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Do IMF programs disrupt ethnic peace? An empirical analysis, 1985–2006

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Abstract

Structural adjustment programs of the International Monetary Fund (IMF) are often blamed for disrupting social relations by forcing austerity on vulnerable people and introducing unpopular liberalization policies. Some suggest that such interventions harm ethnic relations in developing countries because they are insensitive to the tenuous social bargains that often preserve ethnic peace. Moreover, during crises, dominant groups may seek to displace the pain of reform on others, the ethnic division of labour may be affected differentially by reform policies, and ethnic entrepreneurs could use moments of crisis to their advantage. We test the propositions by using unique data measuring the level of ethnic tensions in a country. The results show that IMF interventions reduce conditions of ethnic enmity. These results are robust to fixed effects estimation, endogeneity and selection effects. Moreover, IMF interventions lower ethnic tension in countries that are highly fractionalized, but they are more problematic where larger groups face each other and when larger groups are excluded from state power. These results suggest too that IMF interventions may lead to greater empowerment of excluded groups who might agitate for change during periods of economic crisis. On balance, IMF interventions, relative to continued economic woe, pacify ethnic relations in crisis-ridden countries. We find no evidence to suggest that IMF programs increase ethnic tensions, which is good news for poor countries requiring cheap loans and assistance with reforms.

Keywords

economic liberalization, ethnic peace, IMF

Introduction

Intervention by the International Monetary Fund (IMF) apparently burdens poor countries with austerity measures and neoliberal reforms, which supposedly harm social relations in already fragile settings (Easterly, 2001; George, 1988). It would be a sad paradox if macroeconomic stabilization packages disrupt social peace and stability necessary for development. Since economic reforms alter material conditions between people, it is quite likely that IMF interventions cause conflict, particularly along ethnic fault lines, an issue that has hitherto received scant attention by large-N studies (Bardhan, 1997; Bayo Adekanye, 1995). Unlike empirical studies that test the effect of IMF interventions on open armed conflict, this study focuses specifically on how IMF interventions might affect relations among ethnic groups within a country stretching from open armed conflict, which is generally rare, to tensions short of war.[1] Examining how IMF interventions relate to frictions

[1] For a broad survey of the theoretical and empirical literature on ethnicity and ethnic conflict, see Varshney (2007). It is generally widely accepted that ethnic conflicts occur when ethnicity is instrumentalized by ethnic leaders for achieving political ends. See Bardhan (1997) for an analysis of economic factors behind ethnic conflict.

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involving ethnic groups is an innovation over previous studies, and the findings speak to the broader debate about IMF interventions and political violence.

Using unique data from the International Country Risk Guide (ICRG, 2006) that measure the degree of ethnic tension in a country, we find that IMF interventions increase ethnic calm in a sample of roughly 70 developing countries over two decades (1985–2006). Moreover, while differing aspects of ethnic group configurations, such as ethnic fractionalization, polarization and exclusion, increase ethnic tension, the conditional effect of IMF interventions with high social fractionalization lowers ethnic tension. IMF interventions increase tensions as the size of the excluded group increases beyond 40% of the total population and when the largest ethnic minority reaches 20% or more of the total population, suggesting that IMF involvement is only problematic when a society is ethnically more polarized and a country contains a large ethnic group that is excluded from politics. This may suggest that demands for greater inclusivity may increase when ruling groups are economically vulnerable, leading to group mobilization. Thus, the IMF's activities where ethnic relations are already problematic possibly end up being positive – we leave future research to untangle the exact mechanisms. The results show, however, that the IMF has a direct effect on ethnic calm and that it moderates tensions in highly fractionalized societies. This is good news for the developing world whose woes are often blamed on high social fractionalization.

The IMF and ethnic relations

We identify three major positions on IMF interventions and ethnic peace. The first position is represented by liberal institutionalism, which suggests that international institutions, such as the IMF and World Bank, can bring global economic stability and development. Liberals believe that countries facing crisis are able to access cheap IMF loans, policy advice and guidance to adjust their economies in ways that might avert economic collapse. Since economic collapse leads to social breakdown and state failure, IMF interventions are seen to be good for peace and stability. The second position, represented by neo-marxists, other critical theorists and many orthodox economists, suggests that liberal institutions favour the economic and political interests of the rich countries. They blame international institutions for pushing neoliberal policies that require drastic austerity measures, which harm rather than help the cause of peace. The third position is that ethnic group configuration is what matters and not economic factors associated with IMF interventions. We examine, thus, how IMF interventions might be conditionally related to conflict through various ethnic group configurations. If particular ethnic group configurations raise the risk of ethnic tension, how then might IMF intervention condition peace or war?

Liberal institutionalists

Liberals argue that international institutions can solve collective dilemmas facing international society in an anarchic world (Keohane, 1984). Institutions such as the IMF can support poor countries to improve economic conditions and bring stability by offering loans at highly concessional terms. These loans are offered with policy advice that seeks to adjust the existing economic structure to avoid economic collapse (Woods, 2006). Structural adjustment involves both tightening up budgets and a change of economic structure through greater liberalization. Tightening-up occurs through cuts in consumption and by reducing demand for imported goods because consumption often exceeds income. Austerity programs often demand cuts in public budgets. Devaluation of the currency also contributes towards reducing the current account deficit through cuts in expenditure. The liberalization of the economy generally reduces the role of the state in the economy by reducing government consumption and by privatization of state assets. The state's role in the economy is further lowered through fewer state regulations and interventions in the market through subsidies, import duties, monopolies and the control of prices. Such measures may reduce rent-seeking by domestic elites by taking away opportunities for political patronage, fiscal irregularities and other forms of corruption.[2]

Some claim that the IMF's stabilization measures increase people's welfare. Increased general welfare should reduce the potential for conflict (Collier, Hoeffler & Rohner, 2009). Liberals, thus, might see IMF interventions lowering the risk of ethnic conflict because of better economic management and increased welfare. Moreover, the IMF's oversight over state finances and its general insistence on good governance may placate ethnic groups vis-à-vis dominant groups, who would otherwise be blamed for the crisis. Stabilization loans may allow governments to buy off opposition from ethnic groups who might be encouraged to mobilize against the

[2] Good governance through monitoring of fiscal policies and budgetary allocations is a central feature of IMF activity in borrowing countries; see IMF (1997).

regime due to past failures. Moreover, minority groups and ethnic oppositions are likely to welcome a potentially 'neutral' actor for devising reforms because they would have better guarantees against being economically discriminated by the ruling ethnic elite. As some have claimed, liberal economic policies reduce mutual fear among ethnic groups because groups in charge of government might use state power to discriminate, often by expropriating assets of minorities and changing the rules to favour governing groups through rent-seeking (Steinberg & Saideman, 2008).

Whether or not IMF interventions help or hurt societies in terms of economic recovery and social stability are highly debated topics, including the vexing issues of identifying whether or not governments actually implement IMF policies. Distinguishing between direct causal effects of IMF involvement from the effects of the general political economy of crisis-ridden countries is also troublesome (Midtgaard, Vadlamannati & de Soysa, 2014; Vreeland, 2003). Indeed, one careful cross-national study on structural adjustment in Latin America and Africa finds:

> no indication that adjustment programs connected with IMF or World Bank intervention carry the greatest potential for social violence. Unrest is as much the product of the catastrophic economic situation, which obtained *before* the adjustment as of the adjustment measures themselves. (Haggard, Lafay & Morrison, 1995: 32)

Neo-marxists, critical theorists and others

In contrast to liberals, neo-marxists and other critical theorists see the international financial institutions as tools of the rich countries, doing more harm than good (Chua, 2003; George, 1988). The accusation became widespread during the outbreak of many ethnic conflicts in the 1980s and early 1990s following the collapse of the Soviet Union and the debt crises in Africa and Latin America. Countries facing economic crises are particularly vulnerable, and according to these scholars, the IMF blindly pushes unsuitable policies on to fragile states, resulting in state collapse as witnessed in Rwanda and Somalia (Bayo Adekanye, 1995). Even some orthodox economists accuse the IMF of being insensitive to ground realities by pushing policies that may disrupt tenuous social bargains around identity politics, either due to ignorance and poor planning or because of pressure to lend to strategically important allies of the West, particularly of the USA (Easterly, 2001; Stone, 2004).

Market-friendly reforms redistribute income (Rodrik, 2011). IMF structural adjustment packages can create winners and losers, and the gains and losses might fall along ethnic cleavages. Dominant ethnic groups in power might displace the pain of reform on to other identity groups, thereby raising tensions and leading to 'ethnic security dilemmas' due to the uncertainties associated with reform (Posen, 1993). Cuts in public expenditures, privatization and a diminished role for the state can have massive redistributive effects, hurting ordinary people and exacerbating existing societal fault lines (Bardhan, 1997; Bayo Adekanye, 1995). If an ethnic group is disproportionately affected by such worsening conditions, then this might lead to heightened ethnic tensions, since ethnic collective action is easier than collective action across groups, because of in-group cohesion. Broad economic restructuring will cause a new allocation of resources, and different groups and regions could be affected differentially, perhaps even leading to calls for secession by ethnically and territorially distinct groups, such as in Sri Lanka (Gamage, 2009). In this context, ethnic tensions could rise simply because ethnic group cohesion allows disaffected groups to take to the streets, thereby increasing ethnic tensions.

However, it is difficult to identify *a priori* which groups benefit and which lose from reform and why class affiliations trump ethnic affiliations. Indeed, given the contested nature of theory, the issue of whether or not IMF interventions lead to ethnic tensions rather than peace is an empirical one. Several large-N studies find that IMF interventions lead to the outbreak of civil war and political repression (Abouharb & Cingranelli, 2007; Hartzell, Hoddie & Bauer, 2010). These studies use a well-worn indicator of IMF interventions measured as whether or not a country signed on to a structural adjustment program. These studies assume that signing on to an IMF program means that the countries have actually implemented liberalization. They blame the effects of liberalization as the underlying causes of conflict (Hartzell, Hoddie & Bauer, 2010).

Signing on to an IMF program might be contemporaneously related to the nature of the crises themselves, which could also spawn conditions of violence (Haggard, Lafay & Morrison, 1995). In fact, how these countries might have fared without IMF programs, where austerity would occur by default, is never really accounted for. Moreover, some demonstrate that IMF programs do not increase liberalization because of the well-known problems of time inconsistency and moral hazard (Boockmann & Dreher, 2003; Collier & Gunning, 1999). Nevertheless, whether the IMF causes armed violence

in poor countries is debatable, and the empirical evidence is inconclusive (see Hartzell, Hoddie & Bauer, 2010; Midtgaard, Vadlamannati & de Soysa, 2014).

Studies that directly test whether more liberalized economies associate with civil war and political repression, which is what critics of the IMF say cause violence, find that more liberal economies have a smaller risk of violence (de Soysa & Vadlamannati, 2013; de Soysa & Fjelde, 2010; Steinberg & Saideman, 2008). If these findings are true, then it may be that what poor countries need is more sustained liberalization, not less. These issues clearly suggest that further empirical scrutiny is required for understanding how IMF interventions might be destructive of peace. We do not adjudicate the debate here but simply use an alternative measure of the degree of hostility between ethnic groups within countries to examine the IMF's effect on social peace.

Is the IMF's effect conditional on ethnic group configuration?

Easterly (2001) claims that groups in more fractionalized societies compete for the existing resources, while more homogenous societies are better able to focus on economic development, which increases welfare for everyone. According to Alesina, Easterly & Matuszeski (2006) states with artificial borders that split ethnic groups have weaker economic and social development and suffer greater violence.[3] It might be the case then that the IMF has a different effect in highly fractionalized societies because coordination failure among the different groups is likely to be high. Thus, even if the IMF does not have a direct effect on social relations, the effect may be conditional on the degree of social fractionalization. Indeed, IMF interventions that require austerity may disrupt the tenuous social bargains required for maintaining peace, particularly among multiple ethnic groups (Bardhan, 1997). From the above, we derive the following hypothesis:

H1: IMF interventions in fractionalized societies destroy ethnic peace.

Others argue that it is not fractionalization but ethnic polarization that matters (Esteban & Ray, 2008). As they argue, it is not the number of groups that matter but the existence of two large groups where the loss of the policy environment is likely to have greater consequences for the large minority. Since the IMF enters environments already in economic crisis, a large minority may use the moment of weakness in a majority-ruled government to agitate for change and mobilize its demands. Thus, if polarized environments are more fragile, IMF interventions in such environments may coincide with greater mobilization of minorities leading to greater ethnic tensions. We also test the following proposition.

H2: IMF interventions in more polarized social settings increase ethnic tensions.

Others argue that it is not group configurations that matter but who is aggrieved through exclusion from government. They show that conflict is more likely with higher degrees of ethnic exclusion from state power, and that riots to a greater degree are connected to the exclusion of bigger groups (Cederman, Wimmer & Min, 2010). Much as can happen in the presence of polarization, economic crisis and the presence of an external constraint on the government, excluded groups may agitate for change, emboldened by the window of opportunity afforded by the crisis. Such agitation would increase ethnic tensions. Thus, we will test the following hypothesis.

H3: IMF interventions increase ethnic tensions if large groups are excluded from power.

Data and methods

We analyze a time-series cross-sectional dataset (TSCS) containing roughly 70 developing countries with 500,000 or more inhabitants covering the years 1985–2006. Country coverage is based on availability of data on the dependent variable measuring ethnic tensions. We know of no study to date that has used the ethnic tensions data of the ICRG in empirical studies on the effects of IMF programs. Most studies use large-scale civil war or political repression to test the effects of IMF interventions. The ICRG's ethnic tension variable is coded on a continuous scale 0–6, where 0 denotes high tension and 6 the complete absence of tension (ICRG, 2006). Accordingly, we rename this variable *ethnic peace* because it goes from high tension to low tension on an ascending scale. According to the Political Risk Service (PRS) group that collects the data for use as part of a risk index informing international business, calm between ethnic groups is an important consideration. The ethnic peace data are based on newspaper reports, in-house observations and the use of country experts on the basis of:

[3] For arguments that challenge the pessimistic views on ethnic fractionalization, see Collier (2001) and de Soysa (2011).

> tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where racial and nationality tensions are high because opposing groups are intolerant or unwilling to compromise. Higher ratings are given to countries where tensions are minimal, even though such differences may still exist.[4]

While the PRS monitors ethnic relations in a country on a daily basis, the method is not without problems. For example, journalists and country experts may in fact be influenced by IMF decisions to lend, which may lead to more favourable assessments of ethnic relations. Alternatively, we could have used the Minorities at Risk (MAR) data, but on examining the ethnic tension variable with MAR's interethnic conflict variable, we discovered that MAR relied heavily on groups being mobilized already (CIDCM, 2009). For example, comparing three years for which we obtained MAR data (2004–06), the ethnic tension data coded Sri Lanka and Pakistan with high tension for all three years, whereas MAR coded Sri Lanka with no rebellion during this period, due mainly to the then existing peace talks that subsequently broke down in full-scale war. We found only very weak correlations between MAR's ethnic discrimination variables and the ICRG's ethnic tension, which is possibly due to MAR's reliance on open rebellion and ICRG's emphasis on tensions despite the absence of open conflict and group mobilization. We cannot of course evaluate the validity of dependent variables and theory simultaneously, but hope in future research to pursue the issue.

Our empirical strategy is to employ multiple techniques on the data. The baseline specification estimates the degree of ethnic peace in country i in year t, which is a function of a set of exogenous variables Z_{it} and our main variable of interest, that is, participation in an IMF loan program by country i:

$$EP_{it} = \phi_1 + \psi_2 IMF_{it} + \psi_3 Z_{it} + \upsilon_t + \omega_{it} \qquad (1)$$

where υ_t is the time-specific fixed-effects and ω_{it} is the error term. The dependent variable EP_{it} is the ICRG ethnic peace index in country i in year t. Our main variable of interest is participation in an IMF loan program (IMF_{it}). Most studies use a measure that is dummy coded on the basis of whether or not a country had entered into an IMF loan program. We improve on this by using a measure developed by Dreher (2006), which is dummy coded on the basis of a country being in any IMF loan programs for more than five months in a particular year. This measure is superior to the measure capturing signing on because being under an IMF program for at least five months of a year shows substantial commitment to an IMF program. Alternatively, we also use the number of years under IMF programs (Dreher, 2006) in robustness checks. We treat the latter measure with some caution because there are many countries that keep coming back for IMF loans because of non-implementation and continued economic crisis, such as Haiti and Pakistan (Bird, Hussain & Joyce, 2004).

We control for several potential confounding factors when assessing the effect of IMF interventions on ethnic peace. To test the conditional effect of IMF interventions under different situations of ethnic configuration, we estimate a set of interaction effects in which we introduce interaction between IMF intervention and various measures of ethnic configurations:

$$EP_{it} = \phi_1 + \psi_2 IMF_{it} \times Con_{it} + \psi_4 IMF_{it} + \psi_5 Con_{it} + \psi_6 Z_{it} + \upsilon_t + \omega_{it} \qquad (2)$$

where $IMF_{it} \times Con_{it}$ is the interaction term between IMF intervention and three different measures of ethnic configuration. To capture the degree of ethnic tensions, there has to be some variance of ethnic diversity. *Ethnic fractionalization* is taken from Fearon (2003) and is defined as the probability that two randomly chosen people will be from different ethnic groups. If fractionalization is problematic and the IMF stays away from highly fractionalized societies, then it may not be IMF intervention that matters but the degree of fractionalization. Therefore we control for this important factor. The existence of a large minority group is taken to be an indication of a polarized society. We use Fearon's (2003) size of the second largest group to measure *polarization*. The logic is that if a minority commands a large share of the total, then the majority's share of the population has to be smaller. Given the disagreements between those who see group configuration as important and those who see ethnic grievances due to state exclusion as important, we also test the effects of the size of the *excluded ethnic population* which is from the Ethnic Power Relation data constructed by Cederman, Wimmer & Min (2010).

The vector of control variables (Z_{it}) includes other potential determinants of ethnic peace, which we obtain from the civil war literature because the predictors of ethnic group tension and civil war should be very similar (Hegre & Sambanis, 2006; Ward, Greenhill & Bakke, 2010). These controls influence the way in which IMF interventions may matter for ethnic peace. Both ethnic

[4] See web document entitled 'Methodology' at https://www.prsgroup.com/about-us/our-two-methodologies/icrg.

and non-ethnic civil wars are more common in poor, large and oil-rich countries (Fearon, 2006). *GPD* per capita (logged) is the level of income in US$ in purchasing power adjusted terms taken from the Penn World Tables dataset (Heston, Summers & Aten, 2011). A bigger population increases the risk of conflict, and since bigger populations are likely to have more ethnic groups and a bigger population might be more strategically interesting for IMF interventions, its inclusion in the model as a control is vital. The variable *population* size (logged) is taken from World Development Indicators (World Bank, 2012).

Studies find that countries that export natural resources have a higher risk of civil war (de Soysa, 2002; Ross, 2004). Resource-rich states may also have higher tension if an ethnic group hogs access to resource rents. Resource-wealthy states may also get more frequent IMF interventions, all other things equal, given the strategic nature of resources such as oil to Western markets. We control for the value of *natural resource rents as a share of GDP* sourced from the World Development Indicators (World Bank, 2012). We also include a measure of *external debt/GDP*, which is our proxy for economic vulnerability obtained from World Development Indicators (World Bank, 2012). Including the independent effect of the debt burden captures some aspect of the nature of the economic crisis facing the borrowing country. We may then compare the net effect of indebtedness with the effect of IMF intervention independently. Regime type is potentially an important predictor of ethnic relations and IMF intervention. We dummy code *democracy* taking the value 1 if it is above 6 on the Polity IV scale and 0 if below (Gurr & Jaggers, 1995). We also include a measure of *human rights repression* because the IMF may be influenced by ongoing state repression. We use the CIRI human rights index, which 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 these four human rights (Cingranelli & Richards, 2008). Data sources and definitions appear in the online appendix.

We estimate a standard OLS estimator with heteroscedasticity consistent robust standard errors due to our dependent variable, which is essentially a continuous variable. We also use the Newey-West estimator that is robust to heteroscedasticity and allows the computation of an AR1 process to account for autocorrelation (Newey & West, 1987). We control for time dummies as well as country fixed effects. When including our three ethnic configuration measures, which are largely time-invariant, we drop country fixed effects but retain time dummies. The usage of two-way fixed effects will not only be collinear with time-invariant regressors, but will also generate biased estimates (Beck et al., 2002). We also estimate our models using ordered probit with time fixed effects and heteroscedasticity consistent robust standard errors by converting our dependent variable into an ordinal structure of 1 to 6 by reconfiguration and rounding off the values to the nearest point. However, in ordered probit models, we do not control for country-specific fixed effects due to the incidental parameter problem (Wooldridge, 2002) and we cannot estimate a lagged dependent variable in the ordered probit estimates because the models fail to converge. Bias from autocorrelation in the ordered probit estimates is minimized, however, because we employ the cluster option in STATA on country (units). In any case, we follow the safe strategy of estimating the data with a variety of techniques for ascertaining robustness.

Endogeneity

We address the question of whether causality runs from ethnic peace to participation in an IMF loan program rather than the other way around. Arguably, higher levels of ethnic tensions may scare off the IMF. This issue is not trivial because those who argue that participation in an IMF loan program is associated with ethnic peace or tensions also make causal claims. To counter the endogeneity concerns, we use two instrumental variables, namely, United Nations Security Council (UNSC) membership and the voting alignment with the USA in the United Nations General Assembly (UNGA).[5] Several studies find a strong relationship between voting patterns in the UNGA and IMF lending (Copelovitch, 2010; Dreher, Sturm & Vreeland, 2009a). Likewise, studies show that major shareholders of the IMF, who are also the permanent members of the UNSC, influence how the IMF lends based on political support of non-permanent members in the UNSC (Dreher, Sturm & Vreeland, 2009b). In addition, Stone (2002, 2004) shows that punishment for non-compliance with IMF conditions is significantly weaker for countries that are considered strategically important to the USA. Studies by Stone (2008) and Dreher & Jensen (2007) also find that conditions are fewer in number and severity for countries favoured by powerful countries.

[5] The UNSC data are taken from Dreher, Sturm & Vreeland (2009b) and the UNGA data from Strezhnev & Voeten (2012).

Using these two measures as our instruments, we estimate a two-stage least squares method (2SLS-IV hereafter) controlling for both time dummies and country fixed effects. The validity of the selected instruments depends on instrument relevance, that is, the instrument must be correlated with the explanatory variable in question. Bound, Jaeger & Baker (1995) suggest examining the F-statistic on the excluded instruments in the first-stage regression. The selected instruments would be relevant when the first-stage regression model's F-statistics meet the thumb-rule threshold of being above 10. However, the joint F-test has been criticized in the literature for being insufficient for measuring the degree of instrument relevance in the presence of multiple endogenous variables (Stock, Wright & Yogo, 2002). Therefore, we also apply a more powerful test, the Kleibergen-Paap rk LM statistic test (Kleibergen & Paap, 2006). A Kleibergen-Paap LM statistic above the critical value (10% maximal test size) indicates the rejection of weak instruments.

Secondly, the instrument variables should not vary systematically with the disturbance term in the second stage equation, that is, $[\omega_{it}|IV_{it}] = 0$, meaning the instruments cannot have independent effects on the dependent variable. We know of no theoretical arguments linking the voting alignment of a country in the UNGA and non-permanent membership in the UNSC with increased ethnic tensions in those countries. We apply Hansen's J-test (Hansen, 1982), which shows that the null hypothesis of exogeneity cannot be rejected at the conventional level of significance. We also regress ethnic peace, our dependent variable, on UNSC membership and UNGA voting data after controlling for all the controls used in our baseline models. Both instruments pass the instrument exclusion criteria.

Results

Tables I–III present our main results. Table I display results estimated using OLS (controlling for time dummies) and OLS two-way fixed effects methods examining the impact of IMF programs on ethnic peace, controlling for various measures of ethnic configuration. It also presents the results addressing endogeneity concerns using the instrumental variable method. Table II replicates our baseline models reported in Table I using the ordered probit method, and Table III presents the interactions between IMF loan programs and our three measures of ethnic configurations. The descriptive statistics are reported in the online appendix.

As seen in Model 1 in Table I, participation in an IMF loan program for at least five months or more during a year improves ethnic peace. All other things equal, an IMF intervention increases ethnic calm by roughly 3% of a standard deviation of ethnic peace. While this substantive effect does not seem large, it is noteworthy that the presence of a lagged dependent variable in this model is likely to be doing all the heavy lifting. Moreover, the random effects estimates are clearly less powerful that the fixed effects because the within variance is the most meaningful in terms of assessing how a single country does when there is an IMF intervention. As such, looking across Models 6–8, IMF interventions have a positive and statistically very significant effect on ethnic peace. All things equal, going from having no IMF presence to IMF involvement increases ethnic calm by roughly 7% of a standard deviation of ethnic peace. These results contradict those who blame IMF programs for increasing tensions among ethnic groups.[6]

In Models 3–5, we control for different measures of ethnic configurations, namely ethnic fractionalization, polarization and the size of the excluded ethnic population. After controlling for these measures, the positive and largely significant effect of IMF program participation in explaining ethnic peace remains. As expected, the ethnic configuration variables predict ethnic peace negatively. Ethnic fractionalization predicts higher ethnic tensions, which is significantly different from zero at the 99% confidence level or the 1% level. This is unsurprising since the larger the number of groups the greater the chance of seeing some groups at loggerheads with each other at any given time (Easterly, 2001). Likewise, the larger the size of the second largest minority group the greater the ethnic tensions as well, which is again significantly different from zero at the 1% level. This variable seems to have the largest impact on ethnic peace as gauged by the size of the coefficient. A unit increase in the size of the minority reduces ethnic peace by roughly two basis points, which is one-third of the scale of ethnic peace. Our results are in line with the results documented by previous studies on ethnic civil war (Collier, 2001; Esteban & Ray, 2008). Ethnic exclusion from state power also predicts lower ethnic peace as suggested by

[6] We also estimate our models with ongoing civil war, since the IMF might be associated with either the absence or presence of violent conflict. The civil war variable is taken from the Uppsala Conflict Data Program (see Gleditsch et al., 2002). The variable takes the value 1 if there is conflict with at least 25 deaths in a single year and 0 if not. Our results on IMF involvement remain robust to the inclusion of civil war (results in online appendix).

Table I. IMF interventions and ethnic peace in developing countries, 1985–2006

Dep. Var. = Ethnic peace	*(1) OLS*	*(2) Newey*	*(3) Newey*	*(4) Newey*	*(5) Newey*	*(6) OLS-FE*	*(7) 2SLS-IV*	*(8) SGMM*
IMF > 5 months in a year	0.035† (0.020)	0.0946 (0.079)	0.140† (0.074)	0.135† (0.080)	0.109 (0.080)	0.104* (0.051)	0.686* (0.338)	1.362* (0.645)
Per capita GDP (log)	0.034* (0.015)	0.685** (0.047)	0.425** (0.056)	0.669** (0.050)	0.685** (0.048)	1.192** (0.180)	1.295** (0.144)	0.196** (0.095)
Population (log)	0.009 (0.009)	−0.025 (0.034)	−0.005 (0.029)	−0.087* (0.035)	−0.059† (0.034)	1.602** (0.544)	1.774** (0.367)	0.064 (0.047)
External debt/GDP	−0.003* (0.001)	−0.020** (0.007)	−0.016* (0.007)	−0.013* (0.006)	−0.013 (0.008)	−0.002 (0.004)	−0.004 (0.004)	−0.008 (0.005)
Democracy	−0.001 (0.023)	−0.019 (0.098)	−0.087 (0.090)	0.061 (0.106)	−0.088 (0.100)	−0.064 (0.085)	−0.072 (0.068)	−0.029 (0.079)
Physical integrity rights	0.022** (0.006)	0.136** (0.025)	0.129** (0.022)	0.107** (0.025)	0.129** (0.025)	0.061** (0.015)	0.051** (0.015)	0.008 (0.016)
Resource rents/GDP	−0.000 (0.001)	−0.014** (0.003)	−0.005 (0.003)	−0.009* (0.004)	−0.015** (0.003)	0.001 (0.005)	0.003 (0.005)	0.005 (0.004)
Ethnic fractionalization			−1.698** (0.154)					
Polarization				−2.189** (0.401)				
Exclusion					−0.486† (0.290)			
Lagged dependent variable	0.941** (0.009)							
Constant	−0.333† (0.176)	−1.963** (0.705)	0.464 (0.697)	−0.455 (0.729)	−1.307† (0.710)	−28.99** (8.894)	−32.72** (6.086)	−3.018† (1.543)
R-squared	0.936						0.750	
Time dummies	YES	YES	YES	YES	YES	YES	YES	YES
Country fixed effects	NO	NO	NO	NO	NO	YES	YES	NO
Joint F-statistic							9.570**	
Kleibergen-Paap rk LM statistic							16.198**	
Hansen J-statistic (p-value)							0.281	0.998
Arellano-Bond test for AR(2) (p-value)								0.056
Number of countries	69	69	69	67	68	69	69	69
Total observations	1,367	1,437	1,437	1,393	1,406	1,437	1,437	1,297

Robust standard errors in parentheses; $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$.

Table II. IMF interventions and ethnic peace in developing countries, 1985–2006

Dep. Var. = Ethnic peace	*(1) Ordered probit*	*(2) Ordered probit*	*(3) Ordered probit*	*(4) Ordered probit*
IMF > 5 months in a year	0.103† (0.059)	0.155** (0.060)	0.140* (0.060)	0.118* (0.060)
Per capita GDP (log)	0.623** (0.034)	0.420** (0.040)	0.626** (0.037)	0.633** (0.035)
Population (log)	−0.019 (0.023)	−0.002 (0.022)	−0.075** (0.024)	−0.049* (0.023)
External debt/GDP	−0.021** (0.006)	−0.019** (0.006)	−0.015** (0.006)	−0.016* (0.007)
Democracy	0.005 (0.066)	−0.067 (0.066)	0.072 (0.072)	−0.055 (0.068)
Physical integrity rights	0.128** (0.018)	0.131** (0.018)	0.104** (0.018)	0.122** (0.018)
Resource rents/GDP	−0.013** (0.002)	−0.005* (0.002)	−0.009* (0.003)	−0.014** (0.002)
Ethnic fractionalization		−1.694** (0.115)		
Polarization			−2.235** (0.271)	
Exclusion				−0.467* (0.195)
Constant	6.941** (0.502)	5.144** (0.525)	5.745** (0.519)	6.448** (0.507)
Pseudo R2	0.128	0.173	0.143	0.133
Time dummies	YES	YES	YES	YES
Country fixed effects	NO	NO	NO	NO
Number of countries	69	69	67	68
Total observations	1,437	1,437	1,393	1,406

Robust standard errors in parentheses; $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$.

Table III. Conditional effects of IMF interventions and ethnic configurations, 1985–2006

Dep. Var. = Ethnic peace	*(1) Newey West*	*(2) Newey West*	*(3) Newey West*	*(4) Newey West*
IMF > 5 months in a year × ethnic fractionalization	0.683** (0.223)			0.660** (0.231)
IMF > 5 months in a year × polarization		−0.477 (0.713)		0.842 (0.842)
IMF > 5 months in a year × exclusion			−1.648** (0.505)	−1.563** (0.553)
Ethnic fractionalization	−2.011** (0.177)			−1.897** (0.199)
Polarization		−1.965** (0.544)		−0.866 (0.614)
Exclusion			0.295 (0.391)	0.275 (0.386)
IMF > 5 months in a year	−0.163 (0.122)	0.216 (0.142)	0.303* (0.093)	−0.088 (0.152)
Per capita GDP (log)	0.432** (0.055)	0.669** (0.05)	0.690** (0.047)	0.406** (0.062)
Population (log)	−0.002 (0.029)	−0.089* (0.035)	−0.055 (0.034)	−0.059† (0.032)
External debt/GDP	−0.016* (0.007)	−0.013* (0.007)	−0.011 (0.008)	−0.001 (0.008)
Democracy	−0.063 (0.091)	0.059 (0.106)	−0.089 (0.099)	0.009 (0.096)
Physical integrity rights	0.127** (0.023)	0.108** (0.025)	0.133** (0.026)	0.115** (0.024)
Resource rents/GDP	−0.004 (0.003)	−0.009** (0.004)	−0.016*** (0.004)	−2.49e-06 (0.004)
Constant	0.462 (0.693)	−0.476 (0.731)	−1.532* (0.712)	1.586* (0.730)
Time dummies	YES	YES	YES	YES
Country fixed effects	NO	NO	NO	NO
Number of countries	69	67	68	66
Total observations	1,437	1,393	1,406	1,362

Robust standard errors in parentheses; $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$.

Cederman, Wimmer & Min (2010), which is significantly different from zero at the 5% level.

In Model 7, we introduce the 2SLS-IV estimation to address endogeneity. We use the UNSC membership dummy and UNGA voting index as our instruments. We control for two-way fixed effects. Again, IMF programs increase ethnic peace. Being in an IMF program for more than five months in a year is associated with an increase of almost 0.7 points in ethnic peace, an effect which is significantly different from zero at the 5% level. This effect substantively is 50% of a standard deviation of the ethnic peace score. In other

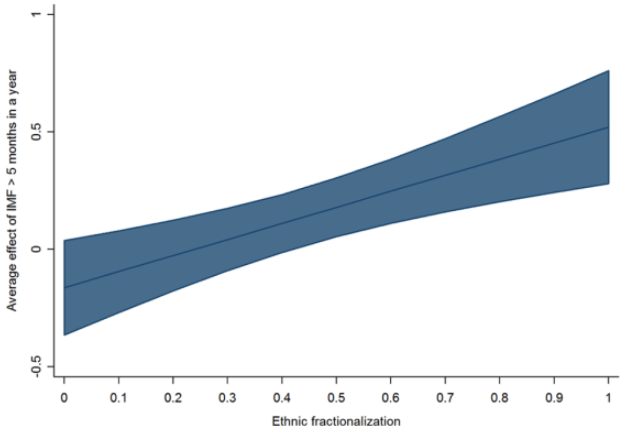

Figure 1. IMF program, ethnic fractionalization, average effect on ethnic peace

words, IMF involvement could cut the level of ethnic tension in a country by half. The joint F-statistic and the Kleibergen-Paap LM statistic obtained from the first stage analysis are roughly 10 and above, significantly different from zero at 1% level, which allows us to reject the null hypothesis of weak instruments. The Hansen J-Statistic clearly shows that the null hypothesis of exogeneity of the instruments cannot be rejected at the conventional level of significance. These additional tests give us confidence that our findings are not biased due to endogeneity.

Next, we report results from the ordered probit estimation method (see Table II). The results using the transformed ethnic peace index confirm the basic results estimated using OLS reported in Table I. Being in an IMF program affects ethnic peace positively, and the results are statistically significant. In fact, the coefficients are not much different from those reported in Table I. The results on the measures of ethnic configuration are also similar to those reported in Table I. All three measures of ethnic configurations (ethnic fractionalization, polarization and exclusion) are associated with decreases in ethnic peace. Note that in these models, our IMF measure retains the positive sign and is significant. The results from Table I and II suggest that our main findings are quite robust to alternative estimation techniques. We compute marginal effects of the IMF's impact, at the mean of all the control variables. We find that participation in an IMF program for more than five months in a year has a substantively large effect on ethnic peace (results available in the online appendix).

Thus far, we examined the direct effect of IMF interventions on ethnic peace. In Table III, we examine the IMF effects on ethnic peace conditional on existing ethnic group configurations and ethnic exclusion. As can be seen, the conditional effect between IMF intervention and ethnic fractionalization is positive on ethnic peace, a result that is significantly different from zero at the 1% level (see Model 1). It is important to note that interpretation of the interaction term even in linear models could be quite tricky as the statistical significance changes depending upon the level of the conditioning variable (i.e. ethnic configuration measures). Thus, we rely on the graphical interpretation in Figure 1, which depicts the magnitude of the interaction effect shown in Model 1 in Table III. To calculate the average effect of an additional increase in an IMF loan program lasting more than five months during a year, we take account of both the conditioning variable (i.e. ethnic fractionalization) and the interaction term. The y-axis of Figure 1 shows the average effect of an additional IMF loan program lasting five months during a year and the x-axis shows the level of ethnic fractionalization index at which the average effect is evaluated. Moreover, we include the 90% confidence interval in the figure.

As Figure 1 shows, an IMF loan program lasting five months during a year actually increases ethnic peace (at the 90% confidence level) if ethnic fractionalization is greater than 0.4 (on a scale of 0–1). The results suggest that where ethnic fractionalization is problematic for ethnic peace on its own, IMF interventions actually serve to alleviate ethnic tensions. We are able, thus, to reject the hypothesis (H1) that suggests that IMF interventions are particularly pernicious where the policy environment is hampered by social frictions emanating from high ethnic fractionalization.

The conditional effect of an IMF program and ethnic polarization is negative but remains statistically insignificant (see Model 2). We focus again on the graphical interpretation of the second interaction term reported in column 2 in Table III, in which ethnic polarization is the conditioning variable. The y-axis of Figure 2 displays the average effect of an additional increase in an IMF loan program lasting five months during a year and the x-axis shows the ethnic polarization index at which the effect is evaluated. As before, we include the 90% confidence interval in the figure. Figure 2 shows that IMF involvement has a positive effect on ethnic peace (at the 90% confidence level), as long as the size of the largest minority group remains under 25% of the total population. This suggests that an IMF loan program would be beneficial in countries with lower to moderate ethnic polarization, in other words, where fractionalization is the dominant configuration. As ethnic group parity increases IMF interventions raise the risk of ethnic

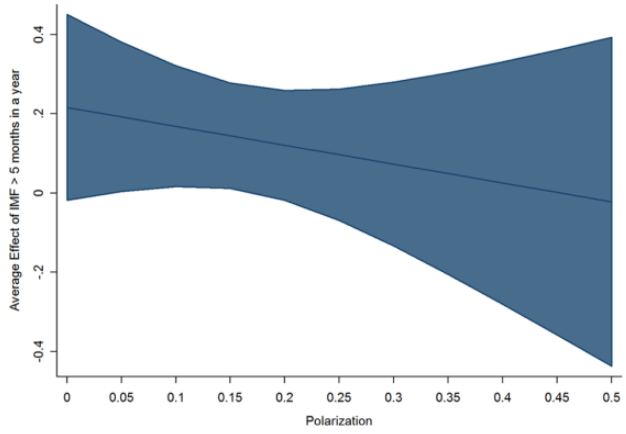

Figure 2. IMF program, polarization, average effect on ethnic peace

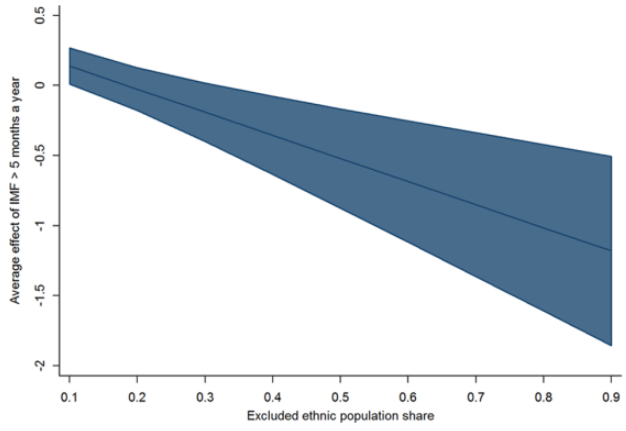

Figure 3. IMF program, excluded ethnic population share, average effect on ethnic peace

tensions, possibly because large groups would agitate and mobilize precisely when an ethnic majority faces economic crisis. We are thus able to accept H2.

Finally, in Figure 3 we report the graphical interpretation of the interaction effect between the IMF program and the excluded ethnic population share. As can be seen, IMF loan programs lasting more than five months are associated with an increase in ethnic peace when the excluded ethnic population share is less than 20%. The effects, however, start to change to negative when the excluded ethnic population share in a country moves beyond 30%. That is, if the excluded ethnic population share is above a certain level, an IMF loan program lasting more than five months in a year would decrease ethnic calm at the 90% confidence level. The fact that high heterogeneity is conditioned negatively on ethnic tensions while the presence of larger minorities increases tensions is interesting. It may very well be that excluded groups, particularly large groups, use crises as windows of opportunity to agitate for greater rights, thereby increasing tensions. Our findings provide a good basis on which careful case studies of how the IMF promotes and mitigates social peace might usefully be employed in the future.

With respect to control variables, we find that countries with higher income levels are associated with ethnic peace, which is in line with previous findings (Ward, Greenhill & Bakke, 2010). A standard deviation increase in per capita income (logged) is associated with an increase of 0.68 points in ethnic peace, which is roughly 48% of the standard deviation of the ethnic peace index. These results remain robust across all the models and are significantly different from zero at the 1% level (see Tables I, II and III). Countries with larger populations are associated with an increase in ethnic tensions, although the significant effects are not robust across the models. Similarly, countries with higher levels of external debt, which is our proxy for economic crisis, are associated with higher levels of ethnic tensions, net of IMF interventions, suggesting that the cure of IMF interventions is not worse than the disease, as some suggest.

More democracy does not seem to reduce ethnic tensions. Ethnic tensions are likely to rise during democratization and because autocrats can suppress minority demands. Periods of elections are also likely to raise ethnic tensions, as seen recently in places such as Kenya and the Ivory Coast. We do, however, find strong effects on ethnic peace stemming from government respect for human rights, although this relationship is likely to work both ways. Finally, countries heavily dependent on extracting natural resource rents face a higher risk of ethnic tensions compared with resource-poor states, a finding documented in the literature on civil war and political repression (de Soysa, 2002; Fearon & Laitin, 2003; Ross, 2004). Thus, the results of our control variables are highly comparable with the general literature on civil war, which is reassuring.

Checks for robustness

We examine the robustness of our main findings in several ways. First, we address the concerns related to selection bias. Evaluating the effects of an IMF program involves the difficulty of non-random selection (Heckman, 1979). This is because the entry into an IMF loan program and then complying with the program are not random events. We use the methods developed by Heckman (1976), which estimates the effects

independently of selection.[7] We use UNSC membership and the UNGA voting alignment index as our exclusion variables in the first step of the Heckman selection model when estimating a country's entry into an IMF loan program (the variables and data sources are reported in the online appendix).

We follow previous studies on determinants of participation in IMF programs (Dreher, Sturm & Vreeland, 2009b; Barro & Lee, 2005) and include: per capita GDP (logged), trade openness (measured as total trade as a share of GDP), foreign direct investments/GDP, external debt/GDP, two dummy variables capturing whether a country has experienced a currency crisis, and a debt crisis, sourced from Laeven & Valencia (2008), a measure of democracy and autocracy as discrete variables, a dummy variable indicating the presence of civil war, the amount of resource rents per GDP, the level of development aid received per GDP and the number of years since the last IMF program. Our results from the Heckman selection models confirm the positive and statistically significant effect of being under an IMF loan program for over five months in a year on ethnic peace. These results remain robust to the inclusion of economic freedom, a proxy for good economic governance, in the first step of the analysis.[8]

Second, we replace our main measure of a country being under an IMF loan program for more than five months in a year with a count measure of the total number of years a country has been under an IMF loan program. Our results remain the same. Note that these results also remain robust when using the two-way fixed effects estimator and a lagged dependent variable. Third, we use an alternative instrumental variable approach, using Blundell & Bond's (1998) system-GMM estimator, which accounts for the Windmeijer (2005) correction, where we instrument for our IMF measure. It should be noted that estimating the OLS models with fixed effects estimator and a lagged dependent variable causes inconsistent estimations resulting in 'Nickell bias' (Nickell, 1981). Therefore, we control for the lagged dependent variable by employing the dynamic system-GMM estimator suggested by Arellano & Bond (1991), Arellano & Bover (1995) and Blundell & Bond (1998). We treat the lagged dependent variable and the IMF measure as endogenous and all control variables as exogenous. The two-step estimator developed by Roodman (2009) in Stata 12 is applied here. We lag both instruments by two years and test for the exogeneity of covariates by employing the Hansen J-statistic. We apply the Arellano-Bond test of second-order autocorrelation, which must be absent from the data in order for the estimator to be consistent. In order to minimize the number of instruments, we follow Roodman (2009) and collapse the instruments matrix.

Our results using System-GMM show a positive and significant effect of IMF involvement on ethnic peace. The Hansen J-statistic and the Arellano-Bond test do not reject the GMM specifications at conventional levels of significance.[9] We do not find at any time that IMF interventions in poor countries increase ethnic tension as some scholars have claimed, but there is robust evidence suggesting the opposite. It seems that poor countries in economic trouble need not shun the cheap loans and policy advice offered by the IMF on the basis that these programs disrupt ethnic peace. On the contrary, a situation of worsening economic conditions due to crisis is not likely to strengthen social peace.

Conclusion

The increasing frequency of intervention by the IMF in developing countries is criticized for doing more harm than good. We use unique data to investigate whether IMF interventions cause ethnic tensions. Holding several relevant factors constant, including the ethnic configurations of groups within countries, the IMF has a robust positive effect on ethnic peace, and these results are robust to estimating technique, selection bias and biases stemming from endogeneity. Although we have not tested any precise transmission channel, it is fair to speculate that IMF involvement in crisis-ridden states may placate minority ethnic groups who otherwise fear that the pain of economic crisis will be borne unfairly by them. The IMF's presence might be acting as a guarantee against ruling group excesses. The results taken together, however, show little support for a large literature that argues that IMF interventions disrupt social peace among ethnic groups.

Several scholars have argued that ethnic fractionalization is a particularly thorny problem for poor reforming

[7] The Heckman selection model involves two steps. In the first step, probit is applied in which we use a dummy measure as the dependent variable if a country has signed on to an IMF loan program. The second step takes into account the information derived from the first step. The OLS method is employed by including the inverse Mills ratio derived from the first step to account for selection.

[8] Economic Freedom data are obtained from the Fraser Institute. See www.freetheworld.com.

[9] The results are not shown out of considerations of space, but they are available in the online appendix.

countries. Our tests of conditional effects between IMF interventions and ethnic group configurations show that IMF interventions in highly fractionalized societies make them safer, contrary to those who argue the centrality of ethnic fractionalization in producing underdevelopment in the developing world (Easterly, 2001). The conditional effects on IMF interventions and polarization and the size of the ethnic group excluded from state power suggest that greater fractionalization is safer, as some have argued (Collier, 2001; de Soysa, 2011) because IMF interventions are conditionally related to higher ethnic tensions only when the size of the minority group is large and when the size of the excluded group increases. This might suggest that IMF involvement may empower large minorities to demand rights when a ruling group is in crisis and requires IMF assistance. Since the debt burden has an independent effect on ethnic tension, it is fair to state that IMF intervention is not 'a fate worse than debt' as some have claimed (George, 1988). It is comforting that poor countries might still safely have access to loans below market rates from the IMF and reform without fear of a breakdown in ethnic relations. Our results support the liberal institutionalist position that sees international institutions playing a positive role in creating global stability.

While we have in many ways simply been able to reject the hypothesis that IMF interventions are dangerous to ethnic peace, we have not been able to demonstrate the exact causal mechanism by which IMF interventions lead to ethnic peace. Whether ethnic peace is effected through improvements in economic conditions because of IMF interventions or the transparency effects that an international agency brings in terms of external constraints on capricious ethnic politics will have to be tested in future studies using the comparative case study based method. Moreover, IMF involvement in countries with relatively large minorities and where larger groups are excluded from state power suggests that groups may mobilize when crises offer windows of opportunity for political advancement. The exact nature of how ethnic tensions unfold under such conditions should be an interesting subject for further study. Future studies should also try to ascertain why and how ethnic tensions sometimes lead to armed rebellion and sometimes do not. Our results, nevertheless, are good news for global policies aimed at increasing human security.

Replication data

The dataset, do-files and online appendix are available at http://www.prio.no/jpr/datasets.

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