

The University of Chicago

U.S. Food Aid, Civil Conflict, and the End of the Cold War

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June 2021

A paper submitted in partial fulfillment of the requirements for the Master of Arts degree in the
Master of Arts Program in the Committee on International Relations

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Foreign aid is a key component of developed countries' foreign policies, particularly when interacting with developing countries. However, foreign aid has received a significant amount of criticism in recent years. Academics and aid workers question its effectiveness as a foreign policy tool. Even more damaging, a growing literature contends that foreign aid can have the unintended consequences of increasing conflict onset, duration, and intensity in recipient countries, thus causing more harm than good. In the face of these criticisms, there are also those who defend foreign aid and contest the very existence of a relationship between foreign aid and conflict. In sum, there remains a lack of consensus about the connection between foreign aid and conflict.

Why are scholars unable to identify a consistent relationship between foreign aid and conflict? Although some explanations have been offered, little to no consideration has been given to the effects incurred by changes in the international system. This oversight is unsurprising, as there is a tendency for scholarship of domestic and international politics to be treated as two distinct realms. This thesis builds upon the assumption that this distinction is misguided, and it demonstrates that the end of the Cold War fundamentally changed how civil conflicts are started and fought. Ultimately, this thesis explores whether the changes brought on by the end of the Cold War affected the relationship between foreign aid and conflict incidence. To do so, it addresses the following set of research questions: *Is the effect of U.S. food aid on the incidence of conflict in recipient countries impacted by the end of the Cold War? If so, why?*

To address these questions, this thesis builds upon Nathan Nunn and Nancy Qian's 2014 article "U.S. Food Aid and Civil Conflict."¹ In their article, Nunn and Qian analyze the effect of U.S. food aid on conflict incidence in recipient countries from 1971 – 2006. They find that U.S.

¹ Nathan Nunn and Nancy Qian, "U.S. Food Aid and Civil Conflict," *American Economic Review* 104, no. 6 (2014): 1630–66.

food aid is positively correlated with conflict duration (i.e., U.S. food aid increases the length of conflicts in recipient countries) but has no effect on conflict onset. To test whether the end of the Cold War affects this relationship, this thesis replicates and extends Nunn and Qian's analysis by dividing their overall sample into a Cold War sample (1971-1991) and a post-Cold War sample (1991-2006). By effectively "controlling for" the Cold War, this extension produces results that significantly diverge from Nunn and Qian's findings. The thesis finds that during the Cold War, U.S. food aid is positively correlated with *both* duration and onset; however, after the Cold War, U.S. food aid is not correlated with *either* onset or duration. Thus, in answer to the first research question, *the end of the Cold War does affect the relationship between U.S. food aid and conflict incidence in recipient countries.*

Why does U.S. food aid increase conflict incidence during the Cold War, but not after? In addressing this second research question, this thesis argues that the end of the Cold War fundamentally changed how civil wars are fought, how the state government is perceived, and how foreign aid is distributed. These changes weaken two channels through which foreign aid—especially food aid—increases conflict onset and duration. Essentially, after the Cold War ends, the *divergence channel* is affected by the decline in irregular wars, while the *state weakness channel* is affected by the reduction in uncertainty and transition to multilateral aid. The combined effect is that the end of the Cold War effectively negates the logic behind both channels, thus removing the positive relationship between U.S. food aid and conflict that existed during the Cold War.

With this overview in mind, the remainder of this thesis will proceed in the following way. First, it provides an overview of foreign aid as a policy tool, highlighting its widespread prominence among developed countries like the United States. Second, it considers the theory

behind three potential outcomes of the analysis—that foreign aid increases conflict incidence, foreign aid decreases conflict incidence, and foreign aid has no effect on conflict incidence—to ground the later argument. Third, it replicates and extends Nunn and Qian (2014) to determine whether the end of the Cold War affects the relationship between food aid and conflict incidence in recipient countries. Fourth, it explores why U.S. food aid only increases conflict incidence during the Cold War. It argues that the end of the Cold War disrupts two channels—the divergence channel and state weakness channel—through which food aid increased conflict incidence during the Cold War. Fifth, it concludes by prescribing a direction for further research.

I. Foreign Aid as a Policy Tool

After the end of World War II, the United States launched the “Economic Recovery Program” (more commonly referred to as the “Marshall Plan”) to help rebuild Western Europe and contain the spread of Communism and the Soviet Union.² Since then, foreign aid has become a key policy tool for the United States and other countries around the world, and its prevalence has only continued to grow. To give an idea of the enormous influence of foreign aid, over the past 70 years foreign aid donors have given more than \$7 trillion (USD) in foreign economic assistance to developing countries.³ For many of these recipient developing countries, this foreign aid makes up a significant part of their economy. Indeed, for many developing countries, foreign aid comprises over 10% of their gross national income.⁴ This immense amount

² Marian L. Lawson and Emily M. Morgenstern, “Foreign Assistance: An Introduction to U.S. Programs and Policy,” CRS Report for Congress (Congressional Research Service, April 30, 2020).

³ Michael J. Tierney et al., “More Dollars than Sense: Refining Our Knowledge of Development Finance Using AidData,” *World Development*, Expanding Our Understanding of Aid with a New Generation in Development Finance Information, 39, no. 11 (November 1, 2011): 1891–1906, <https://doi.org/10.1016/j.worlddev.2011.07.029>.

⁴ Alberto Chong and Mark Gradstein, “What Determines Foreign Aid? The Donors’ Perspective,” *Journal of Development Economics* 87, no. 1 (August 1, 2008): 1–13, <https://doi.org/10.1016/j.jdeveco.2007.08.001>.

of foreign aid is not merely large but is growing, currently at “unprecedented high levels.”⁵ Within these trends, the United States sits front and center. Although foreign aid only makes up about 1% of total U.S. spending, the U.S. is the largest foreign aid donor in the world, “accounting for about 20% of total official development assistance from major donor governments in 2018.”⁶ In FY2018 alone (the latest year for which data is available), U.S. developmental assistance comprised an estimated \$46.89 billion.⁷

Before directly examining why the United States and other foreign donors provide so much aid, it is important to recognize that foreign aid itself is broadly conceived, consisting of many different types of aid and government programs. For the United States, *foreign aid* (or *foreign assistance*) is defined under the Foreign Assistance Act of 1961—the fundamental legal basis for these programs—as:

Any tangible or intangible item provided by the United States Government [including “by means of gift, loan, sale, credit, or guaranty”] to a foreign country or international organization under this or any other Act, including but not limited to any training, service, or technical advice, any item of real, personal, or mixed property, any agricultural commodity, United States dollars, and any currencies of any foreign country which are owned by the United States Government....⁸

Thus, in this broad definition, foreign aid refers to anything tangible, or intangible, which a government provides to a foreign actor. As will be explained later, this broad conception likely accounts for some of the ambiguity surrounding the relationship between foreign aid and conflict

⁵ Michael G. Findley, “Does Foreign Aid Build Peace?,” *Annual Review of Political Science* 21, no. 1 (2018): 360, <https://doi.org/10.1146/annurev-polisci-041916-015516>.

⁶ Lawson and Morgenstern, “Foreign Assistance: An Introduction to U.S. Programs and Policy.”

⁷ Lawson and Morgenstern.

⁸ “Foreign Assistance Act,” U.S.C. § 634(b) (1961).

in recipient countries. Nevertheless, what is clear from this definition is that foreign aid's centrality to a state's overall foreign policy stems from its flexibility. With foreign aid, a donor can become involved in a recipient country's affairs, whether this means training its soldiers or simply providing a loan. In effect, this flexibility allows foreign aid donors to pursue their foreign policy goals in a more substantive way than mere diplomacy, but without the drastic consequences associated with military intervention.

Since foreign aid takes many different forms, it should come as little surprise that countries significantly differ from each other in how they employ foreign aid. For example, the United States and Nordic countries generally provide aid to countries that are poor, democratic, and economically open.⁹ Japan and France, in contrast, typically like to provide their foreign aid to "inefficient, economically closed, mismanaged, non-democratic" former colonies that are politically friendly to them.¹⁰ These two examples demonstrate a pervasive tension that exists within foreign aid distribution around the world—it is either employed for humanitarian purposes (i.e., to raise the well-being of recipient countries) or for strategic reasons (i.e., aid is fundamentally given to fulfill some sort of interest in the donor country). Certainly, humanitarian aid can have strategic motivations (and vice-versa), but the point is that foreign aid distribution is caught between these two types of motivations—one which bases the distribution on the recipient country's interests (i.e., humanitarian) and one that bases it on the donor country's interests (i.e., strategic). The dominant motivation is typically determined by the donor state's foreign policy environment.¹¹ When a state is particularly threatened by its foreign environment, it might be more compelled to utilize foreign aid for strategic reasons. In contrast, when a state is

⁹ Alberto Alesina and David Dollar, "Who Gives Foreign Aid to Whom and Why?," *Journal of Economic Growth* 5, no. 1 (2000): 33–63.

¹⁰ Alesina and Dollar, 33.

¹¹ Alesina and Dollar, "Who Gives Foreign Aid to Whom and Why?"

relatively more secure in its foreign environment, it may be more willing to utilize foreign aid for genuine humanitarian motivations.

This shifting use of foreign aid is clearly reflected in the case of the United States. Since the end of World War II, the U.S. has gone through three broad stages in its approach to foreign aid.¹² The first stage was during the Cold War and began with the Marshall Plan (as alluded to earlier). During this stage, the United States was fundamentally driven by the strategic concern of preventing the spread of communism and Soviet influence. In essence, the tense security environment of great power competition with the Soviet Union compelled the United States to focus its foreign aid in support of its strategic interests. With the fall of the Soviet Union, the United States lost its primary geopolitical competitor and emerged as the world's sole superpower. With this fundamental change in its foreign environment, the United States found itself approaching foreign aid in a new way. During the 1990s, the U.S. focused on regional development priorities, in which foreign aid was applied to such policy goals as counter-narcotics and the HIV/AIDs epidemic.¹³ Certainly, strategic interests did not suddenly disappear from U.S. foreign aid considerations, but during this second stage, humanitarian considerations also clearly assumed a prominent place in decision-making. This second stage of U.S. foreign aid was relatively short lived, as the September 11 terrorist attacks drastically changed the United States' security environment and compelled it to re-focus its foreign aid on strategic interests. More specifically, during this third stage, the United States oriented its foreign aid toward counterterrorism goals and supporting its military invasions of Iraq and Afghanistan. This included the training and equipping of foreign forces, but also development efforts in these

¹² Lawson and Morgenstern, "Foreign Assistance: An Introduction to U.S. Programs and Policy."

¹³ Lawson and Morgenstern, 2.

countries to “win hearts and minds.”¹⁴ One might argue the United States is beginning to enter a new, fourth stage of its approach to foreign aid with the rise of China and reemergence of Russia on the international scene, however this is too early to tell. The key takeaway from this historical survey of U.S. foreign aid is that it can shift, reflecting changes in foreign policy interests and, ultimately, the international system.

What does this discussion of the prominent and flexible role of foreign aid ultimately mean in relation to civil conflict? Essentially, it means foreign aid can have unintended consequences that detract from the goals for which it is designed to achieve. In large part, foreign aid—whether it is given for humanitarian or strategic motivations—is not intended to increase conflict in recipient countries. Although there are occasional examples, particularly during the Cold War, where the U.S. and the Soviet Union provided aid to rebels so they could fight the governing regime, this is not the reality for the vast majority of foreign aid. In other words, if there is a link between conflict and foreign aid, it is largely unintended. This holds important implications for foreign aid as a policy tool. Given foreign aid’s centrality within modern states’ foreign policies, it is critical to understand whether this relationship exists, in order to determine whether foreign aid is an appropriate instrument for helping states achieve their foreign policy goals.

II. Theory: Foreign Aid and Conflict

There are three possible outcomes which this thesis must consider: whether foreign aid increases conflict incidence, foreign aid decreases conflict incidence, or foreign aid has no effect

¹⁴ Lawson and Morgenstern, 2.

on conflict incidence. This section will consider the theory behind all three possible outcomes, to ground the subsequent replication, extension, and argument.

Outcome 1: Aid increases conflict incidence

The first possible outcome is that foreign aid increases conflict incidence in recipient countries. Of the three outcomes, this is ultimately what we should expect in the replication and extension, because this is what Nunn and Qian (2014) find. There are four mechanisms (or channels) through which this relationship might operate.

First, there is the *diversion* or *aid theft* channel.¹⁵ Quite simply, this channel argues that rebels can steal aid (e.g., food, money, medicine, vehicles), which they can either sell to buy weapons or use directly in their conflict against the state. This channel is particularly important to consider, as it is the primary mechanism identified by Nunn and Qian (2014). Furthermore, there exists a great deal of anecdotal evidence confirming the existence of this mechanism. Polman (2010) shows that large-scale theft is common, pointing to examples in Afghanistan (2001–present), Cambodia (1980s), Chad (2008), Ethiopia (1984, 2001–present), Iraq (early 1990s), Kenya (1980s), Nigeria (1967–1979), Rwanda (1994–1996), Sierra Leone (1990s, 2001), South Africa (1990s), Sudan (1982–present), Thailand (1980s), Uganda (1950s), West Timor (1999), and Zaire (1994–1996).¹⁶ Not only is aid theft common and widespread, but it is also significant. Polman (2010) estimates that up to 80% of aid can be stolen before and after it

¹⁵ For literature that explores this channel, see: Nunn and Qian, “U.S. Food Aid and Civil Conflict”; Linda Polman, *The Crisis Caravan: What’s Wrong With Humanitarian Aid?* (Metropolitan Books, 2010); Mary B. Anderson, *Do No Harm: How Aid Can Support Peace—or War* (Boulder, CO: Lynne Rienner Publishers, 1999); Clea Kahn and Elena Lucchi, “Are Humanitarians Fuelling Conflicts? Evidence from Eastern Chad and Darfur” (Humanitarian Practice Network, July 2009), <https://odihpn.org/magazine/are-humanitarians-fuelling-conflicts-evidence-from-eastern-chad-and-darfur/>.

¹⁶ Polman, *The Crisis Caravan: What’s Wrong With Humanitarian Aid?*

reaches its destination.¹⁷ Finally, given that this thesis' analysis focuses on U.S. food aid, the diversion channel is particularly relevant. Anderson (1999) and Kahn and Lucchi (2009) both point out that humanitarian assistance (especially food aid) is uniquely susceptible to aid theft.¹⁸

Second, there is the *state weakness* channel. Essentially, this channel emphasizes foreign aid's potential to negatively impact the recipient state's legitimacy and ability to provide for its population. At its core, this channel rests on the fact that foreign aid is volatile and unreliable. Because aid can be affected by domestic variations in donor countries (and not purely need in recipient countries), it can be hard for a government to plan and carry out reliable policy. This itself can weaken the central government's ability to commit credibly vis-à-vis rebel groups. In other words, the inherent volatility of foreign aid creates uncertainty about recipient governments' ability to govern, thereby increasing the likelihood of conflict onset. Within this channel, there are certain conditions that can further exacerbate these effects, resulting in veritable "aid shocks" in recipient countries. For example, both Burnside and Dollar (2000) and Gutting and Steinwand (2017) show that this volatility associated with foreign aid is exacerbated when the foreign aid is bilateral (i.e., when aid is distributed from one donor country).¹⁹ Additionally, Pederson (1996), Knack (2001), and Tahir (2017) all emphasize that when recipient countries are "aid dependent," they are particularly susceptible to erosions in the quality of governance.²⁰ When it comes to food aid, this channel is applicable, as food aid is notorious

¹⁷ Polman, 121.

¹⁸ Anderson, *Do No Harm: How Aid Can Support Peace—or War*; Kahn and Lucchi, "Are Humanitarians Fuelling Conflicts?"

¹⁹ Craig Burnside and David Dollar, "Aid, Policies, and Growth," *The American Economic Review* 90, no. 4 (September 2000): 847–68; Raynee Gutting and Martin C. Steinwand, "Donor Fragmentation, Aid Shocks, and Violent Political Conflict," *Journal of Conflict Resolution* 61, no. 3 (2017): 643–70.

²⁰ Terri Pederson, "Documents Hint at Bomb Maker's Motives before Beaver Dam Apartment Explosion," *AP NEWS*, February 20, 2019, sec. Beaver Dam, <https://apnews.com/6a64c946c5854fa2af00da65c7e0dfe3>; Stephen Knack, "Aid Dependence and the Quality of Governance: Cross-Country Empirical Tests," *Southern Economic Journal* 68, no. 2 (2001): 310–29, <https://doi.org/10.2307/1061596>; Nadia Tahir, "Does Aid Cause Conflict in Pakistan?," *Defence and Peace Economics* 28, no. 1 (January 2017): 112–35.

for its variation. Indeed, Nunn and Qian's entire methodology is based on this premise.

Therefore, this channel could help explain an increase in conflict incidence in recipient countries.

Third, there is the *predation* channel (also referred to as the *state as a prize* or *rent-seeking* channels).²¹ This channel argues that foreign aid makes states more valuable, which increases rebel incentive to take over, resulting in more conflict. It is less obvious how this mechanism will play a role in the case of food aid. Unlike other forms of foreign aid—such as infrastructure development—food aid is meant to be consumed, so it does not clearly make the state itself more valuable. Thus, although there is evidence for this mechanism with other types of foreign aid, when it comes to food aid, this channel is unlikely to be the explanation for an increase in conflict incidence in recipient countries.

Fourth, the *strategic retaliation* channel expects foreign aid to increase conflict because rebels will try to sabotage the aid program.²² Essentially, rebels fear that foreign aid will raise the population's support for the government (often, a key requirement for success and survival in civil conflict). As a result, they will strategically try to ensure these programs fail. It is difficult to see how this channel is suitable to food aid. When this channel has been observed, it has occurred with infrastructure development programs, not food aid distribution. Furthermore, attacking food aid seems guaranteed to decrease the population's support for the rebel group.

²¹ For literature that explores this channel, see: Herschel I. Grossman, "Foreign Aid and Insurrection," *Defence Economics* 3, no. 4 (1992): 275–88; Jean-Paul Azam, "How to Pay for the Peace? A Theoretical Framework with References to African Countries," *Public Choice* 83, no. 1/2 (1995): 173–84; Reed Wood and Christopher Sullivan, "Doing Harm by Doing Good? The Negative Externalities of Humanitarian Aid Provision during Civil Conflict," *The Journal of Politics* 77, no. 3 (July 2015): 736–48, <https://doi.org/10.1086/681239>; Reed M. Wood and Emily Molfino, "Aiding Victims, Abetting Violence: The Influence of Humanitarian Aid on Violence Patterns During Civil Conflict," *Journal of Global Security Studies* 1, no. 3 (August 1, 2016): 186–203, <https://doi.org/10.1093/jogss/ogw007>; Demet Yalcin Mousseau, "Does Foreign Development Aid Trigger Ethnic War in Developing States?," *Armed Forces & Society*, February 18, 2020, 1–20, <https://doi.org/10.1177/0095327X20902180>.

²² For literature that explores this channel, see: Wood and Sullivan, "Doing Harm by Doing Good?"; Benjamin Crost, Joseph Felner, and Patrick Johnston, "Aid Under Fire: Development Projects and Civil Conflict," *American Economic Review* 104, no. 6 (June 2014): 1833–56.

Doing so would directly counter the strategic logic behind this mechanism. As a result, this channel would also be an unlikely explanation for an increase in conflict incidence in recipient countries due to food aid.

In sum, if the replication and extension provide evidence that U.S. food aid increases conflict incidence in recipient countries, this thesis expects it to do so through the *diversion* and *state weakness* channels.

Outcome 2: Aid decreases conflict incidence

It is also possible that the replication and extension will find that U.S. food aid decreases conflict incidence—in direct opposition to Nunn and Qian (2014). If this is the case, there are three possible explanations to explain such results.

First, there is the *opportunity cost* channel.²³ Stemming from the influential Collier and Hoeffler (2004) article that emphasized the importance of *greed*—rather than *grievance*—for explaining civil war onset,²⁴ this mechanism argues that foreign aid improves public goods and household income opportunities, which increases the opportunity cost of joining and fighting with a rebel group and leads to less conflict. Of the three channels, this would best explain a decrease in conflict incidence from food aid. Because food aid provides a basic, universal need

²³ For literature that explores this channel, see: Awudu Abdulai, Christopher B. Barrett, and John Hoddinott, “Does Food Aid Really Have Disincentive Effects? New Evidence from Sub-Saharan Africa,” *World Development* 33, no. 10 (2005): 1689–1704; Henrik Hansen and Finn Tarp, “Aid and Growth Regressions,” *Journal of Development Economics* 64, no. 2 (April 1, 2001): 547–70, [https://doi.org/10.1016/S0304-3878\(00\)00150-4](https://doi.org/10.1016/S0304-3878(00)00150-4); Paul Collier and Anke Hoeffler, “Aid, Policy and Peace: Reducing the Risks of Civil Conflict,” *Defence and Peace Economics* 13, no. 6 (2002): 435–50, <https://doi.org/10.1080/10242690214335>; Burcu Savun and Daniel C. Tirone, “Exogenous Shocks, Foreign Aid, and Civil War,” *International Organization* 66, no. 3 (2012): 363–93; James Levinsohn and Margaret McMillan, “Does Food Aid Harm the Poor? Household Evidence from Ethiopia” (National Bureau of Economic Research, January 17, 2005), <https://doi.org/10.3386/w11048>; Benjamin Crost, Joseph H. Felter, and Patrick B. Johnston, “Conditional Cash Transfers, Civil Conflict and Insurgent Influence: Experimental Evidence from the Philippines,” *Journal of Development Economics* 118 (January 1, 2016): 171–82, <https://doi.org/10.1016/j.jdevco.2015.08.005>.

²⁴ Paul Collier and Anke Hoeffler, “Greed and Grievance in Civil War,” *Oxford Economic Papers* 56, no. 4 (2004): 563–95.

to the population, the opportunity of joining a rebel group can be raised across the board. Thus, there is a clear reason why food aid can decrease conflict incidence in recipient countries.

Second, there is the *state strength* channel.²⁵ In its basic form, this channel argues that foreign aid strengthens state capacity (e.g., military, control of remote areas), which makes the state stronger vis-à-vis the rebels, which leads to less conflict. This channel rests on the assumption that conflict depends on rebels' ability to contest state authority and power. This channel is not well suited to explaining decreases in conflict that might come from food aid, because it is primarily focused on aid that increases a government's military ability. Although Collier and Hoeffler (2007) point out that foreign aid can build up a recipient state's coercive capacity even if that was not its intended purpose, their argument relies on that aid being "fungible."²⁶ In this sense, financial aid for education might be diverted to the military and roads can help the state mobilize its forces. However, food aid is far less fungible than these examples. Thus, because food aid cannot directly build up state military capacity, this channel is not helpful for explaining a decrease in conflict incidence.

Third, there is the *hearts and minds* channel.²⁷ Of the three channels, this is perhaps the most well-known—made famous by the British during the Malayan Emergency and the United States during the wars in Vietnam and Iraq. However, it is also the most empirically dubious.

²⁵ For literature that explores this channel, see: Paul Collier and Anke Hoeffler, "Unintended Consequences: Does Aid Promote Arms Races?," *Oxford Bulletin of Economics and Statistics* 69, no. 1 (2007): 1–27, <https://doi.org/10.1111/j.1468-0084.2006.00439.x>; Joppe de Ree and Eleonora Nillesen, "Aiding Violence or Peace? The Impact of Foreign Aid on the Risk of Civil Conflict in Sub-Saharan Africa," *Journal of Development Economics* 88, no. 2 (March 1, 2009): 301–13, <https://doi.org/10.1016/j.jdeveco.2008.03.005>; Burcu Savun and Daniel C. Tirone, "Foreign Aid, Democratization, and Civil Conflict: How Does Democracy Aid Affect Civil Conflict?," *American Journal of Political Science* 55, no. 2 (2011): 233–46.

²⁶ Collier and Hoeffler, "Unintended Consequences."

²⁷ For literature that explores this channel, see: Eli Berman, Jacob N. Shapiro, and Joseph H. Felter, "Can Hearts and Minds Be Bought? The Economics of Counterinsurgency in Iraq," *Journal of Political Economy* 119, no. 4 (2011): 766–819, <https://doi.org/10.1086/661983>; Andrew Beath, Fotini Christia, and Ruben Enikolopov, "Winning Hearts and Minds? Evidence from a Field Experiment in Afghanistan" (Working Paper, MIT, 2016).

This channel argues that foreign aid will strengthen the recipient government's ability to provide security and material support to the population. This, in turn, causes the population to reciprocate and provide the government with information and support against the rebels, resulting in less conflict. In effect, foreign aid helps the government "win the hearts and minds" of the population against the rebels. Again, this rests on the assumption that conflict depends on rebels' ability to contest state authority and power. The issue with this channel as an explanation for a decrease in conflict incidence is that it has proved extremely difficult to isolate this channel from other variables. For example, Berman, Shapiro, and Felter (2011) argue that the success of the Commander's Emergency Response Program (CERP) in reducing violence in Iraq between 2004-2008 is evidence of the hearts and minds channel at work. However, their findings should be taken cautiously, as American troops were required to distribute the aid. In other words, troop strength may be an omitted variable behind CERP's success. Beath et al. (2016) also present evidence of the hearts and minds channel, this time in Afghanistan. Once again, however, one should be careful in accepting their findings because the U.S. aid only decreased conflict incidence in some parts of Afghanistan, while increasing it in others. Thus, while this channel could possibly help explain a decrease in conflict incidence from food aid, its lack of clear empirical support makes it hard to accept this as the dominant explanation for decreases in conflict.

In sum, if the replication and extension find that U.S. food aid decreases conflict incidence in recipient countries, this thesis will focus on the *opportunity cost* channel as the preferred explanation.

Outcome 3: Aid has no effect on conflict incidence

A final potential outcome is that food aid will have no effect on conflict incidence in recipient countries. Unlike the previous two outcomes, there is obviously no causal mechanisms through which this would occur, but there are two key reasons why this outcome might take place.

First, there are some scholars who allege that the connection between foreign aid and conflict incidence is misconstrued and overemphasized. For example, Burnside and Dollar (2000) and Svensson (1999) argue that aid's effects are dependent on whether the recipient state has good institutions and policies in place.²⁸ In this sense, even if a relation between foreign aid and conflict can be found, the foreign aid is not really driving the effect. For these scholars, what really matters is the influence of domestic factors, not foreign aid. Similarly, Boone (1996), Easterly, Levine, and Roodman (2004), and Findley (2018) all argue that even if one accepts that foreign aid can cause an effect, these effects are so minimal compared to other foreign policy options and financial flows that they are virtually negligible.²⁹ Thus, food aid may simply have no causal relation with conflict incidence in recipient countries.

Second, another reason why the replication and extension of Nunn and Qian (2014) may find no correlation between food aid and conflict incidence is that contradictory channels are canceling each other out. In this sense, perhaps the diversion, state weakness, and opportunity cost channels are all at work simultaneously. On average, this could make it seem like food aid has no effect on conflict incidence in recipient countries. Given that this thesis' analysis uses a

²⁸ Burnside and Dollar, "Aid, Policies, and Growth"; J. Svensson, "Aid, Growth and Democracy," *Economics & Politics* 11, no. 3 (1999): 275–97, <https://doi.org/10.1111/1468-0343.00062>.

²⁹ Peter Boone, "Politics and the Effectiveness of Foreign Aid," *European Economic Review* 40 (1996): 289–329; William Easterly, Ross Levine, and David Roodman, "Aid, Policies, and Growth: Comment," *The American Economic Review* 94, no. 3 (June 2004): 774–80; Findley, "Does Foreign Aid Build Peace?"

large-n analysis, it will not be clear if this is the case. Nevertheless, it is important to realize that multiple, contradictory processes may be going on all at once when it comes to foreign aid and conflict incidence.

III. Nunn and Qian – Replication and Extension

Scope and methodology

This thesis explores whether the end of the Cold War affects the relationship between foreign aid and conflict incidence. To do so, it builds upon Nathan Nunn and Nancy Qian’s 2014 article “U.S. Food Aid and Civil Conflict.” Nunn and Qian’s primary outcome of interest (i.e., their dependent variable) is the *incidence of conflict*. To measure the incidence of conflict, Nunn and Qian use data from the UCDP/PRIO Armed Conflict Dataset (Version 4-2010). The unit of observation in the UCDP/PRIO database is *conflict-year*, and the unit of analysis is *state-based armed conflict*, which they define as “a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths.”³⁰

Before explaining why this thesis chose to replicate and extend Nunn and Qian (2014), it is important to address the motivation behind exploring the end of the Cold War as a factor affecting civil conflict. Most centrally, this thesis hopes to show that accounting for the Cold War might explain some of the contradictory findings concerning the relationship between foreign aid and conflict incidence in recipient countries. It is not surprising that the systemic changes brought on by the end of the Cold War have not been adequately considered in the

³⁰ Lotta Harbom et al., “UCDP/PRIO Armed Conflict Dataset Codebook,” Version 4-2009, Uppsala Conflict Data Program (UCDP) (Oslo, Norway: Centre for the Study of Civil Wars, International Peace Research Institute, n.d.).

scholarship on foreign aid and conflict. Most accounts of civil conflict focus exclusively on domestic factors. Even though foreign aid is technically an external force, the literature primarily considers its effects through other domestic factors. In other words, little to no consideration is given to systemic-level effects that could affect foreign aid's relationship with conflict incidence. Some, such as Ayres (2000) explicitly argue that separating the international from the domestic is appropriate.³¹ However, a number of other scholars have shown that systemic changes, including the end of the Cold War, are important factors for understanding civil conflict. Byman et al. (2001) argue that the end of the Cold War fundamentally changed the role of external (i.e., non-domestic) actors in civil conflicts.³² Brown (1996) and Lake and Rothchild (1996) show how the end of the Cold War particularly impacted ethnic civil conflict.³³ Ellingsen (2000) and Laidi (1994) connect the end of the Cold War to a surge in nationalism.³⁴ Evangelista (1996) and Zürcher (2007) point out that it coincided with a regional outbreak of civil wars in Eurasia,³⁵ while Stedman (1996) and Young (2006) point out the same, but in sub-Saharan Africa.³⁶ On the flip side, Castañeda (1993), Chernick (1996), and Findlay (1996) show that it also coincided with

³¹ R. William Ayres, "A World Flying Apart? Violent Nationalist Conflict and the End of the Cold War," *Journal of Peace Research* 37, no. 1 (January 1, 2000): 105–17, <https://doi.org/10.1177/0022343300037001006>.

³² Daniel Byman et al., "Trends in Outside Support for Insurgent Movements" (Santa Monica, CA: RAND Corporation, November 20, 2001), https://www.rand.org/pubs/monograph_reports/MR1405.html.

³³ Michael E. Brown, "Introduction," in *The International Dimensions of Internal Conflict* (Cambridge, MA: MIT Press, 1996); David A. Lake and Donald Rothchild, "Containing Fear: The Origins and Management of Ethnic Conflict," *International Security* 21, no. 2 (1996): 41–75, <https://doi.org/10.2307/2539070>.

³⁴ Tanja Ellingsen, "Colorful Community of Ethnic Witches' Brew? Multiethnicity and Domestic Conflict during and after the Cold War," *The Journal of Conflict Resolution* 44, no. 2 (April 2000): 228–49; Zaki Laidi, "Rethinking Post-Cold War," *Economic and Political Weekly* 29, no. 32 (1994): 2067–69.

³⁵ Matthew Evangelista, "Historical Legacies and the Politics of Intervention in the Former Soviet Union," in *The International Dimensions of Internal Conflict*, ed. Michael E. Brown (Cambridge, MA: MIT University Press, 1996), 107–40; Cristoph Zürcher, *The Post-Soviet Wars: Rebellion, Ethnic Conflict, and Nationhood in the Caucasus* (New York: New York University Press, 2007).

³⁶ Stephen John Stedman, "Conflict and Conciliation in Sub-Saharan Africa," in *The International Dimensions of Internal Conflict*, ed. Michael E. Brown (Cambridge, MA: MIT Press, 1996), 235–65; Crawford Young, "The Heart of the African Conflict Zone: Democratization, Ethnicity, Civil Conflict, and the Great Lake Crisis," *Annual Reviews of Political Science* 9 (2006): 301–28.

a reduction of conflict in Latin America and Southeast Asia.³⁷ Finally, Hironaka (2005) and Kanet (2006) highlight the decline in civil wars that were previously thought to be unresolvable.³⁸ In sum, there is good reason to explore whether a systemic change like the end of the Cold War could affect the relationship between foreign aid and conflict incidence.

Returning to this thesis' methodology, there are three reasons why this thesis elects to extend Nunn and Qian (2014) rather than constructing an independent analysis. First, one of the goals of this thesis is to show that accounting for the end of the Cold War can help explain the lack of consensus regarding foreign aid's effect on conflict incidence in recipient countries. Therefore, by replicating and extending an existing analysis in the literature, this thesis can show what this effect might look like. Moreover, it controls for the other proposed explanations for the lack of consensus (different forms of aid, different datasets, and different analytical methods). If this analysis successfully finds that the end of the Cold War does affect the relationship between foreign aid and conflict incidence, further evidence would be required to fully prove these other explanations are not the drivers of the lack of consensus. This itself is beyond the scope of this thesis, which primarily seeks to show that such an explanation is logical and backed by evidence. Nevertheless, this replication and extension should at the very least show whether the lack of consideration for the end of the Cold War is justified or in need of rectification and further research.

³⁷ Jorge Castañeda, *Utopia Unarmed: The Latin American Left after the Cold War* (New York: Knopf, 1993); Marc W. Chernick, "Peacemaking and Violence in Latin America," in *The International Dimensions of Internal Conflict*, ed. Michael E. Brown (Cambridge, MA: MIT Press, 1996), 267–307; Trevor Findlay, "Turning the Corner in Southeast Asia," in *The International Dimensions of Internal Conflict*, ed. Michael E. Brown (Cambridge, MA: MIT University Press, 1996), 173–204.

³⁸ Ann Hironaka, *Neverending Wars: The International Community, Weak States, and the Perpetuation of Civil War* (Cambridge, Mass: Harvard University Press, 2005); Roger E. Kanet, "The Superpower Quest for Empire: The Cold War and Soviet Support for 'Wars of National Liberation,'" *Cold War History* 6, no. 3 (2006): 331–52.

Second, Nunn and Qian's focus on U.S. food aid (i.e., humanitarian aid) is analytically useful. One reason for this is the simple fact that humanitarian aid is an important and popular source of aid, particularly for the United States. Indeed, the United States is the world's largest donor of food aid, accounting for well over half of global food aid during the study period.³⁹ Another factor that makes humanitarian aid appealing is that—unlike other forms of foreign aid—its designated purpose is to help its recipient population. Definitionally, humanitarian aid is “assistance designed to save lives, alleviate suffering, and maintain and protect human dignity during and in the aftermath of emergencies.”⁴⁰ Therefore, unlike military aid, infrastructure, and community-driven development—all of which carry obvious military applications—humanitarian aid should be least directly tied to conflict.

Third, this thesis utilizes Nunn and Qian (2014) for the extension because it is highly regarded within the literature, particularly due to its effective use of an *Instrumental Variable (IV) strategy*. An IV strategy involves finding an *instrument*—something arbitrary, random, and exogenous to the dependent variable—that is closely related to the independent variable of interest (i.e., has a strong 1st stage) and does not affect the dependent variable through any other channel except the independent variable (i.e., it demonstrates validity). Miguel, Satyanath, and Sergenti (2004) pioneered the use of an IV strategy for understanding effects on conflict incidence, when they used variation in rainfall as an instrumental variable for economic growth in Sub-Saharan Africa.⁴¹ Because variation in rainfall strongly affects economic growth in Sub-Saharan Africa, but ostensibly does not affect conflict incidence through any other means, they

³⁹ Christopher B. Barrett and Daniel G. Maxwell, *Food Aid After Fifty Years: Recasting Its Role* (London: Routledge, 2005).

⁴⁰ Christoph Zürcher, “What Do We (Not) Know About Development Aid and Violence? A Systematic Review,” *World Development* 98 (October 1, 2017): 4, <https://doi.org/10.1016/j.worlddev.2017.05.013>.

⁴¹ Edward Miguel, Shanker Satyanath, and Ernest Sergenti, “Economic Shocks and Civil Conflict: An Instrumental Variables Approach,” *Journal of Political Economy* 112, no. 4 (August 2004): 725–53, <https://doi.org/10.1086/421174>.

are able to analyze the effect of GDP growth on conflict incidence. Nunn and Qian (2014) utilize this strategy to determine whether variations in U.S. wheat aid (which is primarily influenced by donor-country shocks) affect conflict incidence in recipient countries. More specifically, Nunn and Qian recognized that food aid shipments are driven by U.S. weather conditions from the previous year, because U.S. food aid is based on whether there is a surplus of wheat produced in the previous year.⁴² In other words, if U.S. weather conditions were poor, U.S. food aid for the next year would decline because the surplus was less; and if U.S. weather conditions were good, U.S. food aid for the next year would increase because the surplus was greater. Since these changes in U.S. food aid are driven by an arbitrary factor (U.S. weather) that does not in itself affect conflict incidence in recipient countries, this IV strategy helps Nunn and Qian overcome issues of reverse causality and joint determination.

Replication

Nunn and Qian (2014) seek to answer the following research question: *What is the effect of U.S. food aid on the incidence of conflict in recipient countries?* In addressing their research question, Nunn and Qian find that an increase in U.S. food aid leads to an increase in the duration of civil conflict in recipient countries but has no effect on the onset of civil conflict. Therefore, in the replication of Nunn and Qian's findings, this thesis expects to reproduce a *negative, statistically significant* correlation between U.S. food aid and conflict offset (i.e., the proxy for conflict duration) and a *statistically non-significant* correlation between U.S. food aid and conflict onset.

⁴² Nunn and Qian, "U.S. Food Aid and Civil Conflict," 1631.

Nunn and Qian’s primary contribution to the literature is their innovative and compelling research design. Explained earlier, their use of an IV strategy helps overcome issues of reverse causality, joint determination, and endogeneity. Their specific research design includes a two-stage least squares (2SLS) regression analysis that uses donor-country shocks to instrument for aid provision.

Nunn and Qian utilize several different regressions in their paper. Since their main outcome of interest is the incidence of conflict (which reflects both the onset of new conflicts and continuation of existing conflicts), this thesis only replicates “Table 7—The Effect of Food Aid on Civil Conflict Onset and Duration.”⁴³ The following table displays the original results from the paper.

TABLE 7—THE EFFECT OF FOOD AID ON CIVIL CONFLICT ONSET AND DURATION

Dependent variable:	Civil war onset		Civil war onset			Civil war offset		
	Collier and Hoeffler (2004)	Fearon and Laitin (2003)	Logistic discrete time hazard model			Logistic discrete time hazard model		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mean of dependent variable	0.041	0.034	0.063	0.063	0.063	0.185	0.185	0.185
US wheat aid (1,000 MT) (mean = 27.61)	0.00102 (0.00080)	0.00061 (0.00044)	0.000064 (0.000256)	-0.000038 (0.000241)	-0.000012 (0.000304)	-0.000428 (0.000249)	-0.000507 (0.000224)	-0.000672 (0.000345)
Controls:								
Lagged civil conflict incidence	No	Yes	N/A	N/A	N/A	N/A	N/A	N/A
Third-order poly of duration	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
All time-invariant controls	N/A	N/A	No	Yes	Yes	No	Yes	Yes
Region-fixed effects	N/A	N/A	No	No	Yes	No	No	Yes
First-stage <i>F</i> -statistic	4.11	12.10	26.07	23.3	20.61	17.29	17.3	22.52
Observations	3,377	4,089	1,454	1,454	1,454	709	709	709

⁴³ Nunn and Qian, 1654.

As shown in Table 7, the U.S. wheat aid instrument is compared with eight different specifications of the dependent variable (incidence of conflict). The first two columns use two popular methods of measuring conflict incidence—based on Collier and Hoeffler (2004) and Fearon and Laitin (2003).⁴⁴ The only difference between these two specifications (columns 1 and 2) is that Collier and Hoeffler (2004) merely include periods of no conflict and periods of conflict onset, while Fearon and Laitin (2003) include all observations and control for the incidence of civil conflict in the previous period. Specifications 3-5 use slightly varied forms of hazard models to examine the effect of U.S. food on the *onset* of conflict. Specifications 6-8 similarly use slightly varied forms of hazard models but use them to examine the effect of U.S. food on the *offset* of conflict (i.e., the probability of transitioning out of conflict and into peace). This offset measurement is used as an inverse proxy for conflict duration, because if the likelihood of civil war offset increases, the duration of conflict decreases (and vice-versa). In sum, the primary takeaway is that columns 1-5 measure the correlation between U.S. food aid and civil war *onset*, while columns 6-8 measure the correlation between U.S. food aid and civil war *duration*.

To replicate the findings presented in Table 7, this thesis reproduces row 2 for each column. As explained above, since each column represents a different method of measuring conflict incidence, it is important to replicate each of these findings to adequately test the subsequent extension. Replication results for each column are shown below.

⁴⁴ James D. Fearon and David D. Laitin, "Ethnicity, Insurgency, and Civil War," *American Political Science Review* 97, no. 1 (February 2003): 75–90, <https://doi.org/10.1017/S0003055403000534>; Collier and Hoeffler, "Greed and Grievance in Civil War."

Column 1

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
intra_state_onset						
wheat_aid	.0010215	.0008002	1.28	0.202	-.0005469	.0025899

Column 2

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
intra_state_onset						
wheat_aid	.0006073	.0004369	1.39	0.165	-.0002491	.0014637

Column 3

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]	
wheat_aid	.0000637	.0002556	0.25	0.803	-.0004373	.0005648

Column 4

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]	
wheat_aid	-.000038	.0002412	-0.16	0.875	-.0005107	.0004347

Column 5

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]	
wheat_aid	-.0000118	.0003036	-0.04	0.969	-.0006068	.0005833

Column 6

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]	
wheat_aid	-.0004282	.0002491	-1.72	0.086	-.0009165	.0000601

Column 7

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]	
wheat_aid	-.0005066	.0002243	-2.26	0.024	-.0009463	-.000067

Column 8

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]	
wheat_aid	-.0006722	.0003448	-1.95	0.051	-.0013479	3.60e-06

As the replication results show, the coefficients and standard errors for each column are identical to the original results presented in Table 7 of Nunn and Qian's paper. This indicates that the replication was successful. In addition to these values, the replication results include z-scores, p-values, and confidence intervals (at the 95% level) for each column. These additional

metrics—not explicitly included in Table 7—help us interpret the results of this 2SLS regression. In particular, if one focuses on the coefficient and p-values for each column, it becomes clear why Nunn and Qian conclude that U.S. food aid increases the duration of conflict but has no effect on the onset of conflict. To be considered “statistically significant,” the p-values should be less than 0.05. While this number is essentially arbitrary, it is the standard benchmark for determining statistical significance. Thus, a p-value of 0.05 would indicate that there is a 5% chance that there is no actual correlation between variation in wheat aid and conflict incidence.

Nunn and Qian conclude that variation in U.S. food aid has no effect on the *onset* of conflict. If this is the case, one should expect to find no statistical significance for columns 1-5 (all of which measure the onset of conflict). This is exactly what the replication results show. Indeed, none of the p-values in columns 1-5 are less than 0.1 (i.e., it is not even statistically significant at the more lenient 10% level). Thus, the replication results support Nunn and Qian’s conclusion that variation in U.S. food has no effect on the onset of conflict.

Nunn and Qian also conclude that variation in U.S. food aid has a strong effect on the *duration* of conflict. If this is the case, one should expect columns 6-8 to be *negative* and *statistically significant*. The reason this correlation should be negative, and not positive, is because Nunn and Qian are using the “likelihood of conflict offset” as a proxy for duration of conflict. Therefore, if one expects increases in U.S. food aid to lead to an increase in conflict duration, one should look for a *decrease* in the likelihood of conflict offset. This is generally what the replication results show. Certainly, all of the coefficients are negative, which indicates that the correlation is indeed negative. However, only column 7 is statistically significant at the 5% level. Admittedly, both columns 6 and 8 are statistically significant at the 10% level.

Therefore, the replication results do provide evidence for Nunn and Qian's conclusion that increases in U.S. food aid increase the duration of conflict in recipient countries.

In sum, the replication results support Nunn and Qian's findings. They suggest that U.S. food aid increases the duration of conflicts in recipient countries but has no effect on conflict onset. Although Nunn and Qian might be overstating the significance of the effect that U.S. food aid has on conflict duration (given that it is only significant at the 10% level), the results do support their general findings.

Extension

Although Nunn and Qian's research design is well-constructed, they do not adequately account for the end of the Cold War. They offer two considerations for how the Cold War might impact their findings. First, they control for the inclusion of new states after the breakup of the Soviet Union. They find that the inclusion of these 14 countries has no effect on their findings.⁴⁵ Second, they test whether "the shift in [U.S.] aid policies that occurred with the end of the Cold War [...] influenced the link between food aid and conflict."⁴⁶ To do this, Nunn and Qian utilize a list of shifts in U.S. policy compiled by Meernik, Krueger, and Poe (1998).⁴⁷ Just as with their first consideration, they find that the change in U.S. policy has no statistically significant effect on their findings. While this dual attempt to consider the impact of the end of the Cold War is certainly better than most of the other literature, it is insufficient. Both of these considerations are important, but neither captures the degree and scope of systemic change incurred by the end of the Cold War. As explained earlier, the end of the Cold War led to many changes in both the

⁴⁵ Nunn and Qian, "U.S. Food Aid and Civil Conflict," 1652.

⁴⁶ Nunn and Qian, 1662.

⁴⁷ James Meernik, Eric L. Krueger, and Steven C. Poe, "Testing Models of U.S. Foreign Policy: Foreign Aid During and After the Cold War," *The Journal of Politics* 60, no. 1 (1998): 63–85, <https://doi.org/10.2307/2648001>.

international and domestic spheres. For the purposes of this thesis, the end of the Cold War's effects on conflicts—how they are started and fought—is of central importance. Thus, this thesis will provide a more fundamental test to gauge whether the end of the Cold War alters the relationship between U.S. food aid and conflict incidence identified by Nunn and Qian.

To consider whether the end of the Cold War alters the findings, this thesis splits the original sample into two samples and reruns the 2SLS regressions for both. The first sample only includes cases between 1971-1991 (representing the Cold War), while the second sample only includes cases between 1991-2006 (representing the post-Cold War). In splitting these samples, this thesis explicitly avoids including cases that were not in Nunn and Qian's original analysis so that the overall sample is effectively the same (i.e., it does not include years prior to 1971 or after 2006). The following are the results, side-by-side.

Cold War (1971-1991) Sample*Column 1*

intra_state_onset	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	.0048378	.0018876	2.14	0.032	.0083382 .0077374

Column 2

intra_state_onset	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	.0023336	.0010193	2.29	0.022	.0003359 .0043313

Column 3

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	.0008191	.0003113	2.63	0.009	.0002089 .0014292

Column 4

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	.0005446	.0002675	2.04	0.042	.0000202 .001069

Column 5

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	.0010448	.0003401	3.07	0.002	.0003782 .0017115

Column 6

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.0005165	.0001928	-2.68	0.007	-.0008943 -.0001386

Column 7

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.0005971	.0002019	-2.96	0.003	-.0009928 -.0002013

Column 8

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.000982	.0003146	-3.12	0.002	-.0015986 -.0003654

Post-Cold War (1991-2006) Sample*Column 1*

intra_state_onset	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	.0012611	.0027219	0.46	0.643	-.0040738 .0065959

Column 2

intra_state_onset	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	.0008803	.0013316	0.66	0.509	-.0017297 .0034902

Column 3

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.0002203	.0002424	-0.91	0.363	-.0006954 .0002547

Column 4

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.0001482	.0001837	-0.81	0.420	-.0005083 .0002119

Column 5

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.0001976	.000201	-0.98	0.326	-.0005916 .0001965

Column 6

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.0000695	.0005991	-0.12	0.908	-.0012437 .0011047

Column 7

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.0004308	.0005678	-0.76	0.448	-.0015437 .0006821

Column 8

	dy/dx	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
wheat_aid	-.000794	.0007529	-1.05	0.292	-.0022696 .0006816

The extension results suggest that controlling for the Cold War significantly influences the findings. In the Cold War sample, all 8 specifications of conflict incidence show statistically significant correlations with variation in U.S. food aid. In columns 6-8 of the Cold War sample, the negative coefficients suggest—like Nunn and Qian’s findings—that variations in U.S. food aid are negatively correlated with conflict offset (meaning U.S. food aid is positively correlated

with conflict duration). Indeed, the correlation is much stronger than Nunn and Qian's findings, since all three columns are statistically significant at the even more rigorous 1% level.

Additionally, the coefficients for columns 6-8 in the Cold War sample are all larger than Nunn and Qian's findings, suggesting that the magnitude of the effect is also larger. However, unlike Nunn and Qian's findings, the Cold War sample results in columns 1-5 suggest that the correlation between variation in U.S. food aid and conflict *onset* is also statistically significant (at the 5% level). The positive coefficient indicates that an increase in U.S. food aid correlates with an increase in conflict onset in the recipient country.

In the post-Cold War sample, all 8 specifications of conflict incidence show statistically non-significant correlations with variation in U.S. food aid. For columns 1-5 of the post-Cold War sample, these results support Nunn and Qian's findings that U.S. food aid is not correlated with conflict onset. However, columns 6-8 of the post-Cold War sample directly contradict Nunn and Qian's findings that variation in U.S. food aid is correlated with conflict duration. Thus, dividing Nunn and Qian's observations into two distinct samples substantially affects whether food aid increases conflict incidence in recipient countries.

One potential objection that might be raised regarding this extension is that splitting Nunn and Qian's original sample into two samples could leave one (or both) of the samples with too few observations. This is an appropriate concern, but it is not a factor in this analysis. Nunn and Qian's original analysis included 4,089 observations. Dividing these observations between the Cold War and post-Cold War samples resulted in a nearly equivalent distribution, with 2,225 observations in the Cold War sample and 1,974 observations in the post-Cold War sample. The standard method for gauging whether the number of observations is appropriate is 10 observations per independent variable. Since there is only one independent variable in this

analysis (the U.S. food aid instrument), there is clearly a sufficient number of observations in each sample.

Summary

The replication and extension of Nunn and Qian (2014) suggests a reinterpretation of their findings is necessary. By dividing Nunn and Qian's sample into two sub-samples—observations during the Cold War (1971-1991) and observations after the Cold War (1991-2006)—this thesis suggests that U.S. food aid does influence conflict incidence, but only during the Cold War. In other words, the end of the Cold War coincides with a fundamental change in the relationship between food aid and conflict incidence.

Furthermore, whereas Nunn and Qian made a distinction between onset and duration by suggesting that U.S. food aid is correlated with conflict duration but not conflict onset, this thesis' extension challenges such a distinction. The reason Nunn and Qian were unable to find a correlation between conflict onset and U.S. food aid is because they included observations after the Cold War ended, which diluted the findings. In other words, by not adequately considering the fundamentally systemic effects brought on by the end of the Cold War, Nunn and Qian identified an arbitrary and misrepresentative distinction between conflict onset and duration. This itself suggests a broader potential to clarify the current ambiguities and contradictory findings within the literature.

IV. Discussion

Why does the end of the Cold War change the relationship between U.S. food aid and the incidence of conflict in recipient countries? Rather than identifying a single “dominant”

mechanism, this thesis argues that the end of the Cold War essentially suppresses two of the channels discussed in the literature: the *diversion* and *state weakness* channels.

Diversion channel

The diversion (i.e., aid theft) channel predicts that foreign aid increases conflict because rebels steal the aid, which they can either utilize to sustain the war effort or sell to buy weapons. Within the context of this thesis' analysis of U.S. food aid, the diversion channel is particularly important to consider for two reasons. First, it is the channel which Nunn and Qian (2014) highlight as the primary mechanism.⁴⁸ On this point, it should be noted that Nunn and Qian offer no real explanation or evidence for why they believe their findings demonstrate the diversion channel at work. Presumably, their belief coincides with this thesis' second reason for focusing on the diversion channel—that food aid is particularly prone to theft by rebel groups. Polman (2010) and Anderson (1999) both generally claim that food aid is especially easy to steal.⁴⁹ Kahn and Lucchi (2009) specifically demonstrate this point in Eastern Chad and Darfur.⁵⁰ Thus, it makes sense to first look at the diversion channel in trying to uncover how the end of the Cold War might influence food aid's effect on conflict incidence.

One of the most fundamental changes brought on by the end of the Cold War relates to how civil wars are fought. More specifically, the end of the Cold War altered the “technologies of rebellion.”⁵¹ Kalyvas and Balcells (2010) explain that there are essentially three types of technologies of rebellion. First, there is *irregular war* (more commonly referred to as *guerilla*

⁴⁸ Nunn and Qian, “U.S. Food Aid and Civil Conflict,” 1635.

⁴⁹ Polman, *The Crisis Caravan: What's Wrong With Humanitarian Aid?*; Anderson, *Do No Harm: How Aid Can Support Peace—or War*.

⁵⁰ Kahn and Lucchi, “Are Humanitarians Fuelling Conflicts?”

⁵¹ Stathis N. Kalyvas and Laia Balcells, “International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict,” *American Political Science Review* 104, no. 3 (August 2010): 415–29, <https://doi.org/10.1017/S0003055410000286>.

war). Irregular wars occur when the military technology of the state is relatively high, while the military technology of the rebels is relatively low. Kalyvas and Balcells explain that irregular wars were closely associated with the Cold War; and thus, a key effect of the end of the Cold War was a sharp decline in irregular wars.⁵² The implications of this decline will be discussed shortly. Second, there is *conventional war*. Similar to irregular war, conventional war includes states with relatively high military technology, but unlike irregular war, rebels also possess high military technology. As Kalyvas and Balcells explain, conventional war “emerges when rebels are able to militarily confront states using heavy weaponry such as field artillery and armor.”⁵³ The outcome of this type of warfare is that “military confrontation is direct, either across well-defined lines or between armed columns.”⁵⁴ Following the end of the Cold War, conventional war was associated with the process of superpower withdrawal from weak states.⁵⁵ Finally, there is *symmetric nonconventional (SNC) warfare*. SNC warfare occurs when the military technologies of both the state and the rebels are low. This means that, like conventional war, the rebels and state are relatively evenly matched, but both must rely on low technologies.⁵⁶ This type of warfare is particularly chaotic and intense. As a result of this intensity, it is typically shorter than the other types of conflict. Furthermore, Kalyvas and Balcells note that SNC wars are particularly associated with the processes of imperial collapse and state formation.⁵⁷

It is through this lens of “technologies of rebellion” that one can understand how the end of the Cold War affects the diversion channel. Essentially, this thesis argues that just as irregular wars were particularly suited to the Cold War, aid theft is particularly suited to irregular wars. As

⁵² Kalyvas and Balcells, 427.

⁵³ Kalyvas and Balcells, 410.

⁵⁴ Kalyvas and Balcells, 410.

⁵⁵ Kalyvas and Balcells, 427.

⁵⁶ Kalyvas and Balcells, 410.

⁵⁷ Kalyvas and Balcells, 428.

explained above, irregular wars are asymmetric wars that pit rebels with low military technology against the state, which has high quality military technologies. The outcome of this asymmetric relationship is that to survive, rebels must rely on indirect tactics. As Fearon and Laitin (2003) explain, “Irregular or guerilla warfare is a technology of rebellion whereby the rebels privilege small, lightly armed bands operating in rural areas.”⁵⁸ Against the United States, this strategy proved notoriously successful in Vietnam, Afghanistan, and Iraq—particularly because it becomes extremely difficult to determine who is a rebel and who is not.⁵⁹ Thus, unlike both conventional warfare and SNC warfare, there are no clear distinguishing lines of where state control ends and rebel control begins. The key to the rebels’ success is to be constantly on the move and to avoid direct confrontations with the state. The implication this holds for foreign aid is that it is nearly impossible to avoid distributing aid to areas where it might fall into the hands of rebel groups.

Additionally, humanitarian aid (including food aid) is particularly important for rebel groups in irregular wars. As Kalyvas and Balcells note, “Irregular wars frequently turn into wars of attrition.”⁶⁰ Against the state’s superior military, rebels in irregular wars try to hold out for as long as they can in the hopes that they might gain external or public support for their political goals. Because humanitarian aid is uniquely suited to increasing its recipients’ ability to survive,⁶¹ it is especially important for rebel groups to steal this kind of aid in irregular wars.

⁵⁸ Fearon and Laitin, “Ethnicity, Insurgency, and Civil War,” 75.

⁵⁹ Huseyn Aliyev, “Why Are Some Civil Wars More Lethal Than Others? The Effect of Pro-Regime Proxies on Conflict Lethality,” *Political Studies* 68, no. 3 (August 1, 2020): 749–67, <https://doi.org/10.1177/0032321719862752>; Jerry Meyerle and Carter Malkasian, “Insurgent Tactics in Southern Afghanistan” (CNA Strategic Studies Division, August 2009); Victoria Pohle, “The Viet Cong in Saigon: Tactics and Objectives During the Tet Offensive” (Office of the Assistant Secretary of Defense, January 1969), <https://apps.dtic.mil/sti/pdfs/AD0738741.pdf>.

⁶⁰ Kalyvas and Balcells, “International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict,” 419.

⁶¹ Zürcher, “What Do We (Not) Know About Development Aid and Violence?,” 4.

Given how conducive irregular wars are to aid theft, one reason why U.S. food aid no longer affects the incidence of conflict in recipient countries after the Cold War is due to the sharp decline in the prevalence of irregular wars. During the Cold War, 66% of all civil wars were irregular wars, compared to only 26% of those fought between 1991 – 2004.⁶² This sharp decline is clearly substantial and can help account for the significant difference between the post-Cold War and Cold War samples. What is particularly compelling about this explanation is that it relates to a change in the *nature of conflict* itself. While the instrumental variable strategy used in Nunn and Qian's analysis is effective at removing many analytical issues like reverse causality and endogeneity, a change in the nature of conflict would not be effectively controlled. In effect, Nunn and Qian's analysis treats all conflicts the same, and Kalyvas and Balcells' explanation of shifting technologies of conflict after the Cold War shows this to be misguided.

While the end of the Cold War's effect on the diversion channel certainly helps make sense of this thesis' findings, it generally only explains the change in conflict duration. One could argue that aid diversion could increase the likelihood of conflict onset, as aspiring rebels could sell the food aid to buy the weapons necessary to initiate a conflict against the state. This may be the case, but the diversion channel is much better suited to explaining duration. To state this point more succinctly, for rebel groups to steal food aid effectively and consistently, the rebel groups must already exist. Thus, while the decline in irregular wars can explain why U.S. food aid has no statistically significant effect on conflict duration after the end of the Cold War, it does not explain the parallel change in conflict onset. For this, the state weakness channel is required.

⁶² Kalyvas and Balcells, "International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict," 415.

State weakness channel

The state weakness channel predicts that the volatility and unreliability of foreign aid can lead to a decline in the state's legitimacy and perceived ability to provide for its population. Similar to the diversion channel, the state weakness channel is especially relevant for food aid. For example, Kirwan and McMillan (2007) point out that "food aid is unreliable" and is based more on domestic variations in donor countries than need in recipient countries.⁶³ But more importantly, the state weakness channel is better suited to explaining variation in conflict onset than the diversion channel. As Buhaug (2006) explains, "Domestic unrest is more probable if there is uncertainty about the supremacy of the state."⁶⁴ In other words, conflict onset should be understood (at least partly) as a cost-benefit analysis for rebels. If the rebels have absolutely no hope of gaining political concessions from the state, they would not initiate a conflict. On the other hand, if there is uncertainty about the state's ability to suppress the rebels and provide for its population, the rebels are much more likely to initiate a conflict. Therefore, if the Cold War can be shown to affect the state weakness channel, this could explain the variation in conflict onset between the Cold War and post-Cold War samples.

In addition to the prevalence of irregular warfare, competition between the United States and the Soviet Union during the Cold War had the effect of raising both state and rebel capacity in many countries around the world. Kalyvas and Balcells explain how during the Cold War, although both rebels and states were frequently bolstered by the competing superpowers, "this mutual improvement in military capacity nevertheless favored the rebels."⁶⁵ In effect, one

⁶³ Barrett E. Kirwan and Margaret McMillan, "Food Aid and Poverty," *American Journal of Agricultural Economics* 89, no. 5 (December 2007): 1152–60.

⁶⁴ Halvard Buhaug, "Relative Capability and Rebel Objective in Civil War," *Journal of Peace Research* 43, no. 6 (2006): 694.

⁶⁵ Kalyvas and Balcells, "International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict," 418.

outcome of competition between the United States and the Soviet Union during the Cold War was that it made rebels relatively more powerful compared to the state.

Within these Cold War conditions of relatively heightened rebel capability, foreign aid—through the state weakness channel—was more likely to spark conflict onset. Narang (2014) explains how humanitarian aid can increase uncertainty about state (and rebel strength).⁶⁶ In effect, Narang uses a bargaining framework to argue that foreign aid exacerbates information failures. In the volatile conditions described above, this uncertainty over relative strength could lead to conflict onset. More simply, however, foreign aid’s ability to decrease the population’s trust in the government could also spark conflict onset. In this sense, the Cold War altered the relative strength of the state, effectively decreasing its perceived “supremacy.” Thus, foreign aid’s ability to decrease trust in the government through the state weakness channel was more likely to incite conflict onset during the Cold War.

In addition to the Cold War’s effect on the state’s real and perceived capability relative to rebels, another explanation exists through the state weakness channel. During the Cold War, foreign aid was far more likely to be delivered bilaterally than multilaterally.⁶⁷ This changed after the Cold War, with foreign aid being delivered more often on a multilateral basis, which impacted foreign aid’s relation to conflict incidence. Burnside and Dollar (2000) explain that when foreign aid is distributed multilaterally, it is more likely to be allocated in favor of good policy when compared to bilateral aid.⁶⁸ Similarly, Gutting and Steinwand (2017) argue that when an aid recipient receives a substantial proportion of aid from only one donor, they are more

⁶⁶ Neil Narang, “Assisting Uncertainty: How Humanitarian Aid Can Inadvertently Prolong Civil War,” *International Studies Quarterly* 1, no. 12 (October 6, 2014): 184, <https://cisac.fsi.stanford.edu/publication/assisting-uncertainty-how-humanitarian-aid-can-inadvertently-prolong-civil-war>.

⁶⁷ Gutting and Steinwand, “Donor Fragmentation, Aid Shocks, and Violent Political Conflict.”

⁶⁸ Burnside and Dollar, “Aid, Policies, and Growth,” 864.

susceptible to the negative effects of volatility.⁶⁹ In other words, because the Cold War involved more bilateral aid, recipient states were more susceptible to the negative effects of aid shocks and aid volatility. When foreign aid became more multilateral after the end of the Cold War, these effects were diminished. Thus, this change could help explain why U.S. food aid has a positive, statistically significant correlation with conflict onset during the Cold War, but not after.

Explaining the lack of consensus in the literature

Now that this thesis has explained why U.S. food aid increases conflict incidence only during the Cold War, it is important to explain why these results can help explain the contradictory findings in the broader literature. Typically, two possible explanations for the incongruence are advanced. First, different scholars focus on different types of aid. As Zürcher (2017) explains, there are essentially six different types of aid: community-driven developments, conditional cash transfers, public employment schemes, humanitarian aid, infrastructure, and military aid.⁷⁰ Not only can some aid operate differently than other—working under different conditions and through different channels—but it is also the case that the literature does not consistently observe these distinctions. While this explanation undoubtedly helps explain some of the contradictory findings, different types of aid cannot completely explain the lack of agreement in the literature. This is because there are some scholars who have focused on the same type of aid but have found different results. For example, while Abdulai, Barrett, and Hoddinott (2005) find that food aid decreases conflict by stimulating economic growth, Kirwan and McMillan (2007) find that food aid’s unreliability has increased conflict by reducing trust in

⁶⁹ Gutting and Steinwand, “Donor Fragmentation, Aid Shocks, and Violent Political Conflict,” 2.

⁷⁰ Zürcher, “What Do We (Not) Know About Development Aid and Violence?”

the government.⁷¹ Therefore, to fully account for this phenomenon, other explanations are necessary.

A second possible explanation for the lack of consensus points to the wide array of datasets and analytical methods utilized by the literature. While there is no doubt that the literature utilizes many different methods and data, it is not exactly clear which method is better than others. For example, some of the scholarship (like Nunn and Qian) utilizes large-n statistical analyses to make their case, while others use individual case studies. Each comes with its own advantages and disadvantages. Although it is important to consider whether the use of different analytical methods can lead to the divergence in results, it seems unlikely that this alone can explain the incongruent findings in the literature. This would require deep and endemic issues to be present in much of literature, almost all of which are peer-reviewed and highly regarded. When it comes to possible variation in the use of datasets, this point also merits consideration. Since each dataset utilize different coding schemes, analyses may produce different results, depending on which dataset they use. However, as with the point about different types of aid, there is divergence in findings among studies that utilize the same dataset. For example, de Ree and Nillesen (2009) and Nunn and Qian (2014) both use the popular database managed by the Uppsala Conflict Database Program and Peace Research Institute of Oslo (UCDP/PRIO).⁷² However, whereas de Ree and Nillesen (2009) find that foreign aid reduces conflict incidence, Nunn and Qian (2014) find that it increases conflict incidence.⁷³ Therefore, a further explanation is required.

⁷¹ Abdulai, Barrett, and Hoddinott, “Does Food Aid Really Have Disincentive Effects? New Evidence from Sub-Saharan Africa”; Kirwan and McMillan, “Food Aid and Poverty.”

⁷² N.P. Gleditsch et al., “Armed Conflict 1946–2001: A New Dataset.,” *Journal of Peace Research* 39, no. 5 (2002): 615–37.

⁷³ de Ree and Nillesen, “Aiding Violence or Peace?”; Nunn and Qian, “U.S. Food Aid and Civil Conflict.”

Given the inadequacy of the existing explanations for the contradictory findings in the literature, it seems that some factor is being overlooked. This thesis suggests that this blind spot is change within the international system. As was argued earlier, not enough consideration is given to non-domestic factors as correlates of conflict. Kalyvas and Balcells (2010) highlight this short-coming when they explain that existing literature on civil conflict has disproportionately focused on domestic factors, leaving international and systemic factors unexamined.⁷⁴ Thus, accounting for systemic changes in the international system—such as the end of the Cold War—can help clarify some of the current ambiguity that exists within the literature.

This thesis' extension suggests that the end of the Cold War marks a fundamental systemic shift that impacted how foreign aid—in this case food aid—affects conflict incidence in recipient countries. Although this analysis has only focused on Nunn and Qian, there is good reason to expect this factor to clarify some of the contradictions within the literature more broadly. This is because scholars differ substantially in what time periods they examine. Some scholars focus only on the pre-Cold War period, some focus only on the post-Cold War period, and most use samples that include both periods. Therefore, since accounting for the Cold War affected the results in Nunn and Qian (2014), it may help account for wider variation in the literature.

Limitations

Three limitations of this thesis' argument must be considered. First, this thesis' findings and argument are based purely on U.S. aid data. Although Nunn and Qian do consider whether changes in U.S. policy after the Cold War affect the results (and find that controlling for U.S.

⁷⁴ Kalyvas and Balcells, "International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict," 415.

policy makes no difference), there is some reason to suspect the findings would not be universal. Most important, the U.S. is the largest aid donor in the world.⁷⁵ Thus, there may be a relative threshold in amount of aid that must be crossed if it affects conflict incidence. Based on the analysis presented in this thesis, such a consideration is not effectively addressed.

Second, although the discussion presents two channels through which the extension's results can be understood, it does not provide evidence within the data itself for these two channels. In other words, the data does not in itself suggest that the diversion and state weakness channels explain the findings. This limitation represents a much broader issue within the literature. Just as Nunn and Qian (2014) are unable to prove that the diversion channel is at work, virtually none of the literature can prove which specific channel explains the effects. The typical approach—and the one employed by this thesis—is to pair analytical findings with the most appropriate theoretical explanation. Unfortunately, this thesis does not have a clear solution for how the literature can more directly connect the theory to the data. Therefore, it must rely on the fact that the diversion and state weakness channels are the most relevant to food aid and are both affected by the end of the Cold War.

Finally, there is a limitation to how this thesis' findings should be interpreted. While it has been shown that the relation between U.S. food aid and conflict incidence is statistically insignificant after the end of the Cold War, this does not mean that U.S. food aid cannot affect conflict incidence. Unfortunately, aid theft can (and will) continue to occur, which means food aid can still increase the incidence of conflict in recipient countries. The statistical insignificance refers to the *average* relation between U.S. food aid and conflict incidence. Thus, the correct interpretation of the findings is that after the Cold War, U.S. food aid will generally (at least 95%

⁷⁵ "United States," Donor Tracker, 2021, <https://donortracker.org/country/united-states>.

of the time) not be expected to increase conflict incidence. As was explained in Section II, one interpretation of this statistical insignificance is that in addition to the diversion and state weakness channels, the opportunity cost channel is also at work. In other words, during the Cold War, the combined effects of the diversion and state weakness channels produced a greater negative effect than the positive effect of the opportunity cost channel. However, once the Cold War ended, these channels essentially began to cancel each other out.

V. Conclusion

This thesis has sought to understand whether accounting for the end of the Cold War affects the relationship between U.S. food aid and conflict incidence. By replicating and extending Nunn and Qian (2014) to more accurately account for the end of the Cold War, this thesis finds that the end of the Cold War does matter for understanding this relationship. During the Cold War, U.S. food aid increases both conflict duration and the likelihood of conflict onset. In contrast, once the Cold War ends, U.S. food aid has no statistically significant relation to either conflict duration or onset. To explain these results, this thesis argues that the end of the Cold War fundamentally changed how civil wars are fought, how the state government is perceived, and how foreign aid is distributed. In effect, both the diversion and state weakness channels are particularly strong during the Cold War but are weakened once the Cold War ends.

Based on this thesis' findings, several areas present themselves as in need of further research. First, other existing studies—particularly those that focus on food and humanitarian aid—should be similarly replicated and extended to account for the end of the Cold War. Additional replications and extensions would help confirm this thesis' argument that the end of the Cold War does, in fact, affect the relationship between U.S. food aid and conflict incidence.

Furthermore, it would be helpful to include non-U.S. food aid in future studies as well, to ensure that this relationship is not due to something unique to U.S. foreign aid. Second, it is also important to consider whether the end of the Cold War affects other forms of foreign aid. This thesis' arguments are particularly well-suited to explaining food aid. However, it is quite possible that for other aid, other theoretical channels dominate and are affected by the end of the Cold War. Additionally, only by considering other forms of foreign aid can it become clear whether accounting for the end of the Cold War helps explain the lack of consensus in the existing literature. Third, it might be fruitful to consider other systemic changes apart from the Cold War. While it is beyond the scope of this thesis to meaningfully explore what another good example might be, doing so would further contribute to the debate about whether systemic factors should be considered when trying to understand domestic conflict.

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