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Master Thesis

Aid Allocation across the Humanitarian-Development-Peace Nexus: The Role of Fragility as a Donor's Motive

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Supervisor: Zdeněk Opršal



GLODEP 2021

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Declaration

I hereby declare that this thesis, “Aid Allocation across the Humanitarian-Development-Peace Nexus: The Role of Fragility as a Donor’s Motive”, is my own work and by my own effort for the Erasmus Mundus Joint Master Degree in International Development Studies – GLODEP. Where sources of information have been used, they have been acknowledged.

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31st of May, 2021

A handwritten signature in black ink, appearing to read 'Kazuma Yabe', written in a cursive style.

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Zásady pro vypracování

For decades, Official Development Assistance (ODA) has been one of the major financial sources for development projects. While the scope of ODA highly varies, this study focuses on ODA in fragile contexts. According to OECD, fragile contexts are characterised by their exposure to risk and insufficient ability to cope with it. Due to the volatile flow of other financial sources, ODA plays a particularly important role in fragile contexts as a relatively stable source of finance. The objective of this study is to analyse the role of ODA in the states of fragility.

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Abstract

Fragility continues to present major challenges to the international community in achieving sustainable development goals. Aid has been one of the critical sources of finance to deliver humanitarian assistance, development projects and peace operations in fragile contexts. This study analyses if and how donors are motivated by the 'state' and 'degree' of fragility in their aid allocation across the humanitarian-development-peace nexus. Using the three-dimensional panel data and employing the random-effect Tobit method, the role of fragility as a donor's motive is econometrically analysed along with other three groups of motives: self-interest, recipient need, and merit. The empirical analysis of aid allocated by 23 Development Assistance Committee (DAC) member states from the year 2009 to 2019 demonstrates that donors are indeed motivated by fragility, but a great degree of heterogeneity is identified among donors and within each of them across the nexus. It also detects a significant difference between how the state of fragility affects aid allocation and how the degree of fragility does so. These findings have important implications for financing across the nexus and the global promise of leaving no one behind.

Key words: Fragility, Humanitarian-Development-Peace nexus, Official Development Assistance (ODA), Aid allocation, Development Assistance Committee (DAC), International Cooperation

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Abbreviations and Acronyms

BMZ	German Federal Ministry for Economic Cooperation and Development (<i>Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung</i>)
CEPII	French Centre in International Economics (Centre d'études prospectives et d'informations internationales)
CPIA	Country Policy and Institutional Assessment
CRS	Creditor Reporting System
DAC	Development Assistance Committee
DFID	United Kingdom Department for International Development
DIZA	Inclusive Development Programme in Host Areas (<i>Programme de développement inclusif dans les zones d'accueil</i>)
ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations
FAO	Food and Agriculture Organisation
FCS	Fragile and Conflict-affected Situations
GDP	Gross Domestic Product
GNI	Gross National Income
GNP	Gross National Product
HDP	Humanitarian-Development-Peace
IASC	Inter-Agency Standing Committee
IOM	International Organisation for Migration
NRC	Norwegian Refugee Council
NWOW	New Way of Working
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
UN	United Nations
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

Introduction

Standing in 2021, in the Decade of Action, amid the pandemic, and at the time to envision the post-pandemic world, the global promise of ‘leave no one behind’ is at a critical juncture. To end poverty, reduce inequality, eliminate any form of discrimination, and thus to ensure no one is left behind is at the heart of the Agenda 2030. Five years into this agenda, the world still sees millions of people at the grave risk of being left far behind across continents and regions, but the most markedly in fragile contexts.

Being fragile comes with numerous implications for a state and its population. Its symptom can be manifested in the form of violence, economic impoverishment, environmental degradation, political turmoil or the absence of social security. In any form may it be, fragility continues to deprive people of their right to live prosperous, peaceful, and free life. It also poses a threat to the international endeavour for meeting the Sustainable Development Goals (SDGs). In 2020, prior to the outbreak of the pandemic, 76.5 % of the world’s extremely poor resided in fragile contexts, and no country in the state of fragility was on track to achieve SDGs on hunger, health, gender equality and women empowerment (OECD, 2020a). While the global north slowly recovers from the COVID-19 pandemic, its consequences in fragile contexts keep widening the economic, educational, health and gender inequalities which could leave them even further behind. If the world is to fulfil the promise of leaving no one behind, it has to do more to leave no fragile context behind.

“At the heart of this catalogue of human suffering is fragility. Each crippling number demonstrates how critically important it is that the international community strive even harder to better understand, anticipate and respond to both the drivers and consequences of fragility.”

(Charlotte Petri Gornitzka and Jorge Moreira da Silva, in OECD 2018, p.8)

The pandemic has made it crystal clear that in the era of globalisation and the ever-connected world, everyone takes part in tackling global threats. One can no longer remain either unconcerned or unaffected by what is happening in other corners of the world. Likewise, to take action for a seemingly distant world is not only for others’ good but for its own too. One of the powerful instruments to address such global challenges through the collective will and effort of people is the Official Development Assistance (ODA). It has been a critical source of finance to materialise international humanitarian assistance, development projects, and peacebuilding effort in developing countries, including fragile contexts. However, it is also rather fragmented and not employed in a way synergising the comparative advantages of different actors. Elevated coordination across sectors and among donors is hence paramount to unleash the maximum potential of ODA in managing fragility and other complex issues.

Responding to such need for a coordination framework is the Humanitarian-Development-Peace (HDP) nexus. It refers to the interlinkage of the three sectors which are now widely operating in separation from one another, and underscores the necessity to reinforce the collaboration, coherence, and complementarity across three pillars. The importance of the nexus notwithstanding, partly due to its conceptual novelty, there is still a poor understanding of how donors allocate ODA across the nexus in reaction to fragility. Only when policymakers are well informed of the current aid flow across the nexus and forces behind it will they be able to better coordinate and adopt more coherent strategies. The purpose of this research thus is to identify potentially differing role fragility plays as a donor’s motive across

the nexus and investigate if and how the aid allocation is tailored to address fragility. It does so by econometrically analysing the link between ODA allocation and indicators of fragility. By filling the knowledge gap in the aid-nexus-fragility dynamic and providing a fresh look at the international cooperation landscape, it aims to assist donors and other policymakers to enhance the understanding of each other, and thereby setting a common ground for levelling up the engagement and for enhancing the coherence between their policies.

With these objectives, this research intends to answer the primary question:

“How are donors motivated by the fragility of recipient states?”

In addition, two sub-questions will be addressed for more specifically accounting for the primary question. First,

“How does the impact of fragility on aid allocation policies differ across the HDP nexus?”

And second,

“What roles do the ‘state’ of fragility and the ‘degree’ of fragility play as a donor’s motive?”

There are two ways of associating contexts to fragility. One is to label them as being in the state of fragility, and the other is to put them in a spectrum and indicate the degree of fragility. The present study attempts to see if these contrasting methods have different implications on aid policies. Fragile contexts refer to fragile countries and territories, as in (OECD, 2020a), but it will be used interchangeably with fragile states or fragile environments. This paper is structured as follows. First, it elaborates on key concepts, namely fragility, the humanitarian-development-peace nexus, and ODA to have a conceptual clarity throughout the research. Second, an existing body of relevant literature is reviewed to establish the theoretical and empirical underpinning of the research. Third, a methodology chapter clarifies how data are operationalised and examine several estimation methods of which one is selected. Fourth, the results of the quantitative analysis will be presented along with a discussion on their policy implications. The final chapter concludes the research with acknowledgement of limitations and insights on a way forward.

Conceptual framework

This chapter aims to unfold key concepts in this research and to keep the subsequent analysis free from conceptual ambiguity. Along with the conceptual discussion, a theoretical linkage among key concepts will be established to pave the smooth way for the review of relevant literature.

Unfolding Key Concepts

Fragility

Fragility is a growing concern of the international community due to its destabilising and often perpetuating effects on national, regional and international security and development. While fragility is often associated to conflict and violence, they are by no means synonyms. The symptoms of fragility may manifest themselves across economic, environmental,

political, security, societal and human dimensions and to various degrees. While it is where support is needed the most, the unstable governance and incapable institutions often found in fragile states make them perceived to be where aid cannot be used the most effectively. What constitutes state fragility, thus, is not only an academic debate, but it is also of great relevance to aid allocation and development cooperation policies that aim to tackle fragility (Toh and Kasturi, 2014). Indeed, prominent development actors have constructed their own definition of fragility in their effort to take measures specifically addressing this issue.

For instance, the World Bank classifies certain countries as fragile and conflict-affected situations (FCS) based on the score of their Country Policy and Institutional Assessment (CPIA). Their classification is based on the quality of policy and institutions, on the one side, and the presence and intensity of conflict, on the other (World Bank, 2020a).

The U.K Department for International Development (DFID) has its working definition of fragile and conflict-affected states as countries whose government are unable or will not fulfil core state functions including guaranteeing security and justice and providing basic needs to its people (Independent Commission for Aid Impact, n.d.)

The Organisation for Economic Co-operation and Development (OECD) defines fragility as “the combination of exposure to risk and insufficient coping capacity of the state, systems and/or communities to manage, absorb or mitigate those risks” (OECD, 2020a, p.15). Notably, they do not specify specific symptoms of fragility like other definitions. Rather, it captures two conditions, namely the exposure to risk and lack of coping capacity, under which fragility can ignite. In their fragility framework, the state of fragility is measured in five dimensions: economic, environmental, political, security, and societal, recognising the multidimensional nature of fragility.

The Fund for Peace lists common attributes of state fragility including, but not limited to, the erosion of state legitimacy, the loss of control over its territory, and the incapacity to deliver public services (Fund for Peace, 2021a). Fragile States Index (FSI), their own measure of the degree of fragility, is composed of various indicators divided into five groups: cohesion, economic, political, social, and cross-cutting indicators.

In the quantitative part of the analysis, this paper focus on the last two, namely the OECD’s state of fragility framework and the Fund for Peace’s Fragile States Index to investigate how state fragility interacts with aid allocation policies. These two have been selected among others for a couple of reasons. First, they, though in differing manners, both take into account the multidimensionality of fragility which enables them to account for the complexity of fragility beyond conflict and violence. Second, while the former classifies certain countries as being fragile, the latter gives a specific fragility score to each country. In other words, while the former is indicative of the ‘state’ of fragility, the latter is indicative of the ‘degree’ of fragility. It allows the study to conduct a comparative analysis of the potentially differing impact of the state of fragility and the degree of fragility on aid allocation policies. In the following section, the HDP nexus, another key element of this research, and its relevance to aid and fragility will be discussed.

Humanitarian-Development-Peace Nexus

The HDP nexus or the triple nexus, thereafter ‘the nexus’, is an evolving concept referring to the interlinkages between humanitarian, development, and peace actions. At the World

Humanitarian Summit in 2016, stakeholders agreed on the New Way of Working (NWO) which calls for enhanced cooperation between humanitarian and development sectors, hence humanitarian-development nexus, based on the synergy of comparative advantages in pursuit of collective outcomes. Collective outcomes here can be read as measurable results sought by both humanitarian and development sectors to reduce risk, vulnerability and need of people while building resilience (OCHA 2017).

Peace as the third pillar was added in recognising that without peace, sustainable development and tangible solutions to displacement cannot be materialised. Peace actors addressing the underlying causes of conflict plays an indispensable role in reducing humanitarian needs (Dalrymple and Urquhart, 2019). The addition of the third pillar underlines the need for elevating the level of communication and coordination between peace actors and the other two pillars of the nexus.

The nexus approach is being regarded as critical by numerous actors operating in fragile contexts. In World Bank's Strategy for Fragility, Conflict, and Violence 2020-2025, it is stipulated that partnerships across the nexus are necessary considering often long-lasting conditions of fragility and the spill-over effects of conflict affecting sectors across the nexus (World Bank, 2020b). Conflict is not the only element of fragility that have transcending impacts across the humanitarian, development and peace sectors. Economic, environmental, political, societal and human fragility can all find its own way of having adverse impacts across the nexus. International community is increasingly recognising that fragility shall be addressed in a coherent manner across humanitarian, development and peace sectors (Tarpey, 2020).

Against this background, this research seeks to see how, across the nexus, fragility has an influence on international cooperation policies, in particular ODA allocation, of OECD Development Assistance Committee (DAC) members.

DAC and ODA

The OECD DAC is an international forum of the largest providers of foreign aid mandated to promote development cooperation and the implementation of the 2030 Agenda for Sustainable Development (OECD, 2021a). Out of the 37 current OECD member states¹, 30 of them are DAC members².

ODA is a term coined by the OECD in 1969. It is government aid intended to facilitate the economic development and welfare of developing countries (OECD, 2021b). In principle, foreign aid provided by OECD member states to the DAC list of recipients³ is labelled as ODA. In 1970, the UN General Assembly resolution adopted the common target of securing 0.7% of Gross National Income (GNI) for ODA. Most DAC member states have accepted the target, often as a long-term goal, which remains endorsed till today. ODA/GNI ratios are thus used to measure each DAC member's performance (OECD, 2016a). Although a majority of donors have a long way to go before reaching this goal, the significance of ODA is still widely acknowledged as an essential source of financing for development.

Linking Fragility and Nexus to ODA

While each donor country has their own priorities in its development cooperation policy, DAC, as a group of major donors, has certain areas of common priority for its member states.

DAC Chair's Priorities 2020-2021 points out the estimate that by 2030, fragile and conflict-affected states will be home to 80% of the world's poorest, and includes investing in fragility as one of their prioritised areas (OECD, 2020b). The elevated focus on fragility is found in national ODA policies as well. For instance, USAID's policy framework (2019) maintains that strategic approaches to fragility will be examined in prioritising conflict prevention and resilience building while underlining the pressing need for tackling the dynamic feeding the fragility. The UK Department for International Development (2015) emphasises the alignment of its national interest with addressing fragility which is identified as one of the root causes of migration. The Swedish Ministry for Foreign Affairs (2016) highlights the vulnerabilities of fragile states including inadequate health care, lack of access to education, and extreme poverty in their policy framework for development cooperation, and states that it is a must to increase the presence of development actors in fragile states. These are only a few instances among dozens of other countries' ODA policies in which fragility is indicated as an imminent issue to be addressed. Last but not least, there has been a continuous dialogue between fragile states and development partners in their collective effort to construct a new, improved development architecture in fragile contexts. For instance, A New Deal for Engagement in Fragile States, endorsed by 47 countries and organisations at present, was developed through the forum of the International Dialogue on Peacebuilding & Statebuilding (International Dialogue, 2021).

The growing concern on fragility shared by the international community also made it clear the need for a better way of working together, sharing information, coordinating, programming, and financing in more coherent manners across different sectors and beyond institutional frameworks. DAC Recommendation on the Humanitarian-Development-Peace Nexus, adopted in 2019, responds to such need by providing a comprehensive coordination framework across the nexus which guide adherents' operations in fragile contexts (OECD, 2019). Being the first DAC recommendation since 2011, the inauguration of this legal instrument signals the pre-eminence of the nexus on the sphere of international cooperation. Evidently, for donors, endorsing and adopting the nexus approach has implications on their aid policymaking.

Literature review

This chapter presents consolidated findings from the review of relevant literature. Previous aid allocation studies, in particular but not limited to those employing the econometric analysis, will be comprehensively reviewed. Three goals shall be reached by the end of this chapter to establish the underpinning of this research. First, it compiles evidence from empirical analysis conducted in the past. Second, it identifies the gap in knowledge. And third, it defines the way fragility is incorporated into the structure of this research.

Aid Allocation: A State of the Art

As a major financing instrument of international cooperation since its advent to date, ODA has been drawing a substantial degree of academic interest. What are the motives of donors, what are the determinants of aid allocation, what drives the volatility in the aid flow; these are amongst questions which have been long addressed by scholars and yet to see definitive answers. Reflecting the heterogeneous nature of aid allocation policies which can vary year by year, donor by donor, and context by context, the scholarly debate has also been inconclusive yet evolving over time. Initially, donor's self-interest and recipient need were

two major groups of variables included in quantitative aid allocation studies. Since Burnside and Dollar's (2000) seminal finding that aid is effective as long as the recipient country's policy environment is adequate, it has become a common practice to include the third group of variables, namely merit.

Self-interest

Donor's self-interest has been frequently found to have a causal effect on aid allocation. A great majority of studies include economic motives, such as trade relations, as one of the self-interest variables. Barthel et al. (2014) found that donors react to other donors' aid giving when they are competing exporters to a certain recipient country. Younas (2008) posits that more aid goes to recipients who import products in which industrialised donor countries have a comparative advantage, namely capital goods. Other studies, such as Degnbol-Martinussen and Engberg-Pedersen, 2003 and Furuoka, 2017 back these findings by identifying a robust link between trade or commercial relations and aid allocation. Although donors do not often explicitly mention these economic interests as their motive towards aid distribution, evidence points out the existence of such interest across time and donors.

Another group of literature focused more on the geopolitical interest of donors and suggested they have significant impact on aid policies. Alesina and Dollar (2000) found that disproportionately high volume of US aid was going to Israel and Egypt, favoured destinations of French aid was its former colonies, and Japanese aid has a bias to recipients with similar political interests measured by UN voting patterns. Hoeffler and Outram (2011) suggest that more UK and US aid flows to recipients who align with them in voting at the UN. Canavire-Bacarraza et al. (2005) found a trend that former colonial powers, not limited to France, grant substantially more aid to recipients with colonial ties. However, some authors cast doubt on this seemingly intuitive connection. Berthelemy and Tichit (2004) spotted a fading link between former colonial relations and aid flow since the end of the cold war. Berthelemy (2006a) further argues that the priority for trade partners, rather than former colonies, has a dominant impact on aid policies. His finding indicates that former French and British colonies, if they are not big trade partners with them, receive relatively less aid.

In addition, a broader range of geopolitical interests have been defined and found to have a significant impact on aid policies by, among others, Fuchs and Vadlamannati (2012), and Nagatsuji (2016). The study from Opršal et al. (2020), for instance, shows that certain donors give preference to recipients in their geographical proximity. Lahiri and Raimondos-Møller (2000) shed light on yet another aspect: lobbying and ethnicity. Their research reveals the influence of ethnic groups in donor countries who lobby the government to favour their countries of origin in the aid allocation.

Recipient need

The second category of aid allocation motive is recipient need. Aid, or otherwise called Official Development Assistance or overseas assistance, is by definition meant to be an altruistic financial transfer. Looking at the official aid policy of any donor country, one of the primary objectives of aid is indicated as addressing developing countries' needs. If the policy says the objective of aid is to alleviate poverty, for instance, then one would expect it to flow the most into the poorest countries. To some extent, evidence suggests donors' need-oriented behaviours as well. Several studies, such as Thiele et al. (2007) and Furuoka (2017), have seen a negative correlation between the recipient's economic needs, often measured by Gross

Domestic Product (GDP) or Gross National Income (GNI) per capita, and the amount of aid. It indicates the poorer the country, the more the inflowing aid.

Eger et al. (2018) found that in certain sectors such as environmental protection and governance, aid is allocated based on needs. However, they also detected that in other sectors of critical importance including health, water and sanitation, need is not taken into account. Their study reveals differing roles that recipient need as a motive plays across sectors.

Findings of this kind raise a question of what, aside from the moral duty, other factors play a role in explaining the need-(dis)orientation of donors. One of such factors is aid effectiveness. Dreher et al. (2013), for instance, shows that aid motivated by political interests rather than need comes at the expense of effectiveness, especially in macroeconomically fragile countries. However, the relationship between need and effectiveness is not so straightforward. Carter (2014) pointed out that it is not necessarily optimal to distribute aid to the most needed when recipients are constrained with aid absorption capacity.

The size of populations is another commonly used indicator of need because the larger the population, the more need there exists. However, when looking at the relationship between the per capita aid and the size of the population, there does not seem to exist a rule of thumb. Harrigan & Wang's (2011) study reveals that, on the one hand, the higher per capita amount of British and American aid was distributed to countries with a larger population. France, Italy, Japan, and multilateral organisations' aid, on the other hand, had an opposite trend, namely the larger the population, the smaller the per capita aid. This correlation between less population and more aid per capita is called population bias. It is partly explained by the higher marginal political benefit donors gain from small countries, but it also points to donor's concern on populous recipients' capacity as well as administrative expertise to absorb and effectively use additional aid (Dowing and Hiemenz, 1985).

Feeny and McGillivray (2008) focused on donors' response to several development indicators including population, and balance of payment, GNP per capita and its growth rate. While their overall result is in favour of the positive aid-need link, it also demonstrated that donors' behaviours substantially vary depending on recipients, especially when it comes to GNP figures. In Egypt, Indonesia, and Pakistan, they increased aid as their per capita GNP decreased: an expected result. However, in India, Kenya, Tanzania, and Thailand, as their per capita GNP rose, aid also rose. This result is relevant to the so-called middle-income bias, where the increase of per capita aid is correlated to the increase of per capita income up to a tipping point after which aid starts to decrease (Dowing and Hiemenz, 1985). Part of the explanation for this bias is the concern on recipients' capacity. The middle-income countries are perceived to be capable of spending aid more efficiently than the poorest countries, which makes them donors' favourite.

The debate on the potential trade-off between recipient need and aid effectiveness has a strong implication on aid policies, as every government would want their aid to be effectively spent. This very concern on effectiveness was what gave rise to the third category of donor's motive in the aid allocation research, namely merit.

Merit

In 2002, the government of more than fifty countries gathered at the International Conference on Financing for Development in Monterrey, Mexico. The Monterrey Consensus adopted by this conference suggests that sound policies and good governance are preconditions for aid effectiveness (United Nations, 2003). Dollar and Levin (2006) assent to this logic and call it institutional selectivity when donors choose to allocate their aid to countries with sufficient institutional and policy framework to spend resource effectively. One of the pioneering pieces in this field from Burnside and Dollar (2000), for example, examined the relationship between aid and policies. They established a robust link between aid effectiveness in growth and good fiscal, monetary, and trade policies, making a strong case for systematically conditioning aid on sound policy.

It has to be noted, however, that the recipient's merit is not only about sound institutions capable of using aid effectively. In so far as merit is not clearly defined, one may see it as a measure of the prospect that aid will be distributed fairly, and others may see it as a measure of risk that aid will be misused. It is essentially about each donor's view on what kind of institutional and political environment they want their aid to be delivered. The empirical studies on the link between aid allocation and merit so far present mixed results, likely because these studies use different indicators of merit, focus on different countries, and employ different research methods.

In'airat (2014) explored how aid flow is related to six dimensions of governance: voice and accountability, government effectiveness, lack of regulatory burden, rule of law, independent judiciary system, and control of corruption. Among those, voice and accountability and control of corruption had a particularly strong effect on the allocation of aid, which is, the stronger these aspects of governance, the more aid given. In contrast, Hoeffler and Outram (2011) produced evidence that economic policy, democracy, and human rights, which are their merit variables, play little role in aid allocation policies with exceptions of only a few countries. In Neumayer (2003a), while civil and political rights did have an impact on most donors' aid, personal integrity rights were taken into consideration only by a few of them. Neumayer (2003b) puts forward that neither the respect of human rights nor the level of corruption significantly influenced donors' aid policies. Alesina and Weder (2002) also affirm that there is no evidence that countries with the less corrupt government are rewarded with more aid.

Reviewing variables of these three kinds makes it clearer the current understanding of aid allocation and where the centre of the scholarly debate is. However, it also makes it apparent that a very limited amount of literature focuses on fragility, let alone the nexus, in relation to aid allocation. Very few, if any, of studies reviewed above had a focus or even a mention of fragility and nexus. Thus, the following section will seek to shed light on some of the rather uncommon literature putting a specific focus on the interaction of fragility and aid across the nexus.

Aid in Fragile Contexts

A brief history

The history of international aid initiative in fragile contexts dates back to the aftermath of the Second World War. The European Recovery Programme, also known as the Marshall Plan,

played an important role in assisting war-torn Europe to recover. This successful case inspired other international cooperation initiatives applying a similar logic, namely reconstruction and development of fragile and conflict-affected states through aid programmes. The German Federal Ministry of Economic Cooperation and Development (BMZ)'s "Marshall Plan with Africa", launched in 2017, is one of the recent examples. However, evidently, the post-World War II Europe and today's fragile contexts are different in many ways. In particular, while fragility is often chronic at present, the post-war state of fragility in Europe was rather temporary. Rebuilding once stable and powerful states in Europe is different from building such states where one never existed before, and thus what worked in temporarily fragile states do not necessarily work in chronically fragile states (Gisselquist, 2015). Aid initiatives have also been evolving with lessons learnt over years, but it has still proven highly challenging for development partners to tackle the protracted fragility that states face today.

Aid effectiveness

One of the unresolved questions of aid in fragility revolves around the state ownership of aid projects. In 2005, the Paris Declaration on Aid Effectiveness outlined five principles of aid effectiveness, one of which is state ownership. It was stipulated that developing countries shall set their own strategies in tackling their challenges. The importance of state ownership and developing countries' wider participation in development policy making was reemphasised in the Accra Agenda for Action in 2008. The ownership as a principle serves as a strong call for enhanced localisation of development projects rooted in specific contexts. However, in practice and especially in fragile states, it keeps donors in an agonising dilemma. In fragile states, the legitimacy and accountability of the government may often be questionable. When one government appear to be capable of using aid effectively and another seems less so, it is tempting to allocate more aid to the former. However, when the former is at the same time more authoritarian and recurrently abusing human rights, then donors must consider an ethical implication of supporting such government and make a painful trade-off.

Curtis (2015) brings this issue into the spotlight. His case study focuses on the then Rwandan and Burundian governments' interaction with donors. Rwandan regime was able to present itself as an effective moderniser in the eye of donors by continuously putting emphasis on their economic progress and projecting it as an alternative source of their legitimacy. However, it was also the regime that was criticised for authoritarianism and muting the voice of political opponents. Burundian regime, on the contrary, was less organised to manage donor relations and unable to articulate a narrative that appeals to donors. Nevertheless, it was partly due to their effort to be inclusive, share the power, and not suppress competing voices. Donors could have rewarded this inclusiveness, but preference went to Rwanda which was rather efficient at appealing to donors.

Another highly relevant contribution is made by Abegaz (2015). His research on aid in Ethiopia observes that aid worked to reduce destitution. Nonetheless, it also ended up reinforcing exclusionary state institutions and enfeebling independent civic and political organisations as well as the private sector. It is what he calls the aid-institutions paradox. He argues that donors focused on areas where their interest coincided with that of the Ethiopian regime, primarily poverty reduction and geopolitical objectives. However, donors disregarded issue areas like human rights and governance which did not coincide with the Ethiopian government's interest.

The debate on state ownership and accompanying research focused on fragile states signal a strong link between fragility and merit or aid effectiveness. Many of the elements taking part in this debate, including institutional capability, economic policies, governance, corruption, accountability, legitimacy, and human rights have been identified as some of the indicators of the recipient merit. More often than not, fragile contexts are assumed to be ill-equipped with the absorptive capacity of aid, and thus less merit. However, it happens when fragility and merit are similarly defined based on a measure focusing on a country's policy institutional quality, such as the Country Policy and Institutional Assessment (CPIA) score (McGillivray, 2006; Feeny and McGillivray, 2009). As it has been discussed throughout this paper, both fragility and merit are rather complex and multidimensional concepts of which institutional quality is a part, but by no means an entirety. That being said, it appears far from conclusive if fragility necessarily reduces merit and aid effectiveness, but it does have an irrefutable implication on them.

The difficulty of balancing between recipient state (government)'s development priorities, 'do no harm' principle, and aid effectiveness is particularly glaring in fragile states. While this line of argument is prone to focus on economic and political aspects, another element without which the aid policy and fragility cannot be accounted for is the security concern.

Conflicting security interests

A watershed that brought the 'fragility and security' agenda to the broader attention of the world was the 9/11 terrorist attacks. This shocking event reminded the international community of the spill-over effect of discarding impoverishment and instability in different parts of the world.

“When development and governance fail in a country, the consequences engulf entire regions and leap around the world” (USAID 2002, p.1).

The security concern stemming from fragility has two faces. One is on the security of people living in fragile states, and the other is on the security of people in the outside world. From the donor's perspective specifically, security matters to two different constituencies: citizens at home, and citizens in recipient countries. This puts not only donors but also recipients and aid projects as a whole in fragile states in a highly perplexing situation. At the recipient country level, more often than not, conclusions drawn from the security perspective on how to tackle fragility differ from how the development perspective would articulate strategies vis a vis fragility. When donor's own security concern comes into play which is usually the last thing they would compromise, it adds another priority area in the picture which might not coincide with either recipient's national security concern or key development issues. Taking into account the presence of multiple donors in a recipient country whose security interests do not always look alike, it becomes evident how much conflicts of interest revolves around the security agenda, even if what they are all trying to do at least on the surface is development (Faust et al, 2015).

From the aid allocation point of view, this controversy over security points towards two facets of fragility. First, being involved in aid projects in fragile contexts essentially comes with another trade-off between self-interest and recipient need. It is about deciding how much of priority whose security is, and how much of compromise they make on recipient need, including but not limited to their security, for the sake of the donor country's own security. Other thematic issues other than security also have cross-border impacts and thus boil down

to the question of self-interest and recipient need. Fragile states are often the vector for the destabilising forces of humanitarian crises, criminal networks, intensifying poverty, and regime collapse which can have global ramifications (USAID, 2005). Collier et al (2003) argue the hard drug trafficking, the spread of HIV/AIDS, and international terrorism, which are all global threats, to some extent take roots in the lack of order and weak rule of law in conflict-affected areas. When looking this way, the boundary between the recipient need and donor's self-interest starts blurring as the symptoms of fragility and its side effects are rarely contained within fragile contexts.

Second, working in coordination, both among donors and across sectors, is particularly challenging yet important in fragile contexts. As seen in the case of differing security interests among stakeholders and trade-off between security and development, fragility stands side-by-side with a complicated web of interests and interlinked affairs. The international cooperation has seen enough of one pursuing its own interest and priority while turning a blind eye to the rest, and the persistence of fragility could not make it clearer that it simply does not work this way. It is hard to deny the imminence of enhancing donor coordination and cross-cutting approach in fragile contexts. A New Way of Working was one of the responses of the international community to such a call for a coordination framework, and the HDP nexus aspires to further level up the initiative.

International Cooperation across the HDP nexus

Whether natural or manmade, crisis and fragility generate humanitarian needs. Humanitarian action can address such needs but cannot prevent crisis or end needs by itself without sustainable development and political solutions to conflict addressing the root causes of the crisis. Hence, the HDP nexus can be seen as a reflection of the reality in fragile contexts where the absence of peace produces humanitarian needs which often unavoidably take precedence over development which, in turn, is crippled by violence. On the other side of the coin, it is also an operational imperative for the three pillars to come together, understand one's action has an impact across the nexus, and collaborate for more efficient and effective intervention. For instance, instead of development actors withdrawing when crisis outbreaks and humanitarians come in its replacement, development operations shall maintain its presence during the crisis, help resilience to hold, and plan well in advance the transition to development in a predictable manner (Council of the European Union, 2017; IASC, 2016).

Increasing coordination effort across the nexus has been reported from the field as well. The European Union sets resilience building as a core objective of its nexus implementation. Their DIZA programme in Chad targets the most vulnerable people including refugees and internally displaced people and combines the humanitarian and development elements by sequencing the help ranging from improved access to basic needs and services to job creation and capacity building for sound local governance and resilience (ECHO, 2021). While some signs of progress have been observed, manifold challenges remain as well. It can be argued that humanitarian and development sectors are difficult to juxtapose as they belong to discrete discursive and institutional segments of the international cooperation system. Development assistance takes a long-term, rights-based, and politically sensitive approach which does not resemble humanitarian action's needs-based and rather an apolitical approach. They can result in challenging each other rather than creating a synergetic effect under the initiative instigated by the nexus (Lie, 2020)

Highly pertinent to this gap existing between pillars of the nexus is the financing aspect. IOM's report on nexus operationalisation consolidates lessons learnt from five countries: Colombia, Mali, Nigeria, Somalia, and Turkey. One of the key recommendations based on case studies suggest donors to adopt funding mechanisms bridging the HDP spectrum and avoid making gaps between the humanitarian and development funding streams which hinder other dimensions of the nexus approach, in particular programming (Perret, 2019). Indeed, the financing across the nexus remains one of the conceptually least clear and operationally most challenging aspects of the HDP nexus. The Humanitarian-Development-Peace actors are in their own silos, and by separating the funding stream between sectors, financing instruments oftentimes widen the gap rather than filling it and hamper collaboration (UNDP, n.d.). FAO, NRC and UNDP's (2019) joint report on nexus financing posits that financing tools have not had sufficient time to adapt to the nexus agenda, yet it is therefore opportune to discuss strategically how financing can play a role as an enabler and a source of incentives to scale-up collaboration rather than merely a source of funding. In short, financing is a part of the nexus where the progress has been particularly slow, but where the great opportunity lies too.

Gap in Knowledge: Fragility and Nexus in Aid Allocation Studies

Previous studies on aid allocation as reviewed above provide a solid basis for this research. With regard to fragility, there is relatively more research on aid effectiveness in fragile contexts (Toh and Kasturi, 2014; Caselli and Presbitero, 2020). However, a body of academic literature investigating an interaction between state fragility and aid allocation is much smaller. Some of the few studies dealing with this subject are Carment et al. (2008) and Carment and Samy (2019). Carment et al. found that the degree of fragility is positively correlated to aid received as a percentage of GNI. They also found that among authority, capacity, and legitimacy as three components of fragility they define, the first two correlate with aid allocation but the latter does not. The latter finding was confirmed by Carment and Samy. There are some studies that added CPIA an indicator of policy and institutional capability (Collier and Dollar, 2002; Claessens et al., 2009; Dreher et al. 2009).

This study does not define fragility merely as an environment with weak institutions and policy implementation, but as a state where differing extents of economic, environmental, political, security and societal instabilities coexist, as in the idea of OECD's fragility framework and Fund for Peace's Fragile States Index. When fragility is defined this way, to the best knowledge of the author, there is no published study so far which analyses econometrically a link between aid allocation and fragility. However, it is this fragility which donor countries are keen to talk about and claim to be their priority issue. Neither has there been research of this kind comparing the state and degree of fragility. Similarly, at the moment, very little academic research has been made to detect donor's funding motives across the nexus. While the narrative which places fragility as a high priority area for the international community dominates the scene, if and how fragility is indeed motivating donors to allocate aid across the nexus is where a large knowledge gap exists. However, to understand it is a *sin qua non* to formulate coherent financing strategies to tackle fragility collectively and effectively. This research thus aims to fill this knowledge gap and provide a fresh look at the global effort for 'leaving no fragile context behind'.

The discussion so far has shown how fragility has significant implication on all the three conventionally defined motives of donors, i.e. self-interest, recipient need, and merit. It has also made it clear that to tackle fragility, donors have to coordinate better among themselves

and across the nexus. It will be challenging and probably inappropriate to classify fragility as either self-interest, recipient need, or merit. Moreover, with particular relevance to the nexus, fragility stands in a unique position in the structure of this research which encompasses aid across three pillars of the nexus. Taking these unique features into account, this study adopts fragility as the fourth category of donor's motive, and it will be interpreted as such. ODA allocation is then defined as (α is the intercept, β is the coefficient, and ε is the error term):

$$\text{Aid allocation} = \alpha + \beta_1 \text{self-interest} + \beta_2 \text{recipient need} + \beta_3 \text{merit} + \beta_4 \text{fragility} + \varepsilon$$

The following chapter will elaborate on how each variable, namely aid, self-interest, recipient need, merit, and fragility, is operationalised and the estimation method employed.

Methodological Framework

This chapter will elaborate on the design of the quantitative research. The first section introduces variables included, clarify how data is collected and operationalised, and specify how each explanatory variable is expected to interact with the dependent variable. The second section discusses several econometric models employed in previous research of a similar kind and identifies the most appropriate one for the present study.

Data and Variables

Dependent variable

This research uses the panel data with three dimensions: donor, recipient, and year. The dataset consists of key variables concerning the ODA allocation of 23 DAC members⁴ to 127 developing countries⁵ from 2009 to 2019. The dependent variable is the amount of ODA committed from donors to recipients in each pillar of the nexus in constant 2018 US dollars. Data come from the OECD's Creditor Reporting System (CRS) (OECD, 2021d). While how much commitment to make is predominantly determined by donors, disbursement figures are partly dependent on the willingness of the recipient to accept funding and their administrative capacity to receive it. Thus, aid commitment rather than a disbursement was selected as a more accurate measure of donor decisions (Tarp et al., 1998; Berthélemy 2006b). It is dyadic data in which a pair of a specific donor and a recipient is made for each observation in order to investigate the flow of ODA between them. The humanitarian, development, and peace categories of ODA are defined based on the sector codes in the CRS, in accordance with the categorisation used by the OECD⁶ (OECD 2021e). Out of the 30 current DAC members, 6 of them which joined DAC after 2009 and the European Union, a multilateral donor which is not the focus of this research, are not included in the study. Developing countries are all the recipients included in the CRS data from 2009 to 2019 except those which do not have data at all in one or more of the explanatory variables in years 2009-2019 (or 2008-2018 in case of the lagged variable). The ODA variable will enter the model in the logarithmic form to lower the risk of homoskedasticity and to allow for the interpretation of the result in terms of the percentage change rather than the absolute amount.

Explanatory variables: donor's self-interest

The explanatory variables are grouped into donor's self-interest, recipient need, merit, and fragility categories as discussed in the previous chapter. Donor's self-interest is assessed by four variables. The first one is the volume of the export of goods from a certain donor to a recipient country per year. It aims to capture the role of the donor's economic interest in defining their ODA policies. The data are from the UN Comtrade Database (United Nations, 2021). The economic interest is expected to have a positive impact on the aid disbursement: between a certain donor and a recipient, the higher the volume of trade, the higher the volume of aid. The second variable is the geographical distance between the donor's and recipient's capital cities, which shall partly account for the geopolitical interest of the donor. Geographically proximate countries' economic, political, and environmental conditions are more likely to have a spill-over effect on donor countries. Hence, this variable is expected to be in a negative relationship with aid: the further the distance between capitals, the less aid. The third variable is colonial ties. Many of the former colonial powers are now ODA donors. Their connection with former colonies is still retained today which comprises another significant aspect of their geopolitical interest. This binary variable takes value one if a donor and a recipient were previously in colonial relations, and zero otherwise. It is expected that more aid is given to former colonies than the rest. Data for the geographical distance and colonial ties are both provided by the CEPII's GeoDist Database (Mayer and Zignago, 2011).

The last self-interest variable is the recipient country's amount of CO₂ emission per capita as a proxy for the donor's environmental concern. It is not a variable that has been commonly included in the aid allocation study, thus it deserves an explanation of the rationale behind its addition. On the one hand, having the Agenda 2030 for Sustainable Development in mind, environmental conservation is now one of the central targets the development cooperation thrives to achieve. As acknowledged by the Council of the European Union (2017), environmental issues can grow the risk of conflict and increase vulnerability. With the unique interaction with both ODA and fragility, the environment is a highly relevant factor to this study. On the other hand, evidently, climate change and environmental degradation have cross-border impacts. One country emitting a high volume of CO₂ can negatively affect the welfare of every other country, including donors. It is not to say that environmental issues are in nature a matter of an individual country's self-interest. It is on the contrary global challenges which have to be tackled collectively. Therefore, unlike other elements in this category which is about donor's interest as an individual state, the CO₂ variable is treated as an interest of donors as members of the international community whose goal is to collectively address environmental issues, and it will be interpreted as such. Similar approaches have also been taken by previous studies (Thiele et al., 2007; Nagatsuji, 2016). The hypothesis is that donors would allocate more environmental aid, which is part of development aid, to countries with higher CO₂ emission per capita for the purpose of environmental protection. Thus, it is expected that CO₂ has a positive impact on the development aid allocation and no effect on humanitarian and peace aid. The CO₂ data comes from the European Union's Emission Database for Global Atmospheric Research (Crippa et al., 2020).

Explanatory variables: recipient need

Three variables will be used as a proxy of recipient need. The first one is the GDP per capita of recipients. It shall account for how donors react to recipients' economic need. The square of the recipient's GDP per capita will be employed as the second variable. The relationship

between the recipient's income level and the volume of aid is frequently found to be non-linear, as the discussion on the middle-income bias in the previous chapter touched upon. The quadratic form of GDP per capita will capture such a non-linear relationship if present. The GDP data is indicated in the constant 2010 US dollar and collected from the World Bank (2021a). An intuitive assumption will be to observe a negative link between GDP and ODA: the higher the recipient's GDP the smaller the volume of ODA. However, given the likelihood of the middle-income bias, it is expected that the GDP per capita will have a positive sign and the square of GDP per capita will have a negative sign. The third variable of need is the population of the recipient country. Overall, it is hypothesised that there is a positive relationship between population and ODA. However, taking the population bias into account, the degree of correlation between these two indicators is expected to vary substantially among donors. The population data is also from the World Bank (2021b).

Explanatory variables: merit

The recipient's merit has numerous candidate indicators but using several of them will increase the risk of multicollinearity. As many of them are already a composite of multiple indicators, what is explained by one is likely to be partly explained by others. For this reason, merit is proxied by one variable which is the Index of Freedom built by Freedom House (2021a). It is a sum of the scores of political rights and civil liberty. The highest score for the former is 40 and the latter is 60, thus the total score of 100 indicates the highest degree of freedom. Political rights score accounts for the soundness of the electoral process and government functioning while civil liberty encompasses the freedom of expression and rule of law, amongst others (Freedom House, 2021b). It is hypothesised that donors would reward this merit. In other words, the freedom index is expected to be positively related to ODA: the higher its score, the higher the ODA given.

Explanatory variables: fragility

The fourth category unique to this research is fragility. This will be measured in two ways. There are multiple measures of fragility made by different entities of which some examples were introduced in the second chapter. While their methodologies vary, most of the indicators of fragility can be classified into two groups. One shows if a country is fragile or not, and the other shows the degree of fragility experienced by a country. The lack of aid allocation literature investigating the potentially differing implications of being regarded as in the "state" of fragility and as in the high or low "degree" of fragility makes it unfeasible to select one over another based on the evidence. Thus, the present study will employ both to conduct a comparative analysis of the effect each type of fragility measure has on aid policies.

The first model will analyse how being identified to be in the "state" of fragility affects ODA policies. The data are collected from the OECD's States of Fragility series and its predecessor Fragile States Reports (OECD, 2018; OECD, 2016b; OECD, 2015; OECD, 2014; OECD, 2013; OECD, 2011; OECD, 2010; OECD, 2008). The binary variable of the state of fragility takes value one when a certain developing country is classified as being in the state of fragility by the corresponding year's report, and the zero value otherwise. In years when no report was published, for instance 2017, data from the previous year (2016)'s report are used. It has to be acknowledged that the method OECD used to identify a group of fragile states changed over the years. The point of this variable is, thus, not to strictly define what makes a country fall into the state of fragility. Rather, it aims to see if and how being labelled as fragile affects the amount of ODA developing countries receive.

The second model will replace the state of fragility dummy with the degree of fragility. For this variable, Fragile States Index from the Fund for Peace is used. This index is composed of twelve indicators grouped into four categories (cohesion, economic, political, and social). Each indicator has a score range of 0 to 10. The higher the total score (maximum 120), the higher the degree of fragility (Fund for Peace, 2017; Fund for Peace, 2021b). Both the state of fragility and the degree of fragility are hypothesised to have a positive effect on the volume of ODA. That is, countries in the state of fragility are expected to receive more aid than non-fragile ones, and the higher the degree of fragility, the higher the amount of aid received.

Lagged and log-transformed variables

Time-variant explanatory variables, namely export, CO2 emission per capita, GDP per capita, the square of GDP per capita, population, Index of Freedom, State of Fragility and Fragile States Index, will be lagged by one year. It is because when policymakers decide on the ODA commitment for the year 2009, for instance, they do not have figures of these indicators for the same year 2009. If they would take these variables into account, they have to base their decision on the latest data available, which is usually from the previous year 2008. In addition to the dependent variable, export, distance between capitals, CO2 emission per capita, GDP per capita, the square of GDP per capita, and population will be used in the logarithmic form to observe how the percentage change in these indicators affect ODA distribution.

Empirical Model

An econometric analysis of the aid allocation first has to decide if and how to take into account the truncation of the dependent variable. Aid flow cannot take the negative value, i.e. the minimum value is zero. In other words, the aid variable is censored at the threshold of zero. Especially in the case of relatively small donors, their aid goes to a limited number of recipients. As a result, many donor-recipient pairs have aid flows with the value of zero. In the present study, donors like Greece and Portugal are good examples of this case. If the number of zero allocations was small, the ordinary least square (OLS) or other methods which disregard zero observations can be appropriate as the distortion caused by them in the estimation is not large enough to render it biased. However, in the presence of many zero observations, applying the OLS which cannot account for the non-linear relationship result in biased estimates, as in Dollar and Levin (2006). The OLS assumes the expected value of the dependent variable to be linear in the independent variables. By ignoring zero observations, certain recipients are excluded from the estimation (Neumayer, 2003c). It makes the aid variable only partly continuous, hence the violation of the assumption. In the present study, approximately 61%, 86%, 80% of the development, humanitarian, peace ODA data respectively are zero observations. It is thus prudent to opt for limited-dependent variable methods which can address the truncation of the aid variable. There are three variants of the limited dependent variable approach suitable for the aid allocation research as discussed in Neumayer (2003c), Canavire-Bacarreza et al. (2005), Berthélemy (2006b), and Berthélemy and Tichit (2004), and as summarised below.

The first approach is the two-part model. Aid policymaking can be modelled as a two-step process where donors firstly choose to which countries aid will be distributed (eligibility stage) and secondly decide the amount to be allocated in each country (level stage).

Reflecting this logic, the two-part model firstly determines the probability of receiving aid by using a Probit or Logit model and secondly explains the amount of allocation by a linear model. The underlying assumption of this model is that the selection of the recipient and the determination of the volume of aid committed are two independent processes, i.e. error terms of both regressions do not correlate with each other (Barthel et al., 2014). However, when this assumption is violated, the linear estimation in the second step will likely suffer from a selection bias. It is a highly conceivable case given that unobservable factors which affect strictly positive aid allocation to a certain country may have an influence on the selection process through which it is chosen to be a recipient.

The second option is Heckman's two-step method. The procedure is similar to the two-part model in which the first step estimates the selection probability and the second step accounts for the amount of allocation. A difference is that in the second step, the inverse Mill's ratio calculated in the first step is included in the estimation along with explanatory variables which serve to correct the selection bias. A major issue of this approach is that when an identical set of explanatory variables are used in both steps, due to multicollinearity problems, the estimation becomes unreliable. Hence, there have to be one or more exclusion variables that affect the aid eligibility significantly, but not affect the volume of aid. However, it is extremely challenging to identify variables that fulfil this condition. Heckman's method is for this reason difficult to employ.

The third technique is the Tobit model. Unlike the previous two, it is a one-step method to estimate the aid commitment which directly takes the censored nature of the dependent variable into account. Aid commitment is described as the maximum of zero and a linear combination of explanatory variables so that it is ensured the estimated aid flows cannot take a negative value.

It is different from Heckman's two-step method in that it does not require an exclusion restriction to be present for obtaining a reliable result. While the Tobit model is able to take into account the censored dependent variable, it is not subject to the particular constraints imposed on the first two methods. This study thus adopts the Tobit method in its econometric analysis as the most feasible and appropriate approach for its purpose among the three. Take ODA as a dependent variable, the Tobit model can be defined as:

$$ODA_{ijt} = \text{Max}(\beta X_{ijt} + u_{ijt}, 0)$$

where i denotes the donor, j denotes the recipient, and t denotes the time (year). X is a set of explanatory variables, β is a vector of coefficient, u is an independent and normally distributed error term (Berthélemy, 2006b).

It must be noted, however, that the Tobit model has its own restrictions as well. First, it is assumed that the variables which affect the donor's decision in the eligibility stage have also an influence in the level stage. Second, these variables are restricted to determine the aid eligibility and commitment with the same sign: either positive or negative. To put it differently, the Tobit approach rules out the possibility that an explanatory variable, on the one side, increases the likelihood a country is regarded as aid eligible but it, on the other side, contributes negatively to the volume of aid committed to a country. Combining the two assumptions, exogenous variables are restrained to have the identical effect both in the eligibility stage and the selection stage. Both assumptions can be plausible, but it is certainly

not a strong norm, especially the second one. This has to be acknowledged as a first methodological limitation of this research.

In order for the Tobit method to produce reliable estimates, the assumption of homoskedasticity has to hold. The log-transformation of the dependent variable reduces the risk that this assumption is violated. As there are many zero observations in the panel data and the natural logarithm of zero is undefined, one (dollar) is added to every zero observation before log-transformation is conducted so as to retain them in the data, as in Opršal et al. (2020). Inasmuch as the aid allocation is analysed econometrically, the risk of endogeneity issue has to be minimised. In aid allocation literature it is a commonly discussed problem that explanatory variables may be endogenous to the dependent variable. The risk of the reverse causality is lowered by lagging time-variant explanatory variables as suggested by Thiele et al. (2007), for instance. However, it is not an exhaustive measure to address endogeneity. Studies like Carment et al. (2008) introduces an instrument variable to further curtail the distortion caused by reverse causality. To do so is out of the scope of this research, thereby constituting another methodological limitation.

Last but not least, it is important to recognise and address the heterogeneity among recipients. These recipient-specific elements which cannot be controlled for by explanatory variables are ideally accounted for by introducing recipient fixed effects. However, the introduction of fixed-effects which control the cross-sectional heterogeneity of observations in a limited-dependent variable model, such as Tobit, causes a consistency issue. It is so-called the incidental parameters problem (Berthélemy, 2006a). To circumvent facing this issue, this research opts for the random-effect Tobit model which has been commonly adopted by other research (Dreher et al., 2009; Harrigan & Wang 2011; Opršal et al., 2017). In addition, to detect a donor-specific trend, separate regressions for each donor will be run in both the state of fragility and the degree of fragility models. The full model of this research can be written as follows, and table 1 below briefly describes what each element in the equation mean.

$$\begin{aligned} \ln_ODA_{(i,j,t)} = & \alpha + \beta_1 \text{fragility}_{(i,t-1)} + \beta_2 \ln_export_{(i,t-1)} + \beta_3 \ln_CO2_pc_{(i,t-1)} + \beta_4 \ln_distance_{(i,j)} \\ & + \beta_5 \text{colony}_{(i,j)} + \beta_6 \ln_gdp_pc_{(i,t-1)} + \left(\beta_7 \ln_gdp_pc_{(i,t-1)} \right)^2 \\ & + \beta_8 \ln_population_{(i,t-1)} + \beta_9 \text{freedom}_{(i,t-1)} + \text{year dummy} + \varepsilon_{(i,j,t)} \end{aligned}$$

Table 1: Description of variables

Variable name in regression	Description
In_ODA	Official Development Assistance from DAC members. Log-transformed
fragility (state) (L1)	The state of fragility binary variable. Lagged by one year
fragility (degree) (L1)	The degree of fragility variable. Lagged by one year
In_export (L1)	The volume of export from donors to recipients. Log-transformed and lagged by one year
In_CO2_pc (L1)	The amount of CO2 per capita emitted by recipients. Log-transformed and lagged by one year
In_distance	Geographical distance between capital cities of donor and recipient. Log-transformed
colony	Binary variable on the presence of colonial tie between donor and recipient
In_gdp_pc (L1)	Recipient's GDP per capita. Log-transformed and lagged by one year
(In_gdp_pc) ² (L1)	The square term of log-transformed GDP per capita. Lagged by one year
In_population (L1)	Population of the recipient. Log-transformed and lagged by one year
freedom (L1)	Index of freedom composed of political rights and civil liberty. Lagged by one year.

Results and Discussion

This chapter presents the results of the quantitative analysis. The first section shows some descriptive statistics to grasp the trend of aid allocation to fragile contexts and across the nexus. The second section discusses the result of the regression analysis conducted with DAC 23 total ODA data, and the third section introduces donor-specific estimates on the fragility variables and selected explanatory variables which were demonstrated to have contrasting effect among donors.

Descriptive Statistics

This section explores the overall aid allocation trend across the nexus and to fragile contexts. In consistence with the regression analysis, all the graphs are based on the author's calculations using the Official Development Assistance (ODA) data from the OECD's Creditor Reporting System (OECD, 2021d), aid commitment rather than disbursement is chosen, and regional or unspecified ODA is excluded. Within this section, fragile contexts refer to those listed in OECD (2020a). The unit is all in constant 2018 million US dollars. It shall be noted that the figures reported by each country may be slightly inflated or deflated relative to others due to the difference in their reporting systems and criteria. Note also that certain donors and sectors have much more regional and/or unspecified aid than others, so

what is illustrated below does not necessarily tell the exact volume of ODA each donor allocated and each sector received. Rather, it is meant to grasp the overall bilateral aid distribution pattern to fragile contexts across the nexus.

Figure 1. DAC 23 total ODA to fragile vs non-fragile contexts, 2009-2019 by year

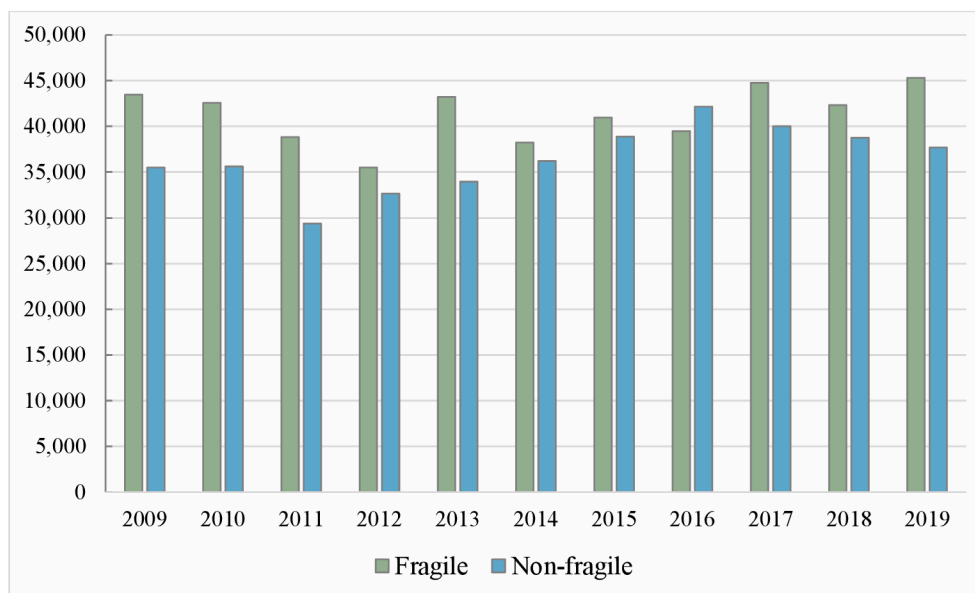


Figure 2. DAC 23 total ODA 2009-2019

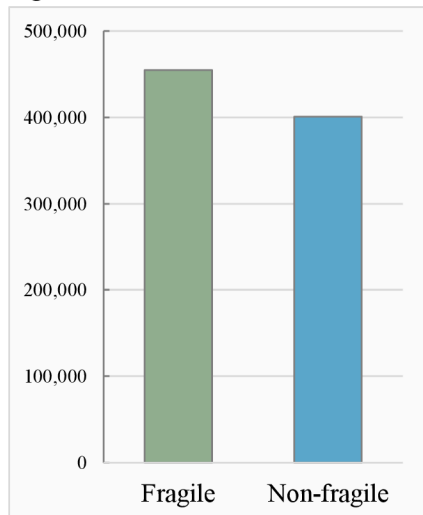


Figure 1 compares the volume of ODA committed to fragile and non-fragile contexts between 2009 and 2019. While it fluctuates over years, overall, the amount of ODA to fragile contexts has been on the increasing trend since 2012. Compared to 35.5 billion ODA to fragile contexts in 2012, it was 45.3 billion in 2019, the highest in the eleven years analysed. On the other side, since its peak in 2016 with 42.2 billion, the aid flow to non-fragile contexts has been continuously decreasing till 2019 with 37.7 billion. There has been more ODA flow to fragile contexts than non-fragile ones throughout the years, aside from 2016. As seen in figure 2, the total ODA from 2009 to 2019 to fragile contexts is about 12% more than non-fragile contexts. OECD (2020a) also points out the increasing ODA flow from DAC members to fragile contexts and emphasises that DAC members play a crucial role

in fragile states through ODA as actors in their own right.

Figure 3. DAC 23 individual ODA to fragile and non-fragile contexts, 2009-2019

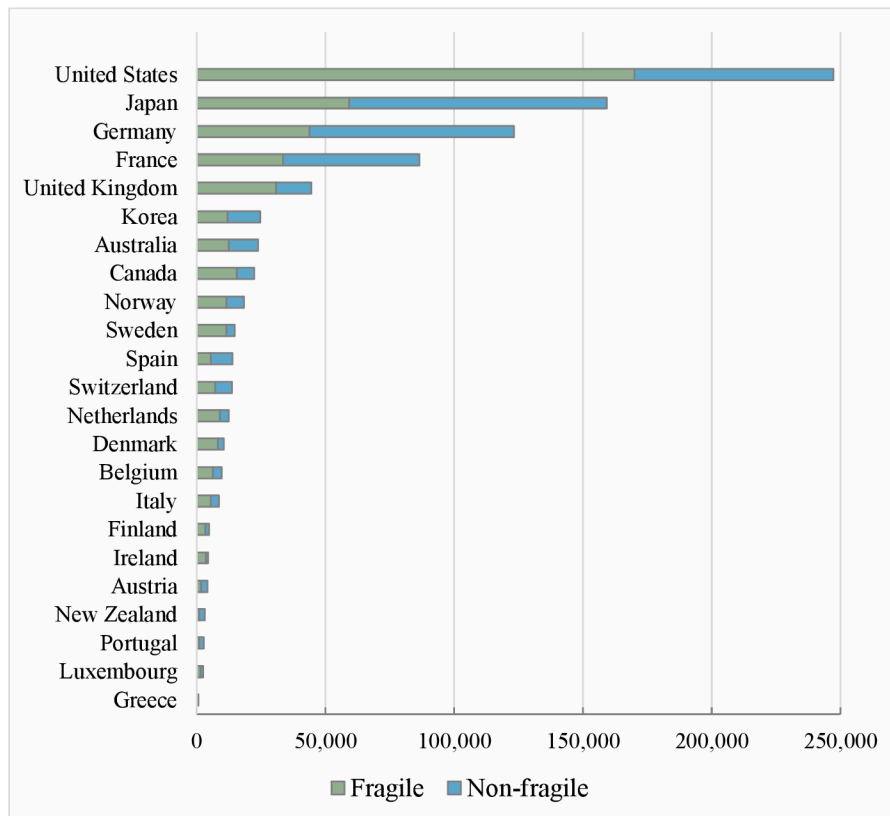
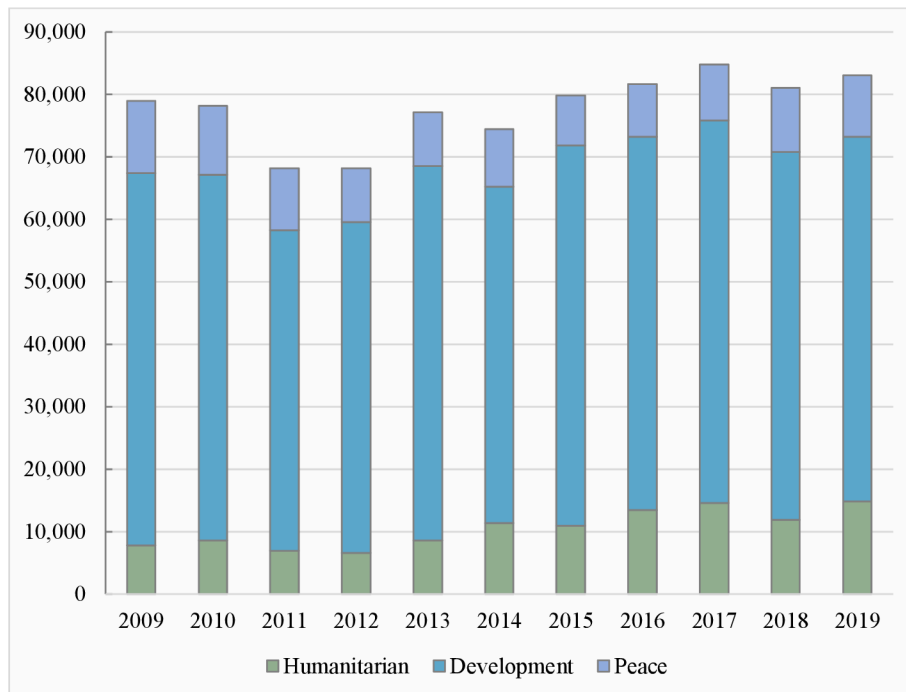


Figure 3 illustrates the total 2009-2019 ODA allocation of each DAC member. It is shown that certain donors such as the United States (69%), United Kingdom (69%) and Canada (70%) allocated the majority of aid to fragile contexts. Others including Japan, Germany, and France made more aid commitments to non-fragile contexts with 63%, 61%, 64% of their ODA respectively.

Figure 4 presents how total ODA from 23 DAC member states has been allocated across the nexus from 2009 to 2019. Humanitarian aid is taking more chunk in recent years. In 2019, it was 17.9% of the total ODA, compared to 9.9% in 2009. With 14.8 billion, the volume of humanitarian aid in 2019 was also the highest in the eleven years. It is in line with the ever increasing number of people who need humanitarian assistance, an estimated record number of 168 million people in 2020 (United Nations, 2019). Development ODA has been constantly taking more than 70% of the whole aid. The lowest volume committed was 51.3 billion in 2011, and the highest was 61.2 billion in 2017. In 2019, the amount of development ODA was 58.4 billion, the lowest in the recent five years and the proportion was 70.4%, the lowest in eleven years. Development funding is essential to address root causes of the humanitarian need, prevent crisis and build resilience, and to reduce need in the long-term. It is a shared vision of both humanitarian and development actors that to mitigate vulnerability and risk is what is necessary to fulfil the leave no one behind promise (UNDP, n.d.).

Figure 4. DAC 23 total ODA in fragile contexts across the nexus 2009-2019 by year

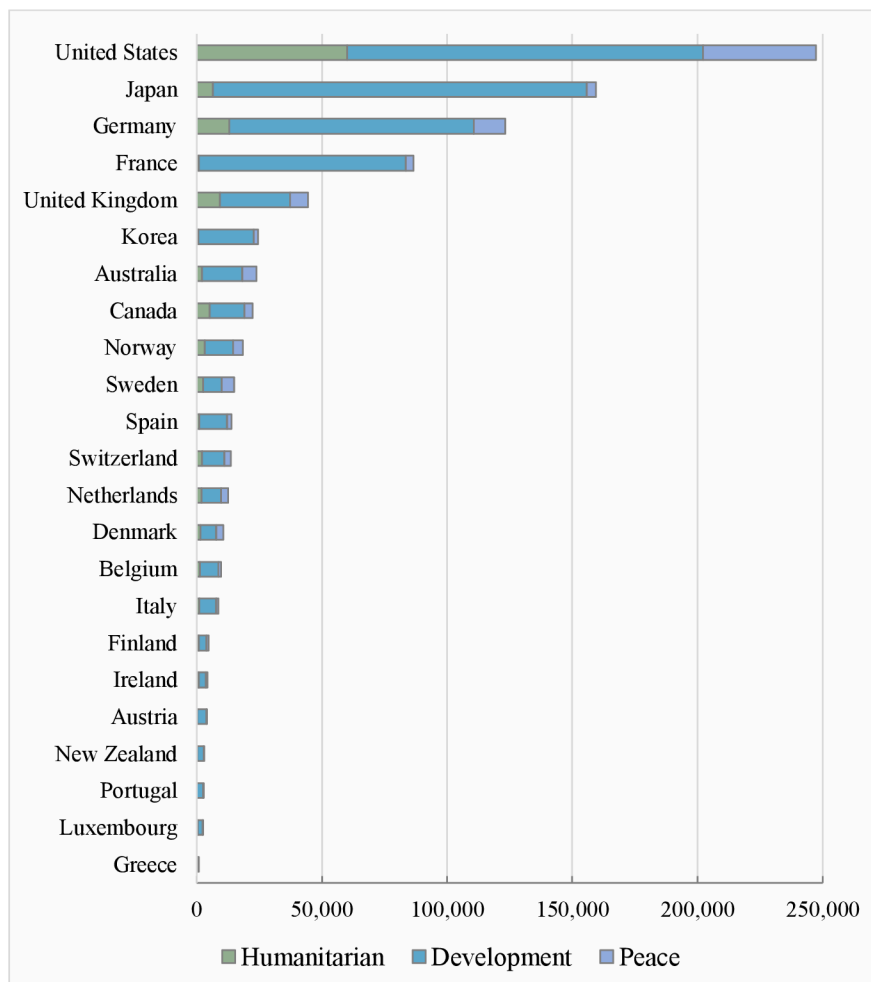


As the DAC Recommendation underlines, the principle shall be prevention always, development whenever possible, and humanitarian where necessary (OECD, 2019). The decreasing trend of development ODA is thus highly alarming, and it is one of the reasons enhanced nexus coordination to collectively address fragility is important. As Desai (2020) states, donors could save a lot of humanitarian budget and redirect it towards sustainable development if drivers of the humanitarian need are managed through ODA.

Finally, peace aid has been relatively stable in volume and proportion. They were both the highest in 2009 with 11.6 billion and 14.6% of all. Volume afterwards fluctuated between 8 billion and 11 billion, and proportion between 10 and 14% over years, with 9.8 billion and 11.8% in the latest year 2019.

Figure 5 below shows each DAC member's aid commitment across the nexus. Many of them dedicated a majority of their resource to development. Only Swedish development ODA was less than half of its entire ODA with 49.6%. Donors like Germany, the United Kingdom, and the United States have also relatively a larger bulk of humanitarian and peace aid. The United States had the highest share of humanitarian aid with the 24.3% of all, the second highest was Canada with 23.5%, and the third was the United Kingdom with 20.9%. With regard to peace aid, Sweden had the largest portion of its ODA sent to the peace sector with 32.7%, then Denmark with 25.6%, and Australia with 23.3%.

Figure 5. DAC 23 individual ODA in fragile contexts across the nexus, 2009-2019



Regression Results and Discussion - DAC 23 Total

Fragility

Table 2 presents the result of the regression analysis with the total DAC 23 ODA data as a dependent variable. It shows how the state of fragility and the degree of fragility interact with aid allocation differently. In model 1, the fragility variable had a positive sign and was statistically significant for the humanitarian ODA. When a recipient is labelled as being in the state of fragility, in comparison to those not regarded as fragile, the inflow of humanitarian aid increased by 44.7%. Model 2 confirmed this trend. It indicates that a one-point increase in the recipient’s degree of fragility rises the volume of the humanitarian aid by 6.4%. These findings are intuitive given that fragile contexts often face crises and the high levels of violence to which humanitarian funding provide support as an emergency response.

Table 2. Regression results – DAC 23 total

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.447*** (0.068)	-0.042 (0.037)	-0.012 (0.046)	0.064*** (0.005)	0.007** (0.003)	0.03*** (.004)
L1.In_export	0.319*** (0.023)	0.266*** (0.015)	0.217*** (0.018)	0.341*** (0.022)	0.267*** (0.015)	0.222*** (0.018)
L1.In_CO2	0.081** (0.035)	0.044 (0.027)	0.041 (0.029)	0.105*** (0.033)	0.044 (0.027)	0.05* (0.029)
In_distance	-0.183* (0.095)	-0.206** (0.081)	-0.529*** (0.08)	-0.063 (0.09)	-0.196** (0.081)	-0.473*** (0.08)
colony	0.355 (0.268)	2.828*** (0.248)	1.88*** (0.234)	0.304 (0.248)	2.828*** (0.248)	1.865*** (0.23)
L1.In_GDP_pc	-2.00** (0.828)	2.602*** (0.612)	2.779*** (0.709)	-3.821*** (0.807)	2.325*** (0.624)	1.554** (0.713)
L1.(In_GDP_pc) ²	0.046 (.048)	-0.214*** (0.035)	-0.218*** (0.041)	0.179*** (0.048)	-0.194*** (0.036)	-0.129*** (0.042)
L1.In_population	0.302*** (0.041)	0.43*** (0.031)	0.332*** (0.034)	0.189*** (0.039)	0.422*** (0.031)	0.287*** (0.034)
L1.freedom	-0.015*** (0.002)	0.008*** (0.001)	0.005*** (0.002)	-0.003 (0.002)	0.009*** (0.001)	0.01*** (0.002)
intercept	2.321 (3.604)	-17.008*** (2.756)	-14.472*** (3.123)	2.848 (3.441)	-16.742*** (2.757)	-13.077*** (3.086)
sigma_u	2.196*** (0.061)	2.39*** (0.048)	2.201*** (0.052)	1.985*** (0.057)	2.388*** (0.048)	2.159*** (0.051)
sigma_e	1.40*** (0.018)	1.052*** (0.008)	1.074*** (0.011)	1.412*** (0.018)	1.052*** (0.008)	1.072*** (0.011)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	30182	30181	30180	30182	30181	30180
Censored obs	26114	18633	24187	26114	18633	24187

Standard errors are in parentheses.

L1 indicates that the variable is lagged by one year, and In_ indicates that the variable is log-transformed.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Regarding development ODA, the sign of the fragility variable is negative, though insignificant, in model 1. As discussed earlier, the aid absorption capacity of fragile contexts is often perceived to be inferior to others. The sign is negative possibly due to the donor's concern on the adverse effect fragility may have on aid effectiveness and merit. In model 2, interestingly, this sign turned positive and significant. It shows one score rise in the degree of fragility increases the development ODA commitment by 0.7%. This contrast implies that donors take into account how fragile recipients are, and not if they are fragile when making development aid policies. Although the coefficient is small, it is an encouraging finding that fragility is motivating donors not only in their humanitarian aid allocation but also in that of development aid.

Peace ODA is by definition dedicated to conflict, peace and security concerns. The presence of such issues is highly associated with the state of fragility, thus it would be intuitive to see its positive impact on peace aid allocation. However, the label of fragility was again insignificant, while the degree of fragility was highly significant. For every one score added to the degree of fragility, 3% more of peace ODA was committed. This suggests that as in development aid, donors base their peace aid policy on the extent and not the presence of fragility. It is presumably because being fragile does not necessarily mean that there are conflict or security threats. The higher the degree of fragility, the higher the chance of violent conflict (recently) happening and the higher the extent of conflict if present.

Overall, the fragility variable had by far the largest effect on humanitarian aid in both models. When it comes to development and peace aid, the degree of fragility has a less but still significant impact, while the state of fragility does not.

Donor's self-interest

First, the export variable was positive and highly significant across the nexus and in both models without any exception. It reveals that in any pillar of the nexus, ODA is not free from the donor's economic interest. It is in line with other studies discussed earlier which found a positive link between overall aid and commercial interests. However, they did not look into if and how each pillar is affected by such interests. It is striking to see that the largest effect of the export variable was on humanitarian aid. Four humanitarian principles: humanity, neutrality, impartiality, and independence constitute the foundations for humanitarian action (OCHA, 2012). Ironically, the pillar which is supposedly the most independent of donor's commercial interest is here found to be the most dependent on it.

As for CO₂ emission per capita, the hypothesis was that development aid would be significantly affected by this variable as it includes environmental aid. However, the results suggest otherwise. The sign is positive across the nexus and in both models, but the correlation is strong only with humanitarian aid. There is a weak correlation with peace aid in model 2 as well. The implication can be that donors consider humanitarian crises and their side-effects as contributors to CO₂ emission, and attempt to mitigate this effect through humanitarian aid. Thiele et al. (2007) posit that because per capita CO₂ emission rises along with per capita income, donors' concern on environmental issues are often dominated by their poverty orientation which drives them to allocate more aid to poorer countries whose per capita CO₂ emission is usually smaller. This can be a fair reason why development ODA was not significantly correlated to CO₂, and it is partly confirmed below in the discussion on the GDP per capita and its square term.

Geographical distance is negatively correlated to all three categories of aid. The negative effect is particularly large and highly significant in the case of peace aid. It means the further away from the donor country the recipient country is, the less peace aid allocated. This speaks directly to donor's geopolitical interests. The instability in geographically proximate contexts is more likely to have spill-over effects on donor countries. Accordingly, the larger volume of peace aid to neighbouring countries can be interpreted as an instrument to maintain or build peace in strategically important areas. A similar logic can be applied for development aid as well. On the other side, the correlation between humanitarian aid and geographical distance appears weak. This suggests that humanitarian assistance is provided whether the recipient is geographically close to or far from the donor.

The effect of the colony dummy, another indicator of donor's geopolitical interest, was akin to that of distance. The presence of colonial tie is very influential in development aid. The volume of development ODA committed was about 280% higher when the recipient is a former colony compared to the case otherwise. Similarly, the peace aid was increased by more than 180% in the case of former colonies. The link established by colonialism still lives on today. Aid can be seen, from the perspective of former colonial powers, as a form of repayment or as an instrument to retain their influence. These findings are consistent with literature such as Neumayer (2003b). However, no significant correlation was identified between this variable and humanitarian aid. Combined with the similar finding on the geographical distance, it suggests the independence of humanitarian ODA from donor's geopolitical interest, in clear contrast to the commercial interest.

In sum, donor's self-interest is without doubt playing a substantial role in motivating donors. Different sorts of interests seem to drive donors in each pillar of the nexus. Economic interest and environmental considerations can alter the flow of humanitarian aid substantially. Indicators of geopolitical interests, namely the geographical distance and colonial ties stand as specially important factors in peace and development ODA respectively.

Recipient need

A pair of economic need indicators, GDP per capita and its quadratic term, provides evidence of the presence of middle-income bias in development and peace aid. In both models, GDP per capita has a positive sign but its square term has a negative sign, indicating that up to a tipping point, the higher the GDP per capita, the more development and peace aid, but then it turns to a negative correlation, that is the higher the GDP, the less aid. The implication is that donors take into consideration both recipient need and merit, thereby committing more aid to middle-income countries which are seen to be equipped better with aid absorptive capacity than extremely poor countries, but still poor 'enough' for aid to play a role. Regarding the argument of Thiele et al. on CO₂, although the relationship between recipient's income and aid is not linear, it is conceivable that concern on poverty is dominating that on environment. With respect to humanitarian aid, GDP per capita is negatively correlated to ODA, as the study of Fielding (2014) also suggests. It signifies that the poorer the country, the more humanitarian aid distributed, hence the prioritisation of the need of recipients. In model 2, the squared GDP per capita is positive and significant, pointing towards the existence of a non-linear relationship between humanitarian ODA and GDP, but somewhat the opposite of middle-income bias. It can be due to the occurrence of crisis in some (upper-) middle-income countries that received a lot of humanitarian aid while in general lower GDP coincides with the presence of crisis and thus a higher amount of humanitarian aid.

The population of the recipient country is positively correlated to all types of ODA. The effect is particularly strong in the development ODA. It is likely a response to the increasing development need which comes with population growth. On the whole, recipient need does substantially motivate donors in allocating ODA without exceptions across the nexus. It is an encouraging finding which underscores there is a strong altruistic element in aid policies.

Merit

The indicator of freedom had a positive sign and high significance on development and peace aid. When the recipient's freedom index score improves by one, the development and peace ODA increased by somewhere between 0.5 to 1%. The explanation is that donors reward higher standard of political rights and civil liberty by granting more aid. It is in accordance with the finding of Opršal et al. (2020) who also employed the freedom index as an indicator of merit in the aid allocation study. However, when looking at humanitarian aid, the sign changes to negative which is significant in model 1 and insignificant in model 2. The reverse relationship between freedom and aid in the humanitarian sector can be caused by the tendency for compromised freedom in crisis-affected areas where humanitarian ODA targets. By and large, it can be said that the aid effectiveness squarely motivates development and peace aid allocation, but humanitarian aid is rather independent of this effect.

Regression Results and Discussion – Individual Donor Countries

Fragility

The coefficients of the fragility variable from each DAC member state are compiled in table 3 below. It demonstrates how donors are reacting to fragility differently from one another. The only place where they performed in a uniformed manner was on the fourth column: the effect of the degree of fragility on humanitarian ODA. The coefficient was uniformly positive and statistically highly significant. Denmark, the Netherlands, Sweden, and the United Kingdom are putting particularly high importance on the degree of fragility. Per one level rise in the degree, more than 10% of humanitarian aid was added. Ireland, Luxembourg, Japan, Switzerland, and the United States were relatively less responsive to the degree of fragility with their coefficient lower than the DAC 23 average of 0.064. It ranged from the highest coefficient of 0.155 for the Netherlands and the lowest of 0.043 for Japan. In regard to the state of fragility and its impact on humanitarian ODA, the sign was positive with nearly all member states. One exception was Australia with a coefficient of -0.166, but it is statistically not significant. The results are significant at 1% level with Canada, Denmark, Korea and the United States, at 5% level with France, Germany, Ireland, Italy, Luxembourg, Sweden, and Switzerland, and at 10% level with Austria and Japan. These countries take into account not only the degree of fragility but also if they are labelled as fragile in forming their humanitarian aid policies. Table 4 divide DAC members into two groups based on the findings.

Table 3. Regression results – fragility variable in individual donors

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
DAC 23	0.447***	-0.042	-0.012	0.064***	0.007**	0.03***
Australia	-0.166	-0.09	0.173	0.08***	0.026**	0.076***
Austria	0.772*	-0.113	-0.714	0.074***	-0.011	0.01
Belgium	0.477	0.307**	-0.627**	0.078***	-0.019	-0.041**
Canada	0.665***	-0.092	-0.3	0.065***	0.011	0.008
Denmark	1.337***	-1.068***	0.011	0.116***	0.028	0.027
Finland	0.43	-0.019	-0.079	0.086***	-0.002	0.038*
France	0.875**	0.0	0.101	0.082***	0.009	0.037***
Germany	0.603**	-0.031	0.054	0.099***	0.008	0.039***
Greece		-0.032			-0.008	
Ireland	0.602**	-0.04	-0.369***	0.058***	-0.003	-0.016
Italy	0.786**	0.166	0.142	0.07***	0.028***	0.013
Japan	0.368*	0.137	0.285	0.043***	0.001	0.049***
Korea	1.259***	-0.103	-0.262	0.078***	-0.015	0.037
Luxembourg	0.381**	0.125	0.373	0.052***	0.024	-0.011
Netherlands	0.75	-0.348	-0.008	0.155***	0.055**	0.039**
New Zealand	0.409	0.242	1.495**	0.074***	-0.002	0.077**
Norway	0.393	-0.165	-0.123	0.072***	0.028*	0.041***
Portugal		-0.212	-0.515		-0.031	0.073***
Spain	0.351	0.161	0.09	0.062***	0.026**	0.024*
Sweden	0.588**	-0.305	0.152	0.108***	-0.011	0.033**
Switzerland	0.295**	0.048	-0.257	0.054***	-0.004	0.019
United Kingdom	0.486	-0.085	0.035	0.107***	-0.011	0.033***
United States	0.51***	-0.018	0.089	0.06***	0.028***	0.05***

Certain columns are empty due to an insufficient number of observations to produce estimates

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 4. Patterns of donor's response to fragility – Humanitarian ODA

Group	Fragility	Significance	Sign	Donors
1	State	Yes	+	Austria, Canada, Denmark, France, Germany, Italy, Japan, Korea, Luxembourg, Sweden, Switzerland, United States
	Degree	Yes	+	
2	State	No	+/-	Australia, Belgium, Finland, Netherlands, New Zealand, Norway, Spain, United Kingdom
	Degree	Yes	+	

Donors respond to the fragility in highly varied manners in the development aid allocation. In model 1, eight member states had a positive sign, and the rest had a negative one. However, only one each had significance: Belgium with a positive sign and Denmark with a negative sign. Belgium commits 30% more development aid to contexts in the state of fragility, while Denmark allocates 107% less ODA to them. For the rest of the DAC members, the label of fragility on recipients was not a significant motive for development aid allocation. In model 2, about half of donors had a positive correlation coefficient and the other half had it negative, but significant ones were all from the former. Australian, Italian, Dutch, Norwegian, Spanish and American development ODA were significantly correlated to the degree of fragility. In particular, Netherlands had a coefficient of 0.55, twice as much as the other five. Interestingly, Belgium and Denmark adjust the amount of ODA depending on the state of fragility, but they do not appear to consider the degree of fragility at the same time. In table 2, the degree of fragility was positive and significant, but here it is revealed that only six countries are significantly affected by it. The presence of the United States here, the largest donor of all, likely played a role. It has to be acknowledged that in general results in table 2 may be substantially affected by figures from one or a few largest donors. Table 5 classifies donors into four groups based on how they respond to fragility in the development ODA allocation.

Table 5. Patterns of donor's response to fragility – Development ODA

Group	Fragility	Significant	Sign	Donors
1	State	Yes	+	Belgium
	Degree	No	-	
2	State	Yes	-	Denmark
	Degree	No	+	
3	State	No	+/-	Australia, Italy, Netherlands, Norway, Spain, United States
	Degree	Yes	+	
4	State	No	+/-	Austria, Canada, Finland, France, Germany, Greece, Ireland, Japan, Korea, Luxembourg, New Zealand, Portugal, Sweden, Switzerland, United Kingdom
	Degree	No	+/-	

When it comes to peace aid in model 1, again the sign diverged among donors. About half indicates a positive correlation and the other half the negative. Three countries come with statistically significant estimations: Belgium, Ireland, and New Zealand. The first two have their peace ODA in the negative correlation with fragility. Belgium cuts it by 63% and Ireland by 37% when the recipient is labelled as a fragile context. The result on New Zealand

points to the opposite behaviour. When a recipient is labelled as fragile, its peace aid was scaled up by 150%. In model 2, only Belgium, consistent with model 1, had a negative coefficient with relatively high significance. Thirteen other member states were found to be motivated by the degree of fragility in their peace aid distribution. They gave extra ODA for recipients with a higher degree of fragility. They are Australia, Finland, France, Germany, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, United Kingdom and the United States. Table 6 presents how donors are grouped based these results.

Table 6. Patterns of donor's response to fragility – Peace ODA

Group	Fragility	Significant	Sign	Donors
1	State	Yes	+	New Zealand
	Degree	Yes	+	
2	State	Yes	-	Belgium
	Degree	Yes	-	
3	State	Yes	-	Ireland
	Degree	No	-	
4	State	No	+/-	Australia, Finland, France, Germany, Japan, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom, United States
	Degree	Yes	+	
5	State	No	+/-	Austria, Canada, Denmark, Italy, Korea, Luxembourg, Switzerland
	Degree	No	+/-	

Featured explanatory variables

Explanatory variables other than fragility also had highly heterogeneous impacts on aid allocation depending on the donor. In this section, some examples of such observations will be discussed. The complete regression table for each donor country can be found in the appendix.

First, with regard to humanitarian ODA and export variable, looking at donor-specific regressions reveals that in fact, the majority of member states keep their aid not significantly affected by the commercial interest. There are only four donors whose humanitarian aid was identified to be correlated to export with statistical significance. They are Canada, Ireland, Japan, and Spain. In model 2, it is indicated that the Netherlands allocated less humanitarian ODA to larger trade partners. However, it is likely due to the collinearity between export and population variables. If the population variable is dropped, this sign reverses and the coefficient becomes insignificant. In the case of development aid, about half of the donors are motivated by commercial interests. They are Australia, Canada, Finland, France, Germany, Ireland, Italy, Japan, Portugal, Spain, United Kingdom, and the United States. Lastly, regarding peace aid, only seven countries' ODA was significantly affected by the export variable. They are Australia, France, Ireland, Japan, Spain, Sweden, and United States. In exceptional cases, Luxembourg and Portugal allocated less aid to recipients who export more from them. Even when the population variable is excluded, the sign did not change. However, both countries have particularly small number of observations, so the accuracy of this result is questionable.

Second, the more distant from donors' capitals, the less development and peace aid is a prevailing rule. However, as for former colonial powers, this effect was dominated by the

influence of colonial ties. Belgian and Portuguese development and peace ODA had no significant link with the distance, but instead they were profoundly affected by the colony variable. A similar phenomenon was observed in the Spanish peace aid and British development aid. Against the dominant trend, the higher volume of Irish development and peace ODA was given to more distant countries. It is rare for bilateral donors, but more common for multilateral donors like the United Nations agencies which Neumayer (2003d) found to favour recipients further away from the centres of the Western world.

Third, with GDP, a few countries allocated aid differently from the great majority. Irish and British development policies as well as French peace policy appear to be more need-oriented than others. In their respective ODA category, the sign of GDP per capita was negative and its square was insignificant. It implies that their priority for addressing poverty dominates other concerns. New Zealand was the only country that is shown to have a middle-income bias in the humanitarian aid allocation.

Finally, on freedom, there was no country whose aid was affected in a drastically different manner. Certain donors are however found to be particularly in favour of recipients with a higher level of freedom. Germany and Luxembourg gave them more development and peace aid, Japan, Korea, Norway and the United States rewarded them with more development aid, and Ireland provided them with more peace aid.

Policy Implications

Discussion of the results above widely addressed the research questions, but it shall be now concisely answered as well. In a nutshell, the research produced firm evidence that donors are significantly and variously affected by the fragility of recipients. How these two factors interact is far from homogenous depending on the donor, pillar of the nexus, and the way fragility is indicated.

There is no unequivocal answer to how then ODA should be allocated to tackle fragility. However, the finding on how differentiated approaches DAC members are taking has important policy implications. For certain donors, fragility plays a role as their motive in one or two of the pillars of the nexus, while others react to fragility by tailoring their aid across all pillars of the nexus. For some, the impact of fragility is profound while for others its extent is much less. This is something none could know when simply looking at their international cooperation policies or listening to what their ministers are saying, as they would probably all agree that fragility is one of their priorities. On the surface, the international community appears to be in consensus on the significance of the fragility issue, but the way they understand and address it is not unanimous.

It is not to say this has to be unanimous. It is natural for donors to have their own interest, understanding of need, and view on merit. It also is a legitimate approach to count on their distinctive capacity and experience in tailoring ODA. However, this cannot come at the expense of coherence and complementarity. Till today, the lack of understanding on how each donor is motivated by fragility and funding across the nexus has been in part responsible for rendering the nexus financing inconsistent and fragmented. The findings of this research shall make the broader picture of the international cooperation scheme visible to each actor and serve as a steppingstone to level up the coordination across the nexus. The evidence that every donor is one way or another taking action to address fragility should provide DAC members and beyond a strong incentive to rethink how, while adopting differentiated

approaches, each can take part in this collective effort in a way exerting the synergistic effect of ODA.

The relevance of this research's findings is not limited to the fragility agenda. It has also demonstrated how aid allocation is an achingly intricate process. Donors are each motivated by a complex combination of factors, and they are in this sense inevitably distinct entities. Despite being so, to be familiar with others and act in collaboration can make a great difference when compared to being unfamiliar with others and act in isolation. It is only after aid actors decide to leave their own silos that international cooperation maximises its potential.

Conclusion

This research draws on the growing concern on the impact of fragility as a global challenge. It first built a conceptual framework to clarify the relevance and interrelatedness of key concepts. Then a broad range of literature was reviewed to identify what is known from previous studies and where the gap in knowledge lies. Based on this, a unique approach to analyse the aid allocation was developed. The innovative features of this approach are, first, fragility is added as the fourth category of donor's motive. Second, the impact of fragility is measured in two fashions: state and degree. Third, the flow of ODA across the Humanitarian-Development-Peace nexus was analysed. Various methods for operationalising this approach in a quantitative analysis were examined and the random effect Tobit model was selected. The results of the research provide compelling evidence that, on the one side, DAC members are without exception tailoring their ODA in reaction to fragility in recipient states. On the other side, the way they are motivated by fragility substantially varies dependent on how fragility is presented, and which pillar of the nexus is the aid is allocated to. This heterogeneity among donors is detected likewise in how their aid is susceptible to the other three categories of motive: self-interest, recipient need, and merit.

By pioneering the use of fragility variable as a donor's motive and the categorisation of ODA into three pillars of the nexus, this work sheds new light on the current scholarly debate on aid allocation. As its modest contribution, it reveals the existence of not only inter-donor variance but also inter-HDP variance in the international effort to leave no fragile context behind. This finding shall give rise to further effort from academia to deepen the understanding of financing across the nexus, including but not limited to ODA. It also contributes to the policy arena in facilitating the dialogue among actors and shaping consistent policies guided by robust evidence.

There is no need for the seismic shift in international cooperation scheme to deal with fragility. The instrument, system, resource and will are all there. But if it is to ensure no fragile context will be left behind, then it has to be done together and better. After all, however resolute one is to make a difference, a challenge of as global scale and as complex kind as fragility cannot be sufficiently addressed by an individual effort. Inasmuch as the impact of fragility transcends boundaries, the effort to address it has to be collective, consistent, and made in a way each plays a pivotal role in generating synergies. When the financing across the nexus is rather inconsistent as it is today, it will not give right incentives for the implementing partners to operate in a consistent way. But if donors start seeing themselves as members of the transnational team, better understanding what each other is endowed with, and allocating resource to facilitate teamwork, then ODA will be delivering

not only funding but also incentives to work together. This research is dedicated to such globally communal spirit.

While this research has produced some compelling evidence and filled the knowledge gap in the dynamic of international cooperation, fragility, and nexus, there are multiple limitations that have to be acknowledged. First, the CRS data used in this research have a substantial portion of aid flow registered as regional or unspecified. For the purpose of this research, only recipient-specific data are used, but this means the analysis could not cover the entirety of ODA allocated. Second, small donors such as Greece, Luxembourg, and Portugal had a limited number of observations compared to others. This might have affected the accuracy of estimation in respective donor-specific regressions. Third, in relevance to the previous point, due to the data availability issues, the time frame of the research was eleven years from 2009 to 2019. It could be expanded to twenty years, for example, to enlarge the sample. Fourth, as discussed in detail in the methodology chapter, the random effect Tobit model employed in this research suffer from certain technical constraints. Finally, while variables were selected with caution, it is probable that the endogeneity issue is still present and to some extent distorting the estimates.

The findings and constraints of this research together set the ground for subsequent studies to corroborate the evidence, expand the scope of analysis, and develop different approaches. For instance, whereas this study was conducted predominantly from donor's perspective, to see it from recipient's lens and investigate the inflow of ODA across the nexus will allow for fragile context-specific analysis. In addition, there are various sources of finance other than ODA, and there are many donors other than DAC members. Spotlight shall be shed to them for making a more complete picture visible. There is also space for exploring multidimensional nature of fragility in relevance to ODA. Each of economic, environmental, political, security, societal, and human dimensions may play a unique role as a donor's motive. An area of study highly pertinent to aid allocation is aid effectiveness. If, how, and which of humanitarian, development, peace aid is effective in addressing fragility is yet another aspect which remains unexplored but will be highly valuable to examine. Finally, qualitative research with in-depth analysis will reveal stories behind figures and refine the quality of knowledge. With much hope to be an initiative for such scholarly effort to follow, the present study concludes.

Notes

1. 37 OECD member states as of May 2021 are Austria, Australia, Belgium, Canada, Chile, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.
2. DAC member states as of May 2021 are Australia, Austria, Belgium, Canada, Czech Republic, Denmark, European Union, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, and the United States
3. DAC list of ODA recipients specifies which developing countries and territories which are eligible to receive ODA based on their income level. The list is revised every three years (OECD, 2021c).
4. DAC members included in this study are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States
5. Developing countries included as recipients in this study are Afghanistan, Angola, Albania, Argentina, Armenia, Antigua & Barbuda, Azerbaijan, Burundi, Benin, Burkina Faso, Bangladesh, Bosnia & Herzegovina, Belarus, Belize, Bolivia, Brazil, Barbados, Bhutan, Botswana, Central African Republic, Chile, China, Côte d'Ivoire, Republic of the Congo, Democratic Republic of the Congo, Colombia, Comoros, Cape Verde, Costa Rica, Cuba, Djibouti, Dominican Republic, Algeria, Ecuador, Egypt, Eritrea, Ethiopia, Fiji, Gabon, Georgia, Ghana, Guinea, Gambia, Guinea-Bissau, Equatorial Guinea, Grenada, Guatemala, Guyana, Honduras, Croatia, Haiti, Indonesia, India, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Cambodia, Laos, Lebanon, Liberia, Libya, Sri Lanka, Lesotho, Morocco, Moldova, Madagascar, Maldives, Mexico, North Macedonia, Mali, Myanmar, Mongolia, Mozambique, Mauritania, Mauritius, Malawi, Malaysia, Namibia, Niger, Nigeria, Nicaragua, Nepal, Oman, Pakistan, Panama, Peru, Philippines, Papua New Guinea, Paraguay, Rwanda, Saudi Arabia, Senegal, Solomon Islands, Sierra Leone, El Salvador, Somalia, São Tomé & Príncipe, Suriname, Eswatini, Seychelles, Syria, Chad, Togo, Thailand, Tajikistan, Turkmenistan, Timor-Leste, Trinidad & Tobago, Tunisia, Turkey, Tanzania, Uganda, Ukraine, Uruguay, Uzbekistan, Venezuela, Vietnam, Samoa, Yemen, South Africa, Zambia, Zimbabwe.
6. Humanitarian ODA is with the CRS codes 72010, 72040, 72050, 73010, or 74020, peace ODA with codes 15110, 15111, 15112, 15113, 15130, 15150, 15152, 15153, 15160, 15170, 15210, 15220, 15230, 15240, 15250, 15261, and development ODA covers all the rest.

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Appendices

Donor-Specific Regression Tables

Australia

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	-0.166 (0.324)	-0.09 (0.117)	0.173 (0.182)	0.08*** (0.025)	0.026** (0.011)	0.076*** (0.013)
L1.In_export	0.03 (0.114)	0.078* (0.043)	0.289*** (0.083)	0.078 (0.109)	0.084* (0.043)	0.295*** (0.072)
L1.In_CO2	0.13 (0.183)	0.078 (0.079)	-0.036 (0.134)	0.171 (0.153)	0.08 (0.077)	-0.032 (0.086)
In_distance	-3.878*** (0.929)	-4.531*** (0.419)	-7.453*** (0.377)	-3.422*** (0.769)	-4.5*** (0.408)	-3.369*** (0.432)
colony	-1.349 (2.553)	-1.37 (1.382)	-4.489* (2.351)	-1.293 (1.939)	-1.387 (1.333)	0.09 (1.121)
L1.In_GDP_pc	-4.568 (4.63)	6.667*** (2.013)	2.585 (3.341)	-4.837 (4.187)	5.609*** (2.028)	1.67 (2.355)
L1.(In_GDP_pc) ²	0.196 (0.269)	-0.441*** (0.118)	-0.206 (0.194)	0.262 (0.245)	-0.364*** (0.12)	-0.106 (0.139)
L1.In_population	0.582** (0.232)	0.323*** (0.091)	0.336*** (0.097)	0.393** (0.197)	0.289*** (0.09)	-0.067 (0.108)
L1.freedom	-0.005 (0.01)	0.004 (0.005)	-0.001 (0.007)	0.008 (0.01)	0.01** (0.005)	0.005 (0.006)
intercept	47.91** (22.636)	10.646 (9.564)	49.604*** (15.214)	36.327* (20.249)	11.73 (9.439)	12.886 (11.085)
sigma_u	2.286*** (0.352)	1.251*** (0.124)	2.322*** (0.25)	1.709*** (0.297)	1.205*** (0.12)	0.991*** (0.124)
sigma_e	1.344*** (0.084)	0.646*** (0.024)	0.777*** (0.042)	1.379*** (0.087)	0.646*** (0.024)	0.737*** (0.039)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1303	1303	1303	1303	1303	1303
Censored obs	1132	869	1079	1132	869	1079

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Austria

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.772*	-0.113	-0.714	0.074***	-0.011	0.01
	(0.396)	(0.183)	(0.449)	(0.021)	(0.014)	(0.027)
L1.In_export	0.095	0.031	-0.044	0.157	0.029	-0.003
	(0.204)	(0.09)	(0.183)	(0.183)	(0.09)	(0.186)
L1.In_CO2	0.45***	0.007	0.227	0.437***	0.001	0.208
	(0.165)	(0.11)	(0.162)	(0.136)	(0.11)	(0.162)
In_distance	-0.847**	-1.338***	-0.676	-0.657*	-1.371***	-0.647
	(0.415)	(0.309)	(0.419)	(0.357)	(0.312)	(0.426)
colony	0.25	-0.263	2.067	0.253	-0.34	1.853
	(1.524)	(1.474)	(1.617)	(1.27)	(1.477)	(1.635)
L1.In_GDP_pc	-2.824	-0.2	9.607*	-4.751	0.263	9.32*
	(3.738)	(2.756)	(5.176)	(3.34)	(2.827)	(5.294)
L1.(In_GDP_pc) ²	0.143	-0.001	-0.599*	0.274	-0.032	-0.568*
	(0.216)	(0.16)	(0.306)	(0.195)	(0.166)	(0.315)
L1.In_population	0.423*	0.649***	0.243	0.233	0.669***	0.203
	(0.247)	(0.151)	(0.236)	(0.213)	(0.154)	(0.242)
L1.freedom	-0.008	0.004	0.003	0.006	0.003	0.01
	(0.01)	(0.006)	(0.011)	(0.01)	(0.006)	(0.013)
intercept	8.494	0.764	-39.617*	9.265	0.052	-41.145*
	(15.588)	(12.018)	(21.677)	(13.322)	(12.062)	(21.814)
sigma_u	1.191***	1.684***	1.493***	0.86***	1.687***	1.523***
	(0.286)	(0.183)	(0.319)	(0.23)	(0.182)	(0.329)
sigma_e	1.278***	1.016***	1.441***	1.3***	1.016***	1.448***
	(0.145)	(0.041)	(0.179)	(0.147)	(0.041)	(0.181)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1319	1319	1319	1319	1319	1319
Censored obs	1262	933	1267	1262	933	1267

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Belgium

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.477 (0.317)	0.307** (0.153)	-0.627** (0.285)	0.078*** (0.019)	-0.019 (0.013)	-0.041** (0.017)
L1.In_export	0.231 (0.179)	-0.026 (0.098)	0.069 (0.157)	0.25 (0.162)	-0.015 (0.097)	0.013 (0.162)
L1.In_CO2	0.177 (0.135)	-0.093 (0.101)	0.074 (0.116)	0.174 (0.111)	-0.079 (0.1)	0.04 (0.121)
In_distance	-1.485*** (0.516)	0.344 (0.353)	-0.383 (0.38)	-1.249*** (0.434)	0.306 (0.35)	-0.54 (0.396)
colony	0.391 (1.028)	3.649*** (1.118)	3.601*** (0.985)	0.596 (0.821)	3.69*** (1.087)	3.663*** (1.053)
L1.In_GDP_pc	-10.681*** (3.46)	5.996** (2.892)	-1.543 (3.334)	-10.861*** (3.047)	6.948** (2.943)	-0.68 (3.477)
L1.(In_GDP_pc) ²	0.538*** (0.202)	-0.404** (0.169)	0.05 (0.195)	0.587*** (0.179)	-0.476*** (0.174)	-0.009 (0.204)
L1.In_population	0.352 (0.223)	0.647*** (0.14)	0.415** (0.199)	0.196 (0.19)	0.645*** (0.138)	0.54** (0.214)
L1.freedom	-0.017** (0.008)	0.014*** (0.005)	0.004 (0.007)	0.001 (0.009)	0.01* (0.006)	-0.001 (0.008)
intercept	52.072*** (14.982)	-35.517*** (12.601)	2.674 (14.316)	43.292*** (13.112)	-36.274*** (12.55)	3.266 (14.829)
sigma_u	1.491*** (0.23)	1.713*** (0.175)	1.388*** (0.223)	1.137*** (0.192)	1.658*** (0.169)	1.498*** (0.233)
sigma_e	1.215*** (0.082)	0.853*** (0.03)	0.957*** (0.06)	1.237*** (0.084)	0.858*** (0.03)	0.947*** (0.06)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	1176	854	1169	1176	854	1169

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Canada

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.665*** (0.256)	-0.092 (0.158)	-0.3 (0.193)	0.065*** (0.019)	0.011 (0.011)	0.008 (0.013)
L1.In_export	0.217** (0.105)	0.112* (0.065)	-0.014 (0.083)	0.222** (0.103)	0.115* (0.065)	-0.006 (0.083)
L1.In_CO2	0.084 (0.128)	0.081 (0.08)	0.044 (0.099)	0.106 (0.113)	0.079 (0.08)	0.043 (0.098)
In_distance colony	-1.276** (0.557)	-0.723** (0.324)	-1.596*** (0.426)	-1.04** (0.49)	-0.712** (0.323)	-1.571*** (0.422)
L1.In_GDP_pc	0.477 (3.305)	1.244 (2.097)	5.646** (2.74)	-2.058 (3.083)	1.02 (2.111)	5.46** (2.747)
L1.(In_GDP_pc) ²	-0.116 (0.195)	-0.147 (0.122)	-0.388** (0.161)	0.061 (0.184)	-0.127 (0.124)	-0.368** (0.162)
L1.In_population	0.421** (0.175)	0.566*** (0.1)	0.71*** (0.136)	0.3* (0.164)	0.555*** (0.101)	0.692*** (0.137)
L1.freedom	-0.013* (0.007)	0.017*** (0.005)	0.012* (0.006)	-0.003 (0.008)	0.02*** (0.005)	0.015** (0.007)
intercept	3.538 (14.787)	-4.128 (9.519)	-17.386 (12.238)	6.334 (13.378)	-4.779 (9.497)	-18.233 (12.129)
sigma_u	1.778*** (0.199)	1.247*** (0.104)	1.406*** (0.145)	1.503*** (0.187)	1.242*** (0.104)	1.38*** (0.145)
sigma_e	1.328*** (0.064)	1.101*** (0.035)	1.082*** (0.045)	1.35*** (0.066)	1.102*** (0.035)	1.087*** (0.046)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1325	1325	1325	1325	1325	1325
Censored obs	1047	708	969	1047	708	969

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Denmark

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	1.337*** (0.426)	-1.068*** (0.305)	0.011 (0.291)	0.116*** (0.024)	0.028 (0.022)	0.027 (0.019)
L1.In_export	0.166 (0.201)	0.107 (0.149)	0.163 (0.143)	0.161 (0.194)	0.076 (0.151)	0.165 (0.142)
L1.In_CO2	0.151 (0.158)	0.364** (0.159)	0.182 (0.136)	0.247* (0.139)	0.347** (0.16)	0.186 (0.134)
In_distance colony	-1.302** (0.546)	-0.555 (0.47)	-1.714*** (0.433)	-1.061** (0.482)	-0.551 (0.478)	-1.662*** (0.43)
L1.In_GDP_pc	-2.257 (3.975)	9.988** (4.465)	8.524** (3.986)	-3.81 (3.651)	8.448* (4.563)	7.815* (4.001)
L1.(In_GDP_pc) ²	0.091 (0.235)	-0.679** (.265)	-0.594** (0.238)	0.218 (0.218)	-0.553** (0.272)	-0.538** (0.24)
L1.In_population	0.608** (0.252)	0.86*** (0.205)	0.606*** (0.192)	0.419* (0.224)	0.878*** (0.208)	0.575*** (0.191)
L1.freedom	-0.016 (0.01)	0.011 (0.009)	0.005 (0.008)	0.002 (0.011)	0.023** (0.01)	0.01 (0.009)
intercept	8.057 (16.732)	-47.838** (19.239)	-28.885* (16.524)	3.002 (15.022)	-47.085** (19.319)	-29.423* (16.46)
sigma_u	1.671*** (0.281)	2.171*** (0.244)	1.73*** (0.216)	1.305*** (0.226)	2.206*** (0.25)	1.709*** (0.213)
sigma_e	1.565*** (0.126)	1.577*** (0.074)	1.527*** (0.082)	1.591*** (0.128)	1.597*** (0.075)	1.523*** (0.082)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1325	1324	1323	1325	1324	1323
Censored obs	1216	1034	1096	1216	1034	1096

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Finland

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.43 (0.335)	-0.019 (0.215)	-0.079 (0.273)	0.086*** (0.017)	-0.002 (0.017)	0.038* (0.021)
L1.In_export	0.089 (0.078)	0.101* (0.059)	0.062 (0.084)	0.101 (0.073)	0.1* (0.058)	0.067 (0.082)
L1.In_CO2	0.032 (0.118)	0.171 (0.12)	0.1 (0.141)	0.061 (0.09)	0.17 (0.12)	0.093 (0.139)
In_distance colony	-1.157*** (0.422)	0.343 (0.401)	-1.063** (0.445)	-1.001*** (0.331)	0.336 (0.403)	-0.993** (0.444)
L1.In_GDP_pc	-3.852 (2.971)	2.525 (3.123)	12.678*** (4.613)	-4.977** (2.444)	2.59 (3.177)	11.438** (4.611)
L1.(In_GDP_pc) ²	0.174 (0.175)	-0.211 (0.184)	-0.805*** (0.276)	0.272* (0.145)	-0.215 (0.189)	-0.714*** (0.277)
L1.In_population	0.462*** (0.159)	0.601*** (0.139)	0.258 (0.166)	0.335*** (0.129)	0.604*** (0.14)	0.222 (0.165)
L1.freedom	-0.013 (0.008)	0.009 (0.008)	0.006 (0.009)	0.004 (0.008)	0.008 (0.008)	0.014 (0.01)
intercept	18.968 (12.663)	-21.874 (13.622)	-47.424** (19.058)	14.109 (10.138)	-21.892 (13.62)	-47.296** (18.928)
sigma_u	1.251*** (0.214)	1.684*** (0.182)	1.631*** (0.249)	0.824*** (0.16)	1.684*** (0.182)	1.612*** (0.244)
sigma_e	1.121*** (0.085)	1.08*** (0.053)	1.152*** (0.09)	1.14*** (0.087)	1.08*** (0.053)	1.145*** (0.09)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1303	1303	1303	1303	1303	1303
Censored obs	1187	1040	1190	1187	1040	1190

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

France

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.875** (0.393)	0 (0.135)	0.101 (0.228)	0.082*** (0.022)	0.009 (0.01)	0.037*** (0.014)
L1.In_export	-0.111 (0.218)	0.259*** (0.078)	0.38** (0.154)	-0.047 (0.202)	0.265*** (0.078)	0.403*** (0.153)
L1.In_CO2	-0.005 (0.136)	0.03 (0.073)	-0.007 (0.102)	0.032 (0.115)	0.03 (0.073)	-0.003 (0.1)
In_distance	-0.418 (0.471)	-0.319 (0.229)	-0.744** (0.322)	-0.166 (0.415)	-0.295 (0.229)	-0.614* (0.318)
colony	1.049 (0.68)	2.477*** (0.337)	2.04*** (0.495)	0.954 (0.588)	2.47*** (0.335)	2.042*** (0.485)
L1.In_GDP_pc	-5.892 (3.662)	2.184 (1.826)	-4.28 (2.789)	-6.919** (3.24)	1.968 (1.833)	-4.834* (2.79)
L1.(In_GDP_pc) ²	0.359* (0.216)	-0.136 (0.106)	0.209 (0.164)	0.444** (0.193)	-0.119 (0.107)	0.259 (0.165)
L1.In_population	0.732*** (0.281)	0.681*** (0.101)	0.171 (0.177)	0.503** (0.246)	0.667*** (0.102)	0.115 (0.175)
L1.freedom	-0.013 (0.009)	0.005 (0.004)	-0.001 (0.006)	0.005 (0.01)	0.007 (0.005)	0.006 (0.006)
intercept	13.951 (15.625)	-20.528** (8.168)	15.125 (12.022)	9.488 (13.595)	-20.839** (8.116)	12.14 (11.863)
sigma_u	1.502*** (0.269)	1.213*** (0.1)	1.291*** (0.175)	1.137*** (0.229)	1.203*** (0.1)	1.248*** (0.171)
sigma_e	1.425*** (0.129)	1.07*** (0.025)	1.199*** (0.055)	1.479*** (0.135)	1.07*** (0.026)	1.2*** (0.055)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	1240	344	1033	1240	344	1033

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Germany

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.603** (0.27)	-0.031 (0.103)	0.054 (0.131)	0.099*** (0.019)	0.008 (0.008)	0.039*** (0.01)
L1.In_export	-0.268 (0.185)	0.28*** (0.067)	0.025 (0.09)	-0.138 (0.177)	0.285*** (0.067)	0.059 (0.09)
L1.In_CO2	0.107 (0.143)	0.057 (0.063)	0.045 (0.079)	0.166 (0.119)	0.057 (0.063)	0.053 (0.078)
In_distance	-1.684*** (0.449)	-0.625*** (0.185)	-0.772*** (0.228)	-1.337*** (0.389)	-0.603*** (0.187)	-0.651*** (0.224)
colony	-1.453 (1.388)	0.475 (0.547)	0.168 (0.671)	-1.058 (1.141)	0.486 (0.551)	0.212 (0.654)
L1.In_GDP_pc	-2.925 (3.576)	3.293** (1.52)	-0.091 (1.996)	-5.341* (3.198)	2.931* (1.56)	-1.468 (1.992)
L1.(In_GDP_pc) ²	0.102 (0.212)	-0.235*** (0.088)	-0.047 (0.116)	0.281 (0.191)	-0.209** (0.092)	0.053 (0.117)
L1.In_population	1.262*** (0.252)	0.727*** (0.092)	0.78*** (0.125)	0.938*** (0.233)	0.714*** (0.093)	0.69*** (0.124)
L1.freedom	-0.016** (0.008)	0.012*** (0.003)	0.014*** (0.004)	0.002 (0.008)	0.013*** (0.004)	0.02*** (0.005)
intercept	15.115 (15.311)	-20.527*** (6.757)	-2.503 (8.761)	13.563 (13.476)	-20.183*** (6.784)	-1.921 (8.599)
sigma_u	1.929*** (0.215)	1.083*** (0.081)	1.268*** (0.112)	1.539*** (0.186)	1.09*** (0.082)	1.234*** (0.11)
sigma_e	1.516*** (0.067)	0.795*** (0.019)	0.946*** (0.027)	1.525*** (0.067)	0.794*** (0.018)	0.938*** (0.027)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	999	289	612	999	289	612

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Greece

	Model 1 (State of Fragility)		Model 2 (Degree of Fragility)	
	Humanitarian	Development Peace	Humanitarian	Development Peace
L1.Fragility	-0.032		-0.008	
	(0.396)		(0.023)	
L1.In_export	-0.156		-0.158	
	(0.105)		(0.105)	
L1.In_CO2	0.199		0.19	
	(0.168)		(0.169)	
In_distance	-3.911***		-3.924***	
	(1.014)		(0.977)	
colony	-0.511		-0.452	
	(1.751)		(1.775)	
L1.In_GDP_pc	-0.983		-0.97	
	(5.202)		(5.138)	
L1.(In_GDP_pc) ²	-0.002		-0.006	
	(0.304)		(0.3)	
L1.In_population	0.61**		0.623**	
	(0.268)		(0.27)	
L1.freedom	-0.013		-0.015	
	(0.015)		(0.016)	
intercept	30.895		31.733	
	(24.928)		(24.717)	
sigma_u	1.333***		1.356***	
	(0.359)		(0.361)	
sigma_e	0.48***		0.478***	
	(0.054)		(0.054)	
Year Dummy	Yes		Yes	
Observations	1258		1258	
Censored obs	1208		1208	

Standard errors are in parentheses

Certain columns are empty due to an insufficient number of observations to produce estimates

**** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$*

Ireland

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.602** (0.243)	-0.04 (0.107)	-0.369*** (0.13)	0.058*** (0.016)	-0.003 (0.01)	-0.016 (0.01)
L1.In_export	0.128 (0.088)	0.106** (0.044)	0.178*** (0.059)	0.168** (0.085)	0.052 (0.039)	0.098 (0.062)
L1.In_CO2	0.001 (0.103)	-0.107* (0.057)	0.121 (0.085)	0.042 (0.087)	-0.029 (0.08)	0.096* (0.054)
In_distance colony	-0.56 (0.422)	2.03*** (0.347)	2.091*** (0.639)	-0.308 (0.367)	1.032* (0.53)	0.51 (0.493)
L1.In_GDP_pc	-6.199** (2.445)	-4.705*** (1.718)	6.228** (2.51)	-7.241*** (2.208)	-0.689 (1.996)	4.999** (2.047)
L1.(In_GDP_pc) ²	0.315** (0.144)	0.142 (0.106)	-0.483*** (0.161)	0.395*** (0.131)	-0.015 (0.122)	-0.369*** (0.127)
L1.In_population	0.23 (0.153)	1.327*** (0.108)	1.064*** (0.101)	0.085 (0.134)	0.408*** (0.151)	0.927*** (0.141)
L1.freedom	-0.008 (0.006)	0.005 (0.005)	0.02*** (0.005)	0.003 (0.007)	0.002 (0.005)	0.027*** (0.006)
intercept	26.594** (10.571)	-15.141** (6.94)	-61.275*** (12.448)	24.06*** (9.219)	-10.962 (11.2)	-40.808*** (10.866)
sigma_u	1.191*** (0.197)	2.85*** (0.284)	2.726*** (0.3)	0.925*** (0.161)	1.808*** (0.196)	2.868*** (0.286)
sigma_e	0.912*** (0.065)	0.438*** (0.022)	0.438*** (0.028)	0.936*** (0.068)	0.385*** (0.02)	0.433*** (0.027)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1307	1307	1307	1307	1307	1307
Censored obs	1170	1068	1147	1170	1068	1147

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Italy

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.786** (0.358)	0.166 (0.149)	0.142 (0.305)	0.07*** (0.019)	0.028*** (0.01)	0.013 (0.018)
L1.In_export	0.089 (0.197)	0.413*** (0.088)	0.038 (0.203)	0.163 (0.19)	0.43*** (0.088)	0.056 (0.204)
L1.In_CO2	0.019 (0.136)	0.058 (0.08)	0.236 (0.159)	0.072 (0.12)	0.059 (0.079)	0.24 (0.158)
In_distance	-0.609 (0.375)	-0.031 (0.206)	-1.108*** (0.41)	-0.396 (0.341)	0.032 (0.204)	-1.066*** (0.41)
colony	2.658 (1.779)	0.975 (1.367)	2.717 (1.9)	2.478 (1.529)	0.912 (1.346)	2.636 (1.875)
L1.In_GDP_pc	-0.354 (3.439)	1.161 (1.992)	3.551 (3.898)	-2.448 (3.171)	0.267 (1.993)	3.058 (3.938)
L1.(In_GDP_pc) ²	-0.005 (0.203)	-0.136 (0.116)	-0.249 (0.231)	0.137 (0.188)	-0.072 (0.117)	-0.217 (0.235)
L1.In_population	0.526** (0.238)	0.128 (0.108)	0.495** (0.251)	0.321 (0.22)	0.084 (0.108)	0.457* (0.253)
L1.freedom	-0.004 (0.009)	0.007 (0.005)	-0.002 (0.008)	0.009 (0.009)	0.012** (0.005)	-0.001 (0.009)
intercept	-4.912 (14.781)	-9.417 (8.671)	-14.247 (16.531)	-3.392 (13.354)	-9.125 (8.574)	-13.597 (16.423)
sigma_u	1.576*** (0.232)	1.275*** (0.111)	1.746*** (0.291)	1.325*** (0.205)	1.255*** (0.11)	1.717*** (0.29)
sigma_e	1.429*** (0.11)	0.99*** (0.033)	1.114*** (0.086)	1.435*** (0.111)	0.987*** (0.033)	1.116*** (0.086)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	1211	777	1214	1211	777	1214

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Japan

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.368*	0.137	0.285	0.043***	0.001	0.049***
	(0.211)	(0.125)	(0.19)	(0.015)	(0.009)	(0.014)
L1.In_export	0.152*	0.22***	0.171**	0.174**	0.224***	0.195**
	(0.088)	(0.052)	(0.085)	(0.085)	(0.052)	(0.083)
L1.In_CO2	0.132	0.003	0.164*	0.146*	0.005	0.169**
	(0.092)	(0.06)	(0.089)	(0.086)	(0.06)	(0.084)
In_distance	-0.495	-1.135***	-1.418***	-0.504	-1.123***	-1.479***
	(0.363)	(0.24)	(0.339)	(0.337)	(0.239)	(0.321)
colony						
L1.In_GDP_pc	-0.728	10.205***	0.253	-2.015	10.17***	-0.644
	(2.453)	(1.61)	(2.366)	(2.355)	(1.641)	(2.295)
L1.(In_GDP_pc) ²	-0.007	-0.654***	-0.064	0.083	-0.654***	0.006
	(0.143)	(0.093)	(0.138)	(0.138)	(0.096)	(0.135)
L1.In_population	0.279**	0.376***	0.13	0.211*	0.372***	0.043
	(0.117)	(0.073)	(0.116)	(0.113)	(0.073)	(0.113)
L1.freedom	-0.005	0.017***	-0.006	0.003	0.016***	0.002
	(0.006)	(0.004)	(0.006)	(0.007)	(0.004)	(0.006)
intercept	2.406	-36.691***	8.686	3.65	-36.48***	8.371
	(11.813)	(7.758)	(11.309)	(11.117)	(7.762)	(10.816)
sigma_u	1.355***	0.959***	1.182***	1.227***	0.958***	1.087***
	(0.13)	(0.073)	(0.127)	(0.126)	(0.073)	(0.118)
sigma_e	1.32***	1.022***	1.11***	1.332***	1.022***	1.118***
	(0.051)	(0.023)	(0.053)	(0.052)	(0.023)	(0.053)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	902	184	1031	902	184	1031

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Korea

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	1.259*** (0.469)	-0.103 (0.206)	-0.262 (0.44)	0.078*** (0.022)	-0.015 (0.017)	0.037 (0.028)
L1.In_export	0.041 (0.137)	0.017 (0.087)	0.229 (0.172)	0.091 (0.124)	0.017 (0.087)	0.27 (0.172)
L1.In_CO2	0.069 (0.121)	-0.099 (0.132)	0.078 (0.161)	0.11 (0.107)	-0.103 (0.133)	0.082 (0.161)
In_distance colony	-0.471 (0.38)	-1.358*** (0.437)	-1.014** (0.477)	-0.549 (0.339)	-1.358*** (0.44)	-1.107** (0.485)
L1.In_GDP_pc	0.684 (3.557)	15.182*** (3.38)	14.419*** (5.466)	-1.641 (3.284)	15.811*** (3.485)	13.442** (5.512)
L1.(In_GDP_pc) ²	-0.032 (0.206)	-0.934*** (0.197)	-0.897*** (0.32)	0.115 (0.192)	-0.978*** (0.205)	-0.82** (0.323)
L1.In_population	0.485** (0.196)	0.842*** (0.166)	0.267 (0.232)	0.291* (0.176)	0.866*** (0.169)	0.176 (0.237)
L1.freedom	-0.006 (0.009)	0.019*** (0.007)	-0.008 (0.011)	0.008 (0.01)	0.018** (0.007)	0.002 (0.012)
intercept	-12.794 (16.516)	-64.154*** (15.801)	-61.696** (24.731)	-7.538 (14.825)	-65.391*** (15.959)	-61.115** (24.85)
sigma_u	1.209*** (0.23)	2.112*** (0.189)	1.751*** (0.267)	0.94*** (0.22)	2.128*** (0.192)	1.766*** (0.269)
sigma_e	1.547*** (0.156)	1.293*** (0.041)	2.182*** (0.159)	1.597*** (0.163)	1.293*** (0.041)	2.178*** (0.158)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	1251	750	1191	1251	750	1191

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Luxembourg

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.381** (0.167)	0.125 (0.156)	0.373 (0.231)	0.052*** (0.013)	0.024 (0.016)	-0.011 (0.022)
L1.In_export	0.014 (0.037)	0.026 (0.033)	-0.147** (0.065)	0.012 (0.038)	0.02 (0.033)	-0.122* (0.071)
L1.In_CO2	0 (0.073)	0.155 (0.104)	0.255 (0.226)	0.01 (0.065)	0.094 (0.109)	0.3 (0.229)
In_distance colony	-0.295 (0.264)	0.174 (0.434)	0.4 (0.816)	-0.232 (0.246)	0.175 (0.391)	0.316 (0.9)
L1.In_GDP_pc	-3.431* (1.796)	4.515** (2.234)	9.976 (7.232)	-4.415** (1.769)	3.094 (2.746)	13.431 (9.683)
L1.(In_GDP_pc) ²	0.178* (0.106)	-0.275** (0.133)	-0.656 (0.429)	0.254** (0.105)	-0.211 (0.174)	-0.867 (0.576)
L1.In_population	0.279** (0.109)	0.937*** (0.071)	0.608*** (0.201)	0.205** (0.096)	1.161*** (0.089)	0.549** (0.245)
L1.freedom	-0.004 (0.004)	0.017*** (0.005)	0.025*** (0.009)	0.008 (0.006)	0.022*** (0.007)	0.019** (0.01)
intercept	12.413* (7.448)	-40.728*** (9.671)	-56.862* (31.759)	11.045 (6.943)	-38.425*** (11.043)	-68.314* (37.931)
sigma_u	0.771*** (0.147)	3.969*** (0.376)	3.662*** (0.46)	0.613*** (0.114)	3.613*** (0.352)	3.671*** (0.431)
sigma_e	0.505*** (0.046)	0.558*** (0.031)	0.47*** (0.06)	0.52*** (0.048)	0.567*** (0.032)	0.492*** (0.063)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1258	1258	1258	1258	1258	1258
Censored obs	1176	1052	1215	1176	1052	1215

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Netherlands

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.75 (0.577)	-0.348 (0.377)	-0.008 (0.274)	0.155*** (0.03)	0.055** (0.026)	0.039** (0.017)
L1.In_export	-0.41 (0.259)	0.238 (0.207)	0.119 (0.166)	-0.374* (0.222)	0.213 (0.207)	0.114 (0.163)
L1.In_CO2	-0.072 (0.191)	0.368* (0.204)	0.073 (0.134)	-0.025 (0.143)	0.362* (0.203)	0.089 (0.129)
In_distance	-2.046*** (0.74)	-1.856** (0.73)	-1.506*** (0.452)	-1.728*** (0.583)	-1.756** (0.732)	-1.387*** (0.44)
colony	-9.508 (246.744)	6.951*** (1.884)	2.043 (1.303)	-8.327 (372.311)	6.932*** (1.879)	2.023 (1.244)
L1.In_GDP_pc	-6.718 (4.975)	5.41 (5.445)	2.092 (3.414)	-8.727** (4.043)	3.622 (5.54)	0.449 (3.386)
L1.(In_GDP_pc) ²	0.349 (0.295)	-0.474 (0.325)	-0.178 (0.2)	0.534** (0.242)	-0.335 (0.332)	-0.06 (0.2)
L1.In_population	1.145*** (0.339)	0.614** (0.266)	0.754*** (0.201)	0.835*** (0.264)	0.584** (0.266)	0.692*** (0.195)
L1.freedom	-0.019 (0.013)	0.005 (0.011)	0.002 (0.008)	0.012 (0.013)	0.017 (0.013)	0.009 (0.008)
intercept	34.998 (21.28)	-11.564 (22.941)	-8.035 (14.919)	26.126 (16.941)	-11.699 (23.122)	-6.202 (14.501)
sigma_u	2.142*** (0.368)	2.798*** (0.344)	1.801*** (0.22)	1.349*** (0.262)	2.78*** (0.342)	1.727*** (0.213)
sigma_e	1.945*** (0.166)	1.751*** (0.09)	1.349*** (0.068)	1.996*** (0.171)	1.754*** (0.09)	1.345*** (0.068)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	1225	1078	1076	1225	1078	1076

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

New Zealand

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.409 (0.437)	0.242 (0.209)	1.495** (0.624)	0.074*** (0.022)	-0.002 (0.015)	0.077** (0.031)
L1.In_export	0.093 (0.12)	-0.03 (0.074)	-0.249 (0.152)	0.088 (0.119)	-0.025 (0.074)	-0.206 (0.161)
L1.In_CO2	0.11 (0.125)	-0.007 (0.094)	-0.316* (0.182)	0.143 (0.114)	-0.002 (0.095)	-0.285 (0.195)
In_distance	-2.394*** (0.662)	-4.926*** (0.581)	-6.039*** (1.323)	-2.677*** (0.668)	-4.927*** (0.585)	-6.125*** (1.388)
colony	1.222 (1.144)	-0.497 (1.063)	0.421 (1.382)	1.494 (0.944)	-0.632 (1.075)	0.135 (1.431)
L1.In_GDP_pc	8.357* (4.889)	10.286*** (3.231)	11.541* (6.985)	5.5 (4.54)	10.289*** (3.372)	13.592 (8.344)
L1.(In_GDP_pc) ²	-0.495* (0.284)	-0.627*** (0.188)	-0.667 (0.413)	-0.299 (0.263)	-0.633*** (0.199)	-0.79 (0.496)
L1.In_population	0.274* (0.16)	0.39*** (0.124)	0.751*** (0.291)	0.263* (0.159)	0.378*** (0.125)	0.619** (0.293)
L1.freedom	-0.017* (0.009)	0.008 (0.007)	-0.015 (0.012)	-0.006 (0.009)	0.007 (0.007)	-0.012 (0.013)
intercept	-20.839 (21.394)	-3.447 (14.316)	-4.978 (29.739)	-14.703 (19.852)	-2.518 (14.473)	-17.421 (34.873)
sigma_u	0.715*** (0.237)	0.845*** (0.138)	0.78*** (0.277)	0.458* (0.245)	0.86*** (0.14)	0.874*** (0.302)
sigma_e	1.476*** (0.19)	0.837*** (0.053)	1.339*** (0.163)	1.479*** (0.19)	0.837*** (0.053)	1.328*** (0.162)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1275	1275	1275	1275	1275	1275
Censored obs	1229	1121	1299	1229	1121	1299

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Norway

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.393 (0.264)	-0.165 (0.165)	-0.123 (0.123)	0.072*** (0.02)	0.028* (0.014)	0.041*** (0.01)
L1.In_export	0.089 (0.076)	-0.056 (0.046)	-0.055 (0.036)	0.084 (0.074)	-0.05 (0.046)	-0.043 (0.036)
L1.In_CO2	0.052 (0.148)	-0.032 (0.106)	-0.149* (0.082)	0.088 (0.127)	-0.028 (0.105)	-0.127 (0.078)
In_distance colony	-1.44** (0.565)	-0.43 (0.365)	-0.723*** (0.278)	-1.103** (0.477)	-0.357 (0.361)	-0.596** (0.264)
L1.In_GDP_pc	-5.005 (3.384)	4.852* (2.674)	4.192** (1.974)	-7.49** (3.149)	3.535 (2.717)	2.555 (1.941)
L1.(In_GDP_pc) ²	0.222 (0.199)	-0.335** (0.157)	-0.277** (0.116)	0.408** (0.187)	-0.24 (0.161)	-0.158 (0.114)
L1.In_population	0.811*** (0.208)	0.943*** (0.125)	0.66*** (0.1)	0.645*** (0.177)	0.9*** (0.125)	0.58*** (0.095)
L1.freedom	-0.026*** (0.008)	0.012** (0.006)	0.003 (0.004)	-0.009 (0.009)	0.018*** (0.007)	0.011** (0.005)
intercept	22.502 (14.984)	-28.099** (11.825)	-19.292** (8.701)	23.412* (13.392)	-26.496** (11.704)	-17.902** (8.39)
sigma_u	1.996*** (0.265)	1.719*** (0.157)	1.3*** (0.12)	1.595*** (0.236)	1.692*** (0.154)	1.219*** (0.112)
sigma_e	1.198*** (0.066)	1.097*** (0.037)	0.791*** (0.028)	1.226*** (0.068)	1.099*** (0.037)	0.789*** (0.028)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1304	1304	1304	1304	1304	1304
Censored obs	1085	763	817	1085	763	817

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Portugal

	Model 1 (State of Fragility)		Model 2 (Degree of Fragility)			
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	-0.212	-0.515		-0.031	0.073***	
	(0.281)	(0.447)		(0.028)	(0.026)	
L1.In_export	0.776***	-0.165*		0.797***	-0.161*	
	(0.217)	(0.098)		(0.219)	(0.094)	
L1.In_CO2	-0.693**	-0.443		-0.729**	-0.259	
	(0.332)	(0.275)		(0.333)	(0.196)	
In_distance	-0.665	-1.062		-0.623	-0.815	
	(0.912)	(0.69)		(0.848)	(0.741)	
colony	5.857***	7.131***		5.871***	5.219***	
	(2.202)	(1.375)		(2.023)	(1.393)	
L1.In_GDP_pc	-4.381	4.33		-2.977	-3.06	
	(5.539)	(6.378)		(5.182)	(4.891)	
L1.(In_GDP_pc) ²	0.223	-0.269		0.127	0.207	
	(0.322)	(0.375)		(0.302)	(0.289)	
L1.In_population	0.181	0.135		0.183	-0.028	
	(0.353)	(0.257)		(0.328)	(0.203)	
L1.freedom	0.006	-0.041**		-0.003	-0.003	
	(0.014)	(0.016)		(0.017)	(0.019)	
intercept	5.449	-10.3		2.61	11.475	
	(24.214)	(27.625)		(22.587)	(22.321)	
sigma_u	1.534***	2.22***		1.538***	1.406***	
	(0.551)	(0.331)		(0.494)	(0.457)	
sigma_e	0.646***	0.393***		0.645***	0.398***	
	(0.05)	(0.048)		(0.05)	(0.051)	
Year Dummy	Yes	Yes		Yes	Yes	
Observations	1294	1294		1294	1294	
Censored obs	1197	1253		1197	1253	

Standard errors are in parentheses

Certain columns are empty due to an insufficient number of observations to produce estimates

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Spain

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.351 (0.312)	0.161 (0.164)	0.09 (0.19)	0.062*** (0.017)	0.026** (0.011)	0.024* (0.013)
L1.In_export	0.285* (0.156)	0.431*** (0.092)	0.212* (0.109)	0.326** (0.147)	0.455*** (0.093)	0.236** (0.109)
L1.In_CO2	0.044 (0.115)	0.072 (0.083)	0.114 (0.106)	0.052 (0.1)	0.074 (0.082)	0.113 (0.104)
In_distance	-0.547 (0.423)	-0.964*** (0.291)	-0.401 (0.362)	-0.463 (0.376)	-0.885*** (0.286)	-0.329 (0.355)
colony	2.368*** (0.61)	3.605*** (0.442)	3.405*** (0.561)	2.231*** (0.532)	3.606*** (0.433)	3.374*** (0.547)
L1.In_GDP_pc	-2.373 (3.007)	-0.85 (2.044)	5.264** (2.663)	-3.779 (2.717)	-1.507 (2.03)	4.296 (2.655)
L1.(In_GDP_pc) ²	0.06 (0.177)	-0.027 (0.119)	-0.362** (0.158)	0.168 (0.161)	0.021 (0.119)	-0.296* (0.158)
L1.In_population	0.246 (0.18)	0.11 (0.109)	0.139 (0.14)	0.131 (0.161)	0.065 (0.108)	0.098 (0.138)
L1.freedom	-0.003 (0.008)	-0.002 (0.005)	0.009 (0.006)	0.012 (0.009)	0.003 (0.005)	0.013** (0.007)
intercept	9.885 (12.888)	8.623 (9.155)	-22.653* (11.623)	8.657 (11.456)	8.015 (9.019)	-21.812* (11.379)
sigma_u	1.339*** (0.185)	1.258*** (0.116)	1.446*** (0.176)	1.094*** (0.158)	1.222*** (0.115)	1.398*** (0.172)
sigma_e	1.266*** (0.086)	0.979*** (0.033)	0.784*** (0.039)	1.291*** (0.088)	0.982*** (0.033)	0.783*** (0.039)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	1177	805	1077	1177	805	1077

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Sweden

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.588** (0.254)	-0.305 (0.205)	0.152 (0.173)	0.108*** (0.016)	-0.011 (0.017)	0.033** (0.014)
L1.In_export	0.106 (0.093)	-0.069 (0.097)	0.169** (0.079)	0.081 (0.087)	-0.07 (0.097)	0.166** (0.079)
L1.In_CO2	0.014 (0.117)	0.126 (0.139)	0.008 (0.117)	0.04 (0.089)	0.115 (0.14)	0.03 (0.114)
In_distance colony	-0.967** (0.409)	-1.205*** (0.447)	-1.135*** (0.366)	-0.662** (0.31)	-1.238*** (0.451)	-1.04*** (0.358)
L1.In_GDP_pc	0.904 (2.979)	6.662* (3.432)	3.977 (2.757)	-2.706 (2.385)	6.998** (3.557)	2.77 (2.765)
L1.(In_GDP_pc) ²	-0.117 (0.177)	-0.451** (0.202)	-0.283* (0.161)	0.144 (0.142)	-0.471** (0.211)	-0.197 (0.163)
L1.In_population	0.577*** (0.157)	0.852*** (0.182)	0.403*** (0.143)	0.424*** (0.128)	0.872*** (0.185)	0.353** (0.141)
L1.freedom	-0.021*** (0.007)	0.011 (0.008)	0.004 (0.006)	0 (0.007)	0.01 (0.008)	0.008 (0.006)
intercept	-2.682 (12.693)	-27.488* (15.103)	-13.935 (12.194)	-0.488 (9.975)	-28.057* (15.235)	-12.93 (11.99)
sigma_u	1.504*** (0.182)	2.265*** (0.229)	1.87*** (0.182)	1.023*** (0.133)	2.28*** (0.232)	1.808*** (0.177)
sigma_e	1.162*** (0.062)	1.162*** (0.047)	1.034*** (0.041)	1.174*** (0.063)	1.162*** (0.047)	1.032*** (0.041)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1325	1325	1325	1325	1325	1325
Censored obs	1095	958	1229	1095	958	1229

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Switzerland

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.295** (0.141)	0.048 (0.133)	-0.257 (0.19)	0.054*** (0.01)	-0.004 (0.011)	0.019 (0.015)
L1.In_export	0.053 (0.079)	0.101 (0.074)	0.078 (0.107)	0.061 (0.075)	0.098 (0.074)	0.104 (0.106)
L1.In_CO2	-0.03 (0.085)	0.098 (0.103)	0.103 (0.134)	-0.013 (0.077)	0.097 (0.103)	0.111 (0.135)
In_distance colony	-0.832*** (0.243)	-1.055*** (0.302)	-1.343*** (0.373)	-0.679*** (0.218)	-1.065*** (0.303)	-1.29*** (0.377)
L1.In_GDP_pc	2.005 (2.02)	6.61*** (2.385)	8.357** (3.445)	0.28 (1.9)	6.798*** (2.434)	7.34** (3.534)
L1.(In_GDP_pc) ²	-0.156 (0.119)	-0.446*** (0.14)	-0.558*** (0.202)	-0.029 (0.112)	-0.46*** (0.144)	-0.486** (0.209)
L1.In_population	0.403*** (0.129)	0.605*** (0.137)	0.389** (0.178)	0.299** (0.12)	0.614*** (0.138)	0.335* (0.18)
L1.freedom	-0.013*** (0.004)	0.002 (0.005)	0.008 (0.007)	-0.004 (0.004)	0.001 (0.005)	0.012* (0.007)
intercept	-6.953 (8.738)	-26.602** (10.478)	-28.677* (14.759)	-6.132 (8.085)	-26.778** (10.484)	-27.164* (14.922)
sigma_u	1.269*** (0.136)	1.812*** (0.16)	2.028*** (0.229)	1.099*** (0.124)	1.804*** (0.159)	2.052*** (0.231)
sigma_e	0.769*** (0.033)	0.877*** (0.027)	1.113*** (0.048)	0.763*** (0.033)	0.877*** (0.027)	1.113*** (0.048)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	985	731	817	985	731	817

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

United Kingdom

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.486 (0.431)	-0.085 (0.133)	0.035 (0.161)	0.107*** (0.03)	-0.011 (0.01)	0.033*** (0.012)
L1.ln_export	0.133 (0.216)	0.185** (0.072)	0.092 (0.101)	0.078 (0.202)	0.181** (0.072)	0.088 (0.099)
L1.ln_CO2	0.13 (0.196)	0.13* (0.071)	0.039 (0.11)	0.181 (0.17)	0.128* (0.07)	0.056 (0.106)
ln_distance	-1.27* (0.73)	-0.202 (0.236)	-1.783*** (0.388)	-0.991 (0.644)	-0.237 (0.238)	-1.671*** (0.375)
colony	1.784** (0.725)	1.941*** (0.27)	1.691*** (0.441)	1.729*** (0.621)	1.956*** (0.271)	1.66*** (0.423)
L1.ln_GDP_pc	-3.275 (5.17)	-4.608** (1.868)	-1.818 (2.655)	-6.848 (4.687)	-4.238** (1.892)	-2.899 (2.633)
L1.(ln_GDP_pc) ²	0.078 (0.309)	0.221** (0.109)	0.046 (0.155)	0.339 (0.283)	0.195* (0.111)	0.129 (0.155)
L1.ln_population	0.874*** (0.288)	0.788*** (0.094)	0.791*** (0.154)	0.752*** (0.259)	0.805*** (0.095)	0.729*** (0.15)
L1.freedom	-0.028** (0.013)	0 (0.004)	0.01* (0.006)	-0.006 (0.013)	-0.002 (0.004)	0.014** (0.006)
intercept	14.118 (22.152)	9.153 (8.306)	11.578 (11.859)	16.276 (19.601)	9.024 (8.306)	11.859 (11.576)
sigma_u	2.354*** (0.329)	1.139*** (0.097)	1.71*** (0.192)	1.913*** (0.279)	1.139*** (0.097)	1.62*** (0.183)
sigma_e	2.048*** (0.119)	0.976*** (0.029)	0.975*** (0.036)	2.079*** (0.122)	0.976*** (0.029)	0.972*** (0.036)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	1131	637	1253	1131	637	1253

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

United States

	Model 1 (State of Fragility)			Model 2 (Degree of Fragility)		
	Humanitarian	Development	Peace	Humanitarian	Development	Peace
L1.Fragility	0.51*** (0.17)	-0.018 (0.087)	0.089 (0.107)	0.06*** (0.014)	0.028*** (0.007)	0.05*** (0.008)
L1.In_export	0.087 (0.1)	0.157*** (0.05)	0.108* (0.062)	0.093 (0.098)	0.147*** (0.05)	0.088 (0.06)
L1.In_CO2	0.074 (0.115)	-0.041 (0.073)	0.088 (0.085)	0.087 (0.108)	-0.041 (0.072)	0.099 (0.081)
In_distance	-0.447 (0.462)	0.303 (0.317)	-0.817** (0.365)	-0.363 (0.428)	0.275 (0.31)	-0.823** (0.34)
colony	1.094 (2.056)	-0.669 (1.568)	0.441 (1.774)	0.766 (1.866)	-0.665 (1.53)	0.441 (1.635)
L1.In_GDP_pc	-0.445 (2.674)	9.068*** (1.569)	7.121*** (1.82)	-2.416 (2.605)	7.932*** (1.573)	4.99*** (1.792)
L1.(In_GDP_pc) ²	-0.057 (0.155)	-0.581*** (0.09)	-0.454*** (0.105)	0.085 (0.153)	-0.498*** (0.091)	-0.298*** (0.104)
L1.In_population	0.768*** (0.155)	0.626*** (0.094)	0.686*** (0.111)	0.672*** (0.148)	0.598*** (0.092)	0.614*** (0.105)
L1.freedom	-0.016*** (0.006)	0.017*** (0.003)	0.002 (0.004)	-0.006 (0.006)	0.021*** (0.003)	0.008* (0.004)
intercept	-1.183 (12.41)	-48.027*** (7.515)	-31.903*** (8.633)	0.568 (11.802)	-46.049*** (7.41)	-27.967*** (8.32)
sigma_u	1.972*** (0.166)	1.524*** (0.11)	1.725*** (0.135)	1.782*** (0.159)	1.487*** (0.107)	1.587*** (0.123)
sigma_e	1.201*** (0.036)	0.68*** (0.015)	0.754*** (0.019)	1.208*** (0.037)	0.677*** (0.015)	0.745*** (0.019)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1326	1326	1326	1326	1326	1326
Censored obs	672	233	1077	672	233	1077

Standard errors are in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$