What's the beef with fried chicken? Subnational exposure to cultural globalization and domestic conflict in Africa

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Draft version – comments welcome.

This paper is the first assessment of the impact of local exposure to globalization on domestic conflict. I analyze 10363 grid cells in 46 African countries over the period 2000 to 2013. Exposure to globalization is measured with the distance to the next Kentucky Fried Chicken (KFC) restaurant and instrumented with subnational variation in the availability of chicken and temporal variation in national regulatory quality. Domestic conflict is measured as both riots and peaceful protest provided by the Social Conflict in Africa Database (SCAD). Results suggest that geographic proximity to cultural globalization reduces the risk of both riots and peaceful demonstrations. This contradicts anecdotal evidence of conflict-acerbating effects of cultural globalization.

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Introduction

In November 2015, the shut down of an alleged first Iranian franchise of Kentucky Fried Chicken (KFC) caused substantial media attention (BBC 2015; CNN 2015). "The state media reported the opening of the restaurant as a first sign of creeping US influence [...]" (BBC 2015). The non-authorized restaurant used the exact corporate design of the KFC brand owned by Yum! Brands on its building and in its advertisement, as photos on its website and the linked instagram account show (see figure 3 in the annex on page 22).

The matter was resolved and the restaurant reopened when it turned out that it was not an American KFC restaurant:

> Ali Fazeli, head of the Iranian chamber of commerce, confirmed that the Iranian KFC has no connection with KFC in the US, according to ILNA press agency. "In accordance with orders from the Supreme Leader, we do not give any authorisation to Western brands" in the fast food sector, Fazeli said. (BBC 2015)

Iran may be one of the countries that reacts most strongly to U.S. involvement, and the reactions towards American symbols may depend very much on the regional context. But this example shows that the globalization of a "commodified output of the cultural industries" (Anheier and Isar 2007: 9) – in this case the American-way-of-life fast-food industries – can spark tensions, not only between the nations involved in the exchange, but also between groups within the recipient country that disagree on the appropriateness of the foreign culture. For example, the Westgate Mall in Nairobi was the location of a terrorist attack in 2013 that left more than 70 dead.[1]

Empirical studies employing cross-country data – predominantly making use the KOF index of globalization (Dreher 2006) – have linked (mostly economic) globalization to conflict, but not with consistent results. In general, the relationship between globalization and conflict has

[1] http://edition.cnn.com/2013/09/24/world/africa/kenya-mall-attack-timeline/

received less attention than the apparently more direct link of globalization and economic growth, but critics of globalization have long ago pointed out the threat that globalization-induced inequality may pose. Studies focusing on the economic effects of globalization have argued that globalization-induced growth reduces conflict, whereas globalization-induced inequality increases conflict (Cederman, Weidmann, and Gleditsch 2011; Hegre, Gissinger, and Gleditsch 2003; Østby, Nordås, and Rød 2009). While distributional effects on violence will most likely cover a large part of the relationship between globalization and conflict, there may also be less economic motivations for both peace and conflict. This may include appeasement through adaptation to a Western way of living or resistance aimed at protecting local traditions (Aronowitz and Gautney 2003; Beck 2005; Mittelman 2000).

This is where cultural globalization comes in. "Culture" is often considered an ambiguous and difficult-to-grasp term in the quantitative social sciences, but Ralf Dahrendorf (foreword in Anheier and Isar 2007) notes that globalization actually began as a cultural phenomenon: simulatenously available data was the seed for economic and political globalization. Only have the consequences of cultural globalization for domestic conflict been rarely studied rigorously from a comparative perspective, also due to a lack of appropriate data.[2]

The present study sets out to test the anecdotal evidence of a link between cultural globalization and (domestic) conflict with subnational data on the location of KFC restaurants as an indicator of globalization. While this indicator may not mirror the whole spectrum of globalization, this is a first step towards droppping the untenable assumption that globalization affects a country uniformly (cp. Martens et al. 2015). All quantitative studies to date have measured globalization on the country level. New, spatially disaggregated data now opens new possibilities for tracing causal mechanisms more closely even in large-n settings. With the very same aim, the quantitative study of civil conflict has increasingly employed spatial disaggregation. This is the first study that expands this approach to the

[2] Olzak (2011), for example, finds that "[...] economic globalization and cultural globalization significantly increase fatalities from ethnic conflicts [...]"

question whether globalization induces conflict and proposes subnational indicators on the exposition to globalization. Several studies that focus on somewhat international (and thus potentially globalizing) factors exist, but their purported causal mechanisms refer to strategic concerns such as communication for mobilizing resistance (Pierskalla and Hollenbach 2013) or greed-based attacks on mining regions (Berman et al. 2014).

The remainder of this study will discuss (1) the term globalization and how local exposure to to globalization may aggravate or mitigate conflict, (2) the (subnational) data available to asses this relationship, (3) the estimation strategy applied to this data, (4) the estimation results and (5) their implications for further research.

Theory

What is globalization? Keohane and Nye Jr. (2000) criticize that "globalization" is a directed definition because it implies a monotonous movements towards more interdependence. This must not necessarily always be the case, as, for example, the inter-war period in the 20th century has shown. They thus suggest the term "globalism", a "state of the world involving networks of interdependence at multicontinental distances" (Keohane and Nye Jr. 2000: 105). Globalism (used interchangeably in this paper with the more conventional term "globalization") is thus distinguished from the more generic term interdependence by the plurality of links (versus the possibility of simply bilateral relationships) and the location of the nodes on different continents.

The links may be of very different nature. Keohane and Nye Jr. (2000): 106 distinguish four dimensions of globalization:

1) economic: "long-distance flows of goods, services, and capital";
2) military: "long-distance networks in which force, and the threat or promise of force, are employed";

3) environmental: "long-distance transport of materials in the atmosphere or oceas, or of biological substances such as pathogens or genetic materials, that affect human health and well-being";

4) and social and cultural: "movement of ideas, information, images, and people".

Here I will focus on cultural globalization, as it is more easily attributable to specific locations and its impact on conflict is more easily separable from alternative explanations. Economic globalization does not vary subnationally in policies, such as trade openness. Actual investments of foreign companies such as mining operations do vary, but they exert effects on conflict that are separate from their global nature. Berman et al. (2014), for example, present a logic of greed that explains conflict initiation with the presence of mines. The global link is international metal prices as their instrument for the attractiveness of mines, but this is not a story of globalization. Military globalization such as UN peacekeeping is certainly conflict-relevant, but this causal proximity makes military globalization endogenous to the study of conflict occurrence. Environmental globalization such as human-induced global warming is being discussed as a driver of conflict (Hendrix and Salehyan 2012), but the local exposition towards these forces is much more difficult to pinpoint, not least due to the uncertainty in climate change predictions. I thus focus on cultural globalization, which is conceptually different from violent conflict and comparatively easy to locate with observable indicators.

The UNDP Human Development Report 2004 identified three types of cultural interaction between countries (Fukuda-Parr et al. 2004): "flows of investments and knowledge; flows of cultural goods; and flows of people". KFC restaurants are thus investments that transfer cultural goods. Despite being classified as a cultural factor, they may also impact conflict via economic channels.

The economic impact of fast food restaurants on conflict

Hegre, Gissinger, and Gleditsch (2003) suggest two causal pathways for economic globalization: The liberal model and the structuralist model. The liberal model posits that globalization causes growth, which in turn fosters peace and democracy (see also Barbieri and Reuveny 2005; Flaten and De Soysa 2012). Improved democracy will then contribute to maintaining the peace. The structuralist model posits that globalization causes inequality and thus leads to conflict.[3]

On the micro level, fast food chains may have some very limited positive economic consequences: They can create job opportunities or trickle-down effects, but these are likely to be much stronger in the area that receives foreign investment, or at least in its surroundings. This results in increased opportunity costs for conflict in globalized locales. Stretching the argument of champions of globalization and growth (e.g., Sachs and Warner 1995) would thus predict that KFC restaurants may contribute to reducing conflict.

The net effect could, however, also be detrimental. The comparative literature on globalization and conflict discusses various channels of transmission between globalization and conflict, including inequality and audience costs (Blanton and Apodaca 2007; Elbadawi and Hegre 2008; Gissinger and Gleditsch 1999; Goldberg and Pavcnik 2007). Chua (2004) argues that that globalization is harmful in combination with democracy, where the emergence of market-dominant minorities can cause hatred. Bezemer and Jong-A-Pin (2013) report empirical support for this hypothesis from a study on Sub-Saharan Africa.

Arguing with sceptics such as Stiglitz (2002), fast food chains might exacerbate conflict on the micro level because inequality is felt much more in a local context than over distance. This increases grievances locally and might result in more conflict. USAID and the Gates Foundation promote the farming of soy-beans by small farmers in order to supply the chicken

[3]The distribution of wealth is at the core of almost all theories of intrastate conflict (Lichbach 1989: 432). However, even if globalization should decrease inequality, conflict could follow. This would happen if inequality was so extreme that it muted conflict, assuming an inverse-U-shaped relationship between inequality and conflict (Lichbach 1989: 439).

industry (Park 2014). This may increase the suitability of chicken for standardized buyers like KFC, but it will also raise the prices, thus appeasing the upper-middle class, while impoverishing the lower classes. The fact that modernization can be introduced into sub-groups of a people can exacerbate tensions further (cp. Anheier and Isar 2007: 8). This situation is worsened when nation states are more able to manage globalization. The "race to the bottom" (**???**) reduces corporate taxation and social standards. But there is also a large non-economic, symbolic effect that fast food chains can have on conflict dynamics.

The cultural impact of fast food restaurants on conflict

Fast food is an unmistakeably American influence. While McDonald's may offer the occasional localized burger, the succint and flashy design of fast food franchises leaves no doubt about the origin of the restaurant. It thus rather resembles a process of imposition, rather than of diffusion or emulation (cp. Anheier and Isar 2007: 12). Barber (1992) phrased the term "McWorld" for this aggressive, consumerist variant of globalisation that stands in stark contrast with the tribal, reactive counterpart of "Jihadism".

Such a (perceived) imposition of values and norms may invoke strong resistance of people who want to defend their tradtions against global threats (cp. Beck 2005). Globalization thus fuels the "clash of civilizations" (Huntington 1997). For example, the Zapatista movement in Chiapas considered the "intrusion of global market forces [to be] disrupting their communities, their lives, and their survival strategies" (Mason 2003: 32). But the fierce resistance to American influences may apply particularly South America, for example with the indigenous movements in the Andean countries or the Chiapas movement in Mexico (Mason 2003).

KFC South Africa notably takes a different stance on this issue: It uses peace as a motive of an advertisement in South Africa (see figure 3 in the annex on page 22).

Fast food may very well appease people. Given the high prestige of Western fast food in developing nations, the availability of KFC may cause a feeling of belonging to the winners

of globalization. It provides distraction; together with the entertainment industries, the new "opium for the masses". Such an adaptation to Western values and norms would mitigate conflict, both internally and with the dominating economic forces from overseas.

This adds further doubt to the question whether globalization is really such a divisive force, as the anecdotes imply. Kaldor, Anheier, and Glasius (2003) find that most people are either "redistributive globalizers" that want to tame globalization, or "regressive globalizers" that want to globalize on their own terms, but that there are hardly any outright supporters or rejectionists.

Finally, any protest, riot or movement requires some kind of organizing force. Since these forces are mostly found in the co-opted elites that are able to endulge in luxury goods such as buckets of American-style chicken, conflict may be muted where cultural globalization is available.

In sum, appeasement seems to have more chances, at least on the African continent, where anti-Americanism is not as widespread as in Latin America or the Middle East. The two hypotheses thus read:

H1: Riots are less likely in locations affected by cultural globalization.

H2: Demonstrations are less likely in locations affected by cultural globalization.

Data

KFC as an indicator for cultural globalization

> *Cultural patterns and changes – including the values, aspirations, meanings, representations and identities they express or suppress, and the ways people appropriate them across the world – remain largely unmeasured and unanalyzed.* (Anheier and Isar 2007: 4)

An exception to this rule on the cross-national level is the number of McDonald's restaurants, as used in the KOF-Index (Dreher 2006). This decision has caused criticism:

> *For instance, Dreher interprets the cultural dimension of globalization in terms of the 'domination of American cultural products', thus to discover – lo and behold! – that the most culturally globalized country is the USA.* (Caselli 2008: 389–90)

> *Dreher's position is even more untenable if we consider that he measures this dimension more concretely by using the number of McDonald's restaurants on the national territory as his indicator. But why, one asks, should one not instead measure the level of cultural globalization in terms of the number of Chinese restaurants or Italian pizzerias?* (Caselli 2008: endnote 14)

I do not share this criticism. Globally, Western culture is still crowding out local traditions more than any contender. It brings Hollywood, European football and American fast food to most inhabited places today, but also to more remote places, with substantial variation in both. While fast food restaurants may at first sight seem to be an economic factor, they have, far beyond their economic importance, a symbolic power that conveys a clear message of globalized values: "Indeed, social and cultural globalism interacts with other types of globalism, because military, environmental, and economic activity convey information and generate ideas [...]" (Keohane and Nye Jr. 2000: 107).

However, McDonald's is not very useful for measuring globalization in Africa: Only Egypt, Morocco and South Africa have McDonald's restaurants (plus Tunisia since 2015; Radlicki 2015). Kentucky Fried Chicken (KFC) has a much more widespread presence. Being the first global fast food chain to enter a market has been an explicit strategy of KFC (Steyn 2013). KFC, in South Africa, is prestigious, and people spend on it when they can: sales rise by 60% on pay day (Steyn 2013).

I hand-coded KFC restaurants in all African countries except South Africa with google map search. South African KFCs were coded automatically by google API requests looping through a list of the 700 largest South African cities. This procedure identified 680 restaurant locations. Yum! Brands, the owner of KFC, lists 1,027 restaurants in Africa on their website.[4] This amounts to 66 percent coverage. In South Africa, I detect 560[5] out of 771 restaurant locations (73 percent), in the rest of Africa 120 out of 256 (47 percent). This needs to be improved in future iterations, but since KFCs cluster in large cities, the aggregate data on the grid level will have much less than 34 percent false negative cells.

The geographic information was combined with information from Yum! Brands, providing information on the year that KFC started operations in each country. Within country variation on the start of operations of each restaurant is not currently available.

Instrumental variables: chicken density and regulatory quality

Cultural globalizers may of course self-select into peaceful regions, or areas that are open towards their practices. American fast food chains will hardly open restaurants in areas where these are likely to be burnt down. Keohane and Nye Jr. (2000, 110) and others call this "cultural distance", which differs across pairs of countries and may inhibit the absorption of cultural practices.

This is why I need an identification strategy to claim that I will be investigating a causal relationship between globalization and conflict. Factors that lead to the establishment of KFC restaurants but that are not related to conflict facilitate such a strategy. KFC Africa director Keith Warren says about the expansion of KFC in Nigeria: "We are finding that the only limiting factor we've got in Nigeria right now is actually chicken supply, and finding suppliers who are able to meet our global quality standards in sufficient quantity." (Maritz 2012)

[4] http://www.yum.com/company/map.asp

[5] This happens to be the numerical country code of South Africa as defined by Gleditsch and Ward, but this is mere coincidence and not a programming error.

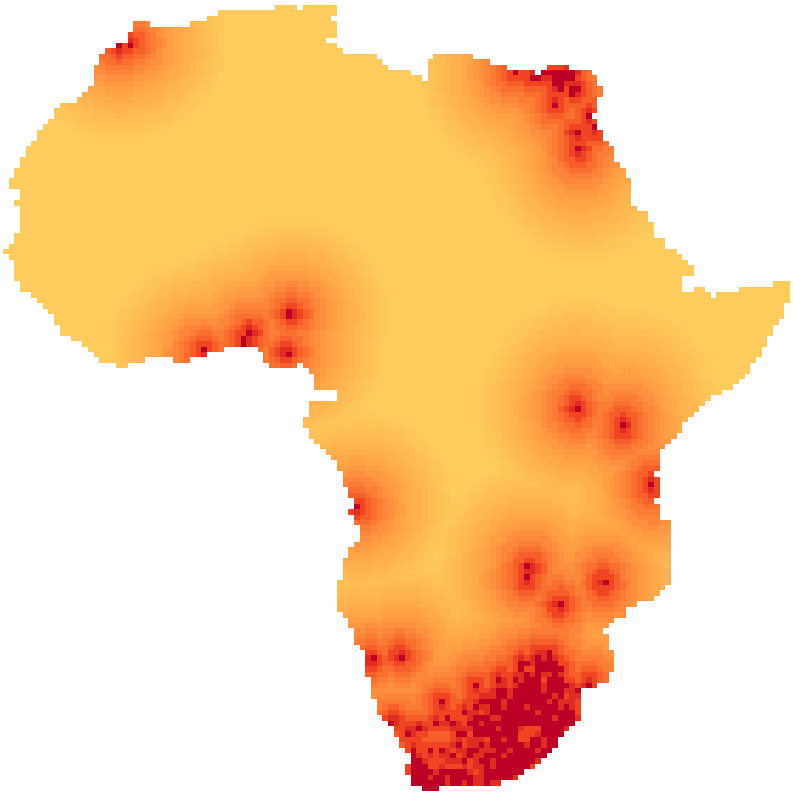

Figure 1: Distance to grid cells with KFC restaurants 2013 (darkest cells contain franchises)

KFC chicken is rarely imported, it is mostly sources locally, particularly for the trademark "on-the-bone chicken" (Steyn 2013). Sometimes short-distance imports are attempted by KFC, but in Zimbabwe, for example, local authorities insisted on the use of locally produced chicken (Ndlovu 2014); they do however source their potatoes from South Africa (Mtomba 2014).

Chicken is hardly related to conflict. While chicken farming may be hurt by ongoing conflict, the short raising time and the low infrastructural demands of chicken allow stocks to quickly recover from past shocks. Furthermore, chicken densitites are only avaialble for a cross-section without temporal variation – they thus do not react to current conflict, and for previous conflict, I can control. I obtain the data from an FAO research group (Robinson et al. 2014) and choose the subcategory "intensive chicken farming", which is what a chain such as KFC requires (instead of subsistency farming), and which is also of better data quality than extensive chicken farming data. The data was generated based on lifestock statistics on various levels of administration and then broken down to the grid level with a model predicting the suitability of an area for chicken farming. But chicken alone is not sufficient to start a business, and the lack of temporal variance makes chicken an incomplete instrument.

Incidentally, Warren has another request to potential host countries: "We have countries in which we operate where the chicken is the most expensive chicken in the world. It is the most inefficiently produced chicken in the world. It is the lowest standard chicken in the world. And it is all because the government is protecting the local industry" (Maritz 2012). The establishment of fast food franchises is thus facilitated by "the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" (Kaufman and Kraay 2015) – the very definition of the "regulatory quality" indicator of the Worldwide Governance Indicators. This indicator is only available on the country level.[6] But its interaction with chicken density has sufficient temporal and

[6]With a similar argument; Pierskalla and Hollenbach (2013) use regulatory quality as an instrument for subnational variation in cellphone coverage, but they do not provide an additional instrument which varies subnationally.

subnational spatial variation, is a good predictor of KFC locations (as will be shown) and fulfills the exclusion restriction, since regulatory quality is largely independent of conflict (cp. Pierskalla and Hollenbach 2013).[7]

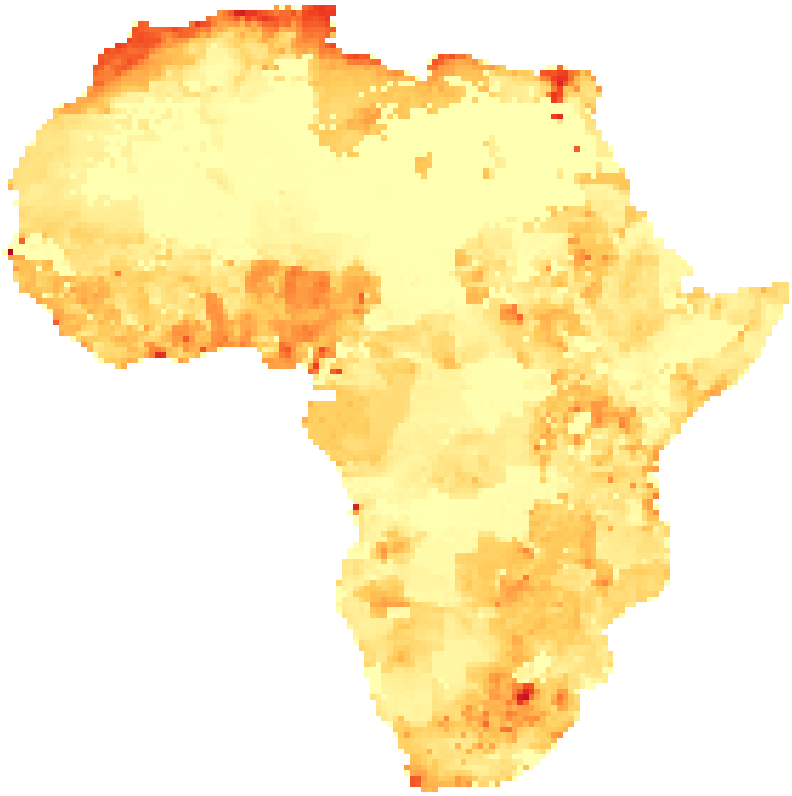

Figure 2: Density of extensive chicken farming (Robinson et al. 2014)

Domestic conflict

Violent unrest data is taken from the Social Conflict in Africa Database (SCAD) (Salehyan et al. 2012). The SCAD covers the period 1990-2013 and provides data for 48 African countries. It contains information on 11,315 social conflicts and provides much more detail than conventional sources (e.g., Banks and Wilson 2013). The SCAD is based on a systematic

[7]See Nunn and Qian (2014) for a similar identification strategy with interacted instruments.

coding of Associated Press and Agence France Presse reports. I join two subcategories of the SCAD to build the riots variable: organized riots and unorganized riots. These are popular demonstrations that involve material or personal damage (Salehyan et al. 2012). I join four subcategories to build the peaceful protest variable: organized peaceful demonstrations, spontaneous peaceful demonstrations, limited strikes and general strikes.

Table 1 lists the main variables used in the analysis, their spatio-temporal resolutions and their sources.

Table 1: Core variables: spatio-temporal resolutions and sources

Variable	Spatial resolution	Temporal resolution	Source
Explanatory:			
KFC restaurant locations	points	yearly	Google maps
Instrumental:			
Extensive chicken rearing density	grid	invariant	Robinson et al. 2014
Regulatory quality	country	yearly	Kaufman and Kraay 2015
Explained:			
Riot locations	points	daily	Salehyan et al. 2012
Peaceful protest locations	points	daily	Salehyan et al. 2012

Control variables

For the analysis below, I employ a similar set of control variables as Pierskalla and Hollenbach (2013). This includes previous conflict, distance to the border, distance to the capital (both Weidmann, Kuse, and Gleditsch 2010), population (Center for International Earth Science Information Network (CIESIN) and Centro Internacional de Agricultura Tropical (CIAT) 2005), percentage of mountainous terrain in the grid cell (Blyth et al. 2002), percentage of irrigated terrain in the grid cell (Siebert et al. 2014) and GDP per capita (Nordhaus 2006). Additional variables that were added to control for the urban and center (versus periphery) bias of both KFC restaurants and protests are the percentage of urban area in the grid cell (Meiyappan and Jain 2012) and travel times to bigger cities (Uchida and Nelson 2009). The temporal coverage of these grid-level controls is not very good – GDP per capita, for example, is only available in five-year intervals. Control variables that have temporal gaps

were interpolated linearly. All data was obtained from the PRIO-Grid version 2.0 (**???**).

Unit of analysis

The unit of analysis of this study are grid-cell years. Disaggregated studies of conflict often employ this approach, and the Peace Research Institute Olso has published a convenient master grid with cells of approximately 50x50km size near the equator; cells further North and South are smaller, since degree differences are kept constant (**???**). It allows the researcher to compare roughly equally-sized areas that have experienced conflict with those that have not, independent of administrative units that may differ severely in size between countries. Table 2 shows the summary statistics for the entire dataset. It covers the period 2000 to 2013. Each year contains 10363 grid cells, and the sample a total of 145418 grid cells.

Empirical analysis

Instrumental variable regression can be run with models adapted to limited dependent variables, and will be in future iterations of this paper. For now, I will employ a simple two-stage least-squares approach, i.e., a linear probability model (LPM) with instrumental variables (IV). The main explanatory variable, KFC restaurant location, is binary in nature (or could be a count of the restaurants within the grid cell), but I will emply the distance of all grid cells to the next KFC, stopping the count after approximately 500 kilometers. The distance scale is in grid cell units, i.e., approximately 50 kilometers. Moreover, the variable is transformed with the natural logarithm to further emphasize the declining marginal effect that a KFC will presumably have on its surroundings.

The dependent variables – riot and peaceful protest onset – are coded as 1 for the year when the episode starts and as 0 in years without conflict. Ongoing conflict is coded as zero to avoid biased estimation (McGrath 2015).

Table 2: Summary statistics

Statistic	N	Mean	St. Dev.	Min	Max
Grid ID	145,418	139,627.000	25,094.680	79,599	183,263
Year	145,418	2,006.499	4.030	2,000	2,013
Latitude	145,418	17.678	15.289	−17.750	51.250
Longitude	145,418	6.938	17.435	−34.750	37.250
Country code	145,418	535.674	68.438	404	651
Grid cells in country	145,418	445.521	251.810	3	870
KFC	145,418	0.029	0.167	0	1
Distance to KFC	145,418	16.586	10.186	0	44
Distance to KFC (500km)	145,418	8.419	2.879	0	10
Distance to KFC (1000km)	145,418	13.734	6.690	0	20
Chicken	145,418	42.765	431.284	0.000	28,866.210
Regulatory quality	135,052	−0.787	0.658	−2.665	0.791
Peaceful protest	145,418	0.007	0.085	0	1
Peaceful protest before 2000	145,418	0.014	0.117	0	1
Peaceful protest onset	145,300	0.006	0.080	0	1
Violent unrest	145,418	0.011	0.104	0	1
Violent unrest before 2000	145,418	0.028	0.164	0	1
Violent unrest onset	145,338	0.010	0.102	0	1
Domestic unrest	145,418	0.016	0.126	0	1
Domestic unrest before 2000	145,418	0.035	0.183	0	1
Domestic unrest onset	145,222	0.015	0.121	0	1
Riots	145,418	0.006	0.075	0	1
Riots before 2000	145,418	0.016	0.127	0	1
Riot onset	145,342	0.005	0.072	0	1
Population	145,418	86,063.100	272,630.000	0.000	12,416,010.000
Mountains	143,611	0.136	0.257	0.000	1.000
Irrigation	145,348	1,190.443	8,527.899	0.000	249,222.000
GDP	139,804	0.192	0.838	0.000	21.260
Travel time	145,376	714.513	731.161	12.000	6,133.241
Urban	141,229	0.131	0.671	0.000	22.390
Agriculture	141,229	7.514	13.806	0.000	99.030
Pasture	141,229	27.465	27.796	0.000	100.000
Night lights	145,418	0.049	0.034	0.021	0.957
Border distance	145,418	168.137	136.304	0.003	692.577
Capital distance	145,418	655.626	417.546	3.986	1,947.954

Table 3 presents the results for the effects of cultural globalization on riots. Models 1 and 2 are logit models without instrumental variables. Model 1 with KFC distance as the only explanatory variable provides a negative and significant correlation, indicating that grid cells that are far from KFCs experiences less riots, cells close to KFCs more riots. This makes sense, since KFCs are found in more populated areas, where more riots should occur. Adding all control variables[8], including a dummy indicating the occurrence of riots before the year 2000 as well as year and country fixed effects makes the relationship insignificant, but it remains negative.

The instrumental variable models (3 and 4) display positive significant coefficients, indicating that areas close to KFCs experience less riots. The weak instruments and Wu-Hausman tests indicate that our instrument is sufficiently strong, and that the IV model differs substantially from a naive estimation.[9] If the exclusion restriction holds, this result would provide support to hypothesis 1, that KFC proximity reduces the willingness to riot. We can not say, however, whether the apparent effect is due to a reporting bias in the riot data: countries that are more developed have more KFCs, but also more media to report conflict.

The control variables behave inconspiciously, except for population, which has a negative significant (althoug tiny) effect on riot occurrence – I would have expected the opposite.

Table 4 presents the results for peaceful protest. The results are very similar to the riot results. Only the effect is smaller and the explanatory power of the model much larger, as judging from the R^2 scores. A one percent increase in the distance to a KFC increases the probability of a riot by 4 percentage points, and that of peacful protest only by 1.7 in the point estimate.

[8]The variance inflation factor is well under 5 for all explanatory variables.

[9]The F-score for the weak instruments test is suspiciously high, however, and might deserve another look.

	Model 1	Model 2	Model 3	Model 4
Intercept	-4.4118^{***}	-21.7487	-0.0139^{***}	-0.0885^{***}
	(0.0982)	(2572.9828)	(0.0037)	(0.0120)
Distance to KFC (ln)	-0.3520^{***}	-0.1694	0.0108^{***}	0.0401^{***}
	(0.0403)	(0.1090)	(0.0008)	(0.0048)
Riots before 2000		3.2817^{***}	0.1429^{***}	0.1430^{***}
		(0.0914)	(0.0016)	(0.0017)
Population (ln)		0.0723	-0.0003^{*}	-0.0005^{*}
		(0.0409)	(0.0001)	(0.0002)
GDP (ln)		-0.2909	0.0143^{***}	0.0159^{***}
		(0.1741)	(0.0011)	(0.0018)
Capital distance (ln)		-0.0981^{*}	-0.0001	-0.0010^{***}
		(0.0410)	(0.0002)	(0.0002)
Border distance (ln)		-0.1693^{*}	-0.0008^{*}	-0.0062^{***}
		(0.0796)	(0.0003)	(0.0008)
Mountains		0.9197^{***}	0.0086^{***}	0.0120^{***}
		(0.1653)	(0.0009)	(0.0012)
Irrigation (ln)		0.0615^{***}	0.0006^{***}	0.0007^{***}
		(0.0155)	(0.0001)	(0.0001)
Urban (ln)		0.4117^{**}	0.0043^{***}	0.0057^{***}
		(0.1553)	(0.0010)	(0.0011)
Travel time (ln)		0.1136	-0.0010^{*}	-0.0005
		(0.0788)	(0.0004)	(0.0004)
Year fixed effects	no	yes	no	yes
Country fixed effects	no	yes	no	yes
Model	Logit	Logit	LPM-IV	LPM-IV
Weak instruments			24038^{***}	2359.54^{***}
			$(< 2e^{-16})$	$(< 2e^{-16})$
Wu-Hausman			207^{***}	81.05^{***}
			$(< 2e^{-16})$	$(< 2e^{-16})$
AIC	9395.8437	6407.1016		
BIC	9415.6174	7065.0218		
Log Likelihood	-4695.9218	-3136.5508		
Deviance	9391.8437	6273.1016		
Num. obs.	145342	135904	126213	126213
R^2			0.0587	0.0395
Adj. R^2			0.0587	0.0390
RMSE			0.0697	0.0704

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

LPM-IV: Linear probability model with instrumental variable.

Instrumental variable in first stage: interaction between chicken density and regulatory quality.

Table 3: Riot onset

	Model 1	Model 2	Model 3	Model 4
Intercept	-4.4463^{***}	-18.9934	-0.0009	-0.0208
	(0.0959)	(2585.4456)	(0.0038)	(0.0121)
Distance to KFC (ln)	-0.2424^{***}	0.2057	0.0043^{***}	0.0165^{***}
	(0.0384)	(0.1227)	(0.0008)	(0.0048)
Riots before 2000		4.9742^{***}	0.3104^{***}	0.3092^{***}
		(0.0882)	(0.0018)	(0.0018)
Population (ln)		-0.1597^{***}	-0.0005^{***}	-0.0014^{***}
		(0.0316)	(0.0001)	(0.0002)
GDP (ln)		-0.3345	0.0039^{***}	0.0049^{**}
		(0.1978)	(0.0011)	(0.0018)
Capital distance (ln)		-0.1794^{***}	-0.0004^{*}	-0.0010^{***}
		(0.0386)	(0.0002)	(0.0002)
Border distance (ln)		-0.2898^{***}	-0.0005	-0.0034^{***}
		(0.0801)	(0.0003)	(0.0008)
Mountains		-0.0775	0.0028^{**}	0.0030^{*}
		(0.2003)	(0.0009)	(0.0012)
Irrigation (ln)		0.0313	0.0003^{***}	0.0005^{***}
		(0.0163)	(0.0001)	(0.0001)
Urban (ln)		1.0001^{***}	0.0072^{***}	0.0088^{***}
		(0.1605)	(0.0010)	(0.0011)
Travel time (ln)		0.0175	0.0001	-0.0001
		(0.0735)	(0.0004)	(0.0005)
Year fixed effects	no	yes	no	yes
Country fixed effects	no	yes	no	yes
Model	Logit	Logit	LPM-IV	LPM-IV
Weak instruments			24160.48^{***}	2356.03^{***}
			($< 2e^{-16}$)	($< 2e^{-16}$)
Wu-Hausman			29.96^{***}	10.29^{**}
			($4.43e^{-08}$)	(0.0013)
AIC	11307.8025	6213.6179		
BIC	11327.5757	6871.5247		
Log Likelihood	-5651.9013	-3039.8089		
Deviance	11303.8025	6079.6179		
Num. obs.	145300	135877	126183	126183
R^2			0.1942	0.1942
Adj. R^2			0.1941	0.1938
RMSE			0.0715	0.0715

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

LPM-IV: Linear probability model with instrumental variable.

Instrumental variable in first stage: interaction between chicken density and regulatory quality.

Table 4: Nonviolent protest onset

Discussion

The IV regressions provide support for both hypotheses that were tested. Nonetheless, some caveats must be mentioned.

While local and contemporaneous effects were found , it is worth discussing the spatial and temporal range that the true effects could obtain. While the effect of local exposition to globalization may indeed be local in some cases, it may also have a certain geographic range, or even lead to effects in distant places. For example, the establishment of a deepwater port for exporting raw materials may draw workers from a large radius around the port. But it may also mobilize issue groups in the capital, far away from the port, who oppose the export of primary resources and take the establishment of the port as an incentive to lobby forcefully for a different industrial and trade policy.

Then also the time lags between exposition to globalization and its effect may differ. Long-term effects can build on experience. In the economic sphere, actors should be able to assess whether globalization has brought growth or increased inequality. The short-term reactions must build on predictions of how the external involvement will play out. In the cultural sphere, the long term will either bring adaptation or estrangement. Initial short-term reactions would rather build on appeasement or distraction if they are conflict-reducing, and on resistance in order to protect social constructs if they are conflict-enhancing. Bussmann and Schneider (2007), using data on trade openness and foreign direct investments, find evidence that high levels of globalization seem to bring peace, whereas changes in the levels of globalization cause unrest. They call this the "distributional theory of civil war", and derive it as a variant of the more optimistic "commercial liberalism".

Another problem of the grid approach is that it artificially inflates the number of observations. A hundred empty desert cells where nothing ever happens add more "information" to a simple additive model than the center of Johannesburg.

Conclusion

Globalization is irreversible, but opinions on its net effects on human welfare still diverge. Only rigorous empirical research can help clarify this relationship and help better manage globalization. This study provide a first spatially disaggregated investigation into the effects of globalization on violent conflict. The results are quite consistent and stand even the most conservatie tests with year and country fixed effects and past conflict occurrence Nonetheless, improvements on data coverage and estimation strategy may change the implications.

From this conceptually narrow, but spatially disaggregated point of view, there is little support for the sceptics' expectation that "people will riot" (Stiglitz 2002). Of course, other, indirect mechanisms of globalization need to be taken into account, such as the shrinking of the welfare state in less-developed countries (Rudra 2002). It may very well be that effects are more heterogeneous than could be detected here. Random coefficient models could potentially help differentiate the relationship.

Finally, some of the anecdotal evidence such as on the Zapatista movement indicates that ethnic composition may matter for conditioning the effects of spatial disaggregation (see also Olzak 2011). Taking the spatial distribution of ethnic groups into account could improve our understanding of the globalizationa and conflict link (Vogt et al. 2015).

Appendix

Figure 3: A somewhat puzzling advertisement from the website of the unauthorized KFC franchise in Tehran (`http://kfciran.ir/`)

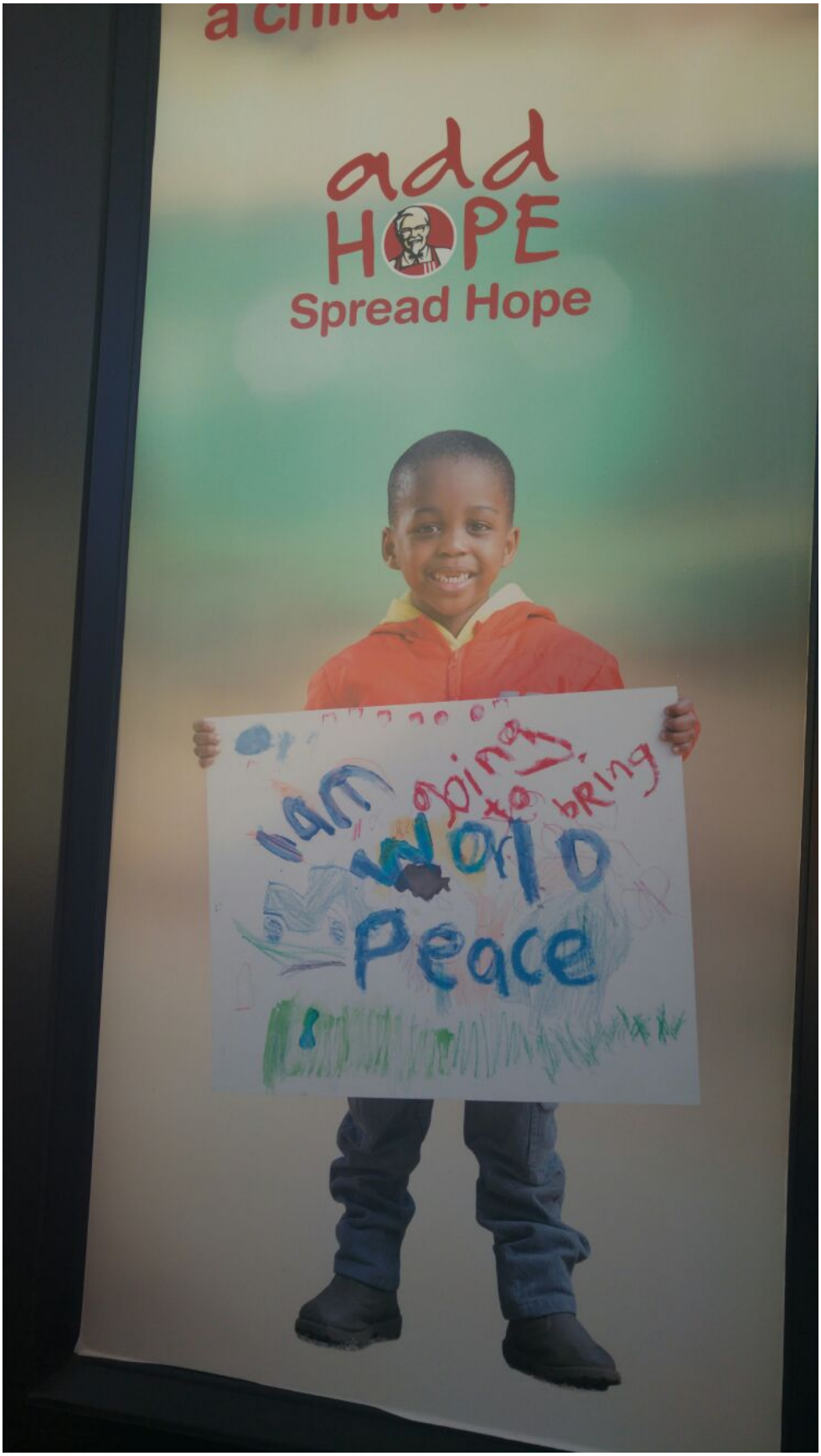

Figure 4: An advertisement by KFC South Africa raises expectations (photo: Manuel Bollmann)

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