables	(1) PIR full sample SGMM	(2) PIR LDCs SGMM	(3) PIR full sample SGMM	(4) PIR LDCs SGMM	(5) PIR full sample SGMM	(6) PIR LDCs SGMM
Oil Exports/ GDP dummy	−0.241	−0.291	−0.230	−0.257	−0.235	−0.312
	(0.193)	(0.231)	(0.216)	(0.258)	(0.193)	(0.238)
Conflicts	−1.383***	−1.368***	−1.322***	−1.314***	−1.405***	−1.389***
	(0.147)	(0.202)	(0.152)	(0.206)	(0.150)	(0.211)
Civil peace years	0.0128***	0.0146**	0.0098**	0.0160**	0.0135***	0.0140**
	(0.00400)	(0.00610)	(0.00402)	(0.00633)	(0.00410)	(0.00625)
Ethnic fractionalization	0.518	0.708**	0.183	0.163		
	(0.318)	(0.350)	(0.263)	(0.314)		
British legal heritage	−0.555**	−0.0954	−0.219	−0.0863		
	(0.247)	(0.188)	(0.212)	(0.269)		
Socialist legal heritage	0.307	0.803**	0.626	0.953		
	(0.351)	(0.393)	(0.464)	(0.683)		
French legal heritage	−0.405		−0.174			
	(0.268)		(0.235)			
German legal heritage	−0.476		−0.184			
	(0.420)		(0.420)			
OECD region dummy			1.318*			
			(0.709)			
MENA region dummy			1.034	−0.508		
			(0.711)	(4.311)		
Europe region dummy			0.851	−0.427		
			(0.672)	(4.198)		
South East Asia region dummy			0.654	−0.375		
			(0.691)	(4.204)		
South Asia region dummy			1.080	−0.108		
			(0.716)	(4.335)		
Sub-Saharan Africa region dummy			0.422	−0.600		
			(0.784)	(4.290)		
Latin America and Caribbean dummy			0.374	−0.920		
			(0.641)	(4.303)		
Arellano-Bond test for AR(1): *p*-value	0	0	0	0	0	0
Arellano-Bond test for AR(2): *p*-value	0.452	0.719	0.634	0.827	0.359	0.607
Hansen test: *p*-value	0.259	0.859	0.393	0.908	0.263	0.753
Number of instruments	113	111	120	117	108	108
Wald chi2	2414.9***	1441***	3829.9***	1278.2***	2127.9***	1403.1***
Time dummies	YES	YES	YES	YES	YES	YES
Number of countries	115	87	115	87	115	87
Total observations	2620	1978	2620	1978	2620	1978

variables, for example, remain significant when we repeat the exercise in columns 5 and 6 in Table 5 by dropping the time-invariant variables. At no time, however, is there any evidence to suggest that reforms lower human rights conditions as skeptics have argued. Our results demonstrate that on average countries attain higher levels of economic freedom without the need for repressive measures, and the bulk of the evidence suggests that reforming more comprehensively might in fact improve existing levels of government respect for human rights, not social breakdown.

5.1 Further checks on robustness

We examine the robustness of our main findings in the following ways. First, the EFI measure is linearly interpolated by us for the years in-between the quintiles. We now run the original data only on the reported quintiles so as to remove any biases stemming from the interpolation. Hence, our total number of observations drops to 1130. Our results, for both global and developing countries, show that the level of economic freedom (EFI) is significantly different from zero at the 1% level. However, the $\mathbf{\Delta}$ reforms measure is now statistically insignificant across the board (including GMM). This change is likely due to the 5-year data setup. Second, following Dreher and Boockmann (2011), we run all our previous estimations with the Political Terror Scale (PTS hereafter), which is an alternative measure of human rights violations coded differently but using similar empirical material, namely Amnesty and the US State Department reports (Gibney and Dalton 1996). The PTS is coded by the US State Department and Amnesty International on a scale of 0–5, with the highest value representing worse human rights conditions. Nonetheless, for each interpretation we reverse the coding with a higher value implying full respect for human rights. The results show that EFI decreases political terror, although the results with respect to $\mathbf{\Delta}$ reforms are not as robust. These results are essentially the same for both the full sample and the sample consisting of 87 developing countries only. It should be noted again, however, that the results on $\mathbf{\Delta}$ reforms are never close to being negative, which the skeptical arguments expect to see empirically.

Third, instead of the percentage change of EFI, we take the first difference as our reforms variable. The results do not show any major change from those reported earlier. Alternatively, we also experimented with a dummy variable which obtains a value of 1 if the EFI score for an i^{th} country in the year t scores 6 or above and 0 otherwise. We find that our EFI dummy is significantly different from zero at conventional levels of significance. Fourth, we check for sensitivity by including a host of different control variables. We drop all our controls to estimate the impact of EFI and Δ reforms on human rights. We still find that both variables remain significant at conventional levels of significance. Even if we drop only those variables which remain statistically insignificant, we still find robust evidence for positive effects of reforms on human rights. Fifth, we consider five-year averages for 1981–1985; 1986–1990; 1991–1995; 1996–2000; 2001–2006 and replicate our baseline estimates as reported in Table 1. EFI and change in EFI remain positive and significant for explaining better human rights in estimates using ordered probit, pooled OLS and fixed effects.[8]

[8] We also replicate the baseline estimations by splitting our sample into regions. America (North and South), Europe (including transition countries), East Asia and the Pacific, Sub-Saharan Africa, the Middle East and North Africa and South Asia. We find very similar results within all the regions except for South Asia. This is not surprising given the N of 5 for this region.

Next, we examine the sensitivity of our main variables (i.e. EFI and **Δ** reforms) on various permutations and combination of controls by employing Extreme Bounds Analyses[9] (EBA hereafter) proposed by Leamer (1983) and Levine and Renelt (1992). The EBA enables us to examine whether the proposed variables are robust as determinants of human rights, independently of which of the additional variables are in the set of control variables. Due to limitations of space we do not discuss the technicalities of EBA here, but instead refer the reader to Leamer (1983) and Sala-i-Martin (1997). We follow a less stringent EBA test proposed by Dreher et al. (2009). We find that EFI and **Δ** reforms are both significantly different from zero at the 5% level in 90% of regressions when testing the global sample and 92% of regressions for the developing countries sample only, with CDF(0) being almost equal to one in both samples. In addition, most of the control variables are strongly related to PIR, as in our baseline regressions. The EBA results provide strong additional support for the robustness of the relationship between EFI level and the rate of change of EFI on the levels of human rights. The results of all of the robustness checks (including that of EBA) are not reported because of space considerations, but they are replicable using our data and do files. Given the weight of this evidence, we can safely reject the hypothesis that free market economic reforms increase the incidence of human rights violations.

6 Conclusion

The founding father of Singapore, Lee Kuan Yew, is fond of saying, "economic development requires discipline," which is a sentiment echoed by many rulers who try to cling to power with the promise of bringing development (Sen 1999). Many think Lee has a point because it is commonly understood that people will resist free-market economic reforms even if they will benefit from such reforms in the long run. According to many, turning to the market is like "swallowing the bitter pill" (Weyland 1998). The question of whether free-market reforms cause declines in human rights is an issue that is extensively debated in the literature and among policy circles, particularly in the debates on globalization and the effects of IMF interventions. The skeptics of market-oriented economic policy reforms contend that reforms reflect the interests of the haves and that they come at the expense of the many. Under such conditions, a market opening can lead to mass dissent and the violations of human rights. Liberals, on the other hand, see economic reforms as the antidote to crises that can lead to social breakdown and that various aspects of a market opening can be healthy for economics and politics. Despite much anecdotal evidence pointing both ways, there has been little systematic empirical research that addresses this issue and takes the question of the direction of causality seriously because even if levels of open market policies are good for societies, changing towards them might cause problems that may destroy the foundations of future progress.

Our findings are easily summarized. Using the best available data and empirical methods, we find positive effects of market-economic policy reforms on government respect for human rights. We control for potential feedback effects, running from human rights to increased market-economic policy reforms using the GMM method of estimation. Even after controlling for endogeneity, market-economic policy reforms seem to predict better human rights, a result that is robust to changes in specification and testing method, as well as in a sample of 87 developing (non-OECD) countries only. These results support liberal optimism

[9] It is noteworthy that Hafner-Burton (2005) finds only patchy support using trade and FDI as measures of globalization on the level of human rights within countries.

about market economic reforms and vindicate those who find positive effects of free markets on economic development and other measures of social welfare, including the public good of peace and decent governance. Furthermore, if IMF interventions lead to human rights violations as some find, then the mechanism leading to such an outcome might clearly not be a market opening as they assume. Perhaps interventions allow bad governments to defer opening as some have claimed (Boockmann and Dreher 2003), which may raise levels of dissent due to the continuation of cronyism. Despite our tests controlling for endogeneity, it might still be true that there is widespread consensus that reforms are necessary when they are in fact undertaken so that social dissent is lower before reforms occur (Armijo and Faucher 2002). Regardless, our results show that the level of economic freedom and movement towards greater economic freedom both reduce violations of human rights. Future studies might look more carefully at the differential effects of change towards freer markets and changes away from them, and more clearly identify the winners and losers of free-market economic reforms and the conditions under which high dissent is defused or exacerbated, taking into consideration the exact nature of market opening policies.

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Appendix 1: Components of the Fraser Economic Freedom Index (EFI)

Area 1: Size of government: expenditures, taxes, and enterprises
- (A) General government consumption spending as a percentage of total consumption
- (B) Transfers and subsidies as a percentage of GDP
- (C) Government enterprises and investment
- (D) Top marginal tax rate
  - (i) Top marginal income tax rate
  - (ii) Top marginal income and payroll tax rates

Area 2: Legal structure and security of property rights
- (A) Judicial independence (GCR)
- (B) Impartial courts (GCR)
- (C) Protection of property rights (GCR)
- (D) Military interference in rule of law and the political process (CRG)
- (E) Integrity of the legal system (CRG)
- (F) Legal enforcement of contracts (DB)
- (G) Regulatory restrictions on the sale of real property (DB)

Area 3: Access to sound money
- (A) Money Growth
- (B) Standard deviation of inflation
- (C) Inflation: Most recent year
- (D) Freedom to own foreign currency bank accounts

Area 4: Freedom to trade internationally
- (A) Taxes on international trade
  - (i) Revenues from trade taxes (% of trade sector)
  - (ii) Mean tariff rate
  - (iii) Standard deviation of tariff rates

(B) Regulatory Trade Barriers
  (i) Non-tariff trade barriers (GCR)
  (ii) Compliance cost of importing and exporting (DB)
(C) Size of the trade sector relative to expected
(D) Black-market exchange rates
(E) International capital market controls
  (i) Foreign ownership/investment restrictions (GCR)
  (ii) Capital controls

Area 5: Regulation of credit, labor, and business
(A) Credit market regulations
  (i) Ownership of banks
  (ii) Foreign bank competition
  (iii) Private sector credit
  (iv) Interest rate controls/negative real interest rates
(B) Labor market regulations
  (i) Minimum wage (DB)
  (ii) Hiring and firing regulations (GCR)
  (iii) Centralized collective bargaining (GCR)
  (iv) Mandated cost of hiring (DB)
  (v) Mandated cost of worker dismissal (DB)
  (vi) Conscription
(C) Business regulations
  (i) Price controls
  (ii) Administrative requirements (GCR)
  (iii) Bureaucracy costs (GCR)
  (iv) Starting a business (DB)
  (v) Extra payments/bribes (GCR)
  (vi) Licensing restrictions (DB)
  (vii) Cost of tax compliance (DB)

Source: Gwartney and Lawson (2008), www.freetheworld.com

Appendix 2: Countries under study

Albania	Denmark	Kuwait	Senegal
Algeria	Dominican Republic	Latvia	Singapore
Argentina	Ecuador	Madagascar	Sierra Leone
Australia	Egypt	Malaysia	Slovakia
Austria	El Salvador	Mali	Slovenia
Bahamas	Estonia	Malawi	South Africa
Bahrain	Fiji	Mauritius	Spain
Bangladesh	Finland	Mexico	Sri Lanka
Barbados	France	Morocco	Sweden
Belgium	Gabon	Myanmar	Switzerland
Benin	Germany	Namibia	Syria
Bolivia	Ghana	Nepal	Tanzania
Botswana	Greece	Netherlands	Thailand
Brazil	Guatemala	New Zealand	Togo

Bulgaria	Guinea-Bissau	Nicaragua	Trinidad & Tobago
Burundi	Guyana	Niger	Tunisia
Cameroon	Haiti	Nigeria	Turkey
Canada	Honduras	Norway	Uganda
Central African Republic	Hungary	Oman	United Arab Emirates
Chad	India	Pakistan	United Kingdom
Chile	Indonesia	Panama	United States of America
China	Iran	Papua New Guinea	Ukraine
Colombia	Ireland	Paraguay	Uruguay
Congo Democratic Republic	Israel	Peru	Venezuela
Congo Republic	Italy	Philippines	Zambia
Costa Rica	Jamaica	Poland	Zimbabwe
Cote d'Ivoire	Japan	Portugal	
Croatia	Jordon	Romania	
Cyprus	Kenya	Russian Federation	
Czech Republic	Korea Republic	Rwanda	

Appendix 3: Data sources and definitions

Variables	Data description	Data sources
Economic Freedom Index (EFI)	EFI is made up of five sub indices capturing: expenditure and tax reforms; property rights and legal reforms; trade reforms; reforms related to access to sound money; labor, business and credit reforms. These five sub indices are made up of 35 components of objective indicators. The final index is ranked on the scale of 0 (not free) to 10 (totally free)	Fraser institute
Economic policy reforms	Reforms denote year-to-year growth in the overall EFI	Own construction
PIR index	The index range from 0, no government respect for human rights to 8, full government respect for human rights on torture, extrajudicial killing, political imprisonment, and disappearances	CIRI dataset
Log (per capita GDP) and growth rate	Per capita GDP (logged) in US$ 2000 constant prices and rate of growth of per capita GDP	Economic Research Service (ERS), Washington DC
Log (population)	Count of total population (logged)	ERS dataset, Washington DC
Political regime (polity IV)	Polity IV index captures the nature of political regime ranging from +10 (full democracy) to −10 (full autocracy)	Marshall and Jaggers (2002)
Conflicts dummy	Dummy coding 1 if there is a civil conflict and 0 otherwise	UCDP dataset (Gleditsch et al. 2002)
Number of peace years	Count of number of civil peace years since the end of a conflict	UCDP dataset (Gleditsch et al. 2002)
Ethnic fractionalization	Index of ethnic fractionalization raging from 0 to 1	Fearon and Laitin (2003)
Legal heritages	Dummies for British, Socialist, French, German and Scandinavian legal origins	La Porta et al. (1998)

Variables	Data description	Data sources
Oil exports dependency	Dummy taking the value 1 if oil exports exceed 1/3rd of export revenue, and 0 if not	Fearon and Laitin (2003) augmented with fuel export data from the World Bank (2008)

Appendix 4: Descriptive statistics

Variables	Mean	Median	Maximum	Minimum	Standard deviation	Observations
PIR	4.902	5	8	0	2.368	2839
EFI	6.393	7	10	0	3.01	2839
Δ economic reforms	0.05	0.05	1.806	−5.391	0.447	2839
Democracy	2.834	6	10	−10	7.126	2839
Log (per capita GDP)	7.629	7.563	10.72	4.368	1.628	2839
GDP growth rate	3.201	3.6	4.25	−5.03	5.103	2839
Oil exports dummy	0.156	0	1	0	0.363	2839
Log (population)	9.393	9.229	14.076	5.849	1.505	2839
Conflicts dummy	0.192	0	1	0	0.394	2839
Ethnic fractionalization	0.404	0.356	0.925	0.004	0.291	2839
Socialist legal heritage	0.064	0	1	0	0.245	2839
British legal heritage	0.339	0	1	0	0.473	2839
Instrument variable	0.004	0.061	0.651	−3.78	0.368	2839

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