Economic Shocks and Human Trafficking Risks

EVIDENCE FROM IOM'S VICTIMS OF HUMAN TRAFFICKING DATABASE

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WORLD BANK GROUP

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The World Bank
The International Organization for Migration

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Executive Summary

Every year, millions of people worldwide are trafficked, which has a profound impact on development and vulnerable populations. Human trafficking violates the fundamental principles of human rights that are linked to a range of core development issues, including poverty and vulnerability, gender and racial inequality, and gender-based violence. The Sustainable Development Goals include a target to end modern slavery and human trafficking by the year 2030. Governments are increasingly concerned about human trafficking but understand relatively little about who is involved, how it operates, and what enables or constrains it. The illegal—and thus less visible— nature of the practice makes it difficult to investigate. One of the main reasons for the gap in knowledge is the lack of micro-level data on human trafficking. These knowledge gaps make it harder for governments in origin and destination countries to adopt effective policies to reduce human trafficking. They also limit the ability of international organizations, non-governmental organizations, and donors to help governments mitigate the risks of human trafficking.

The World Bank and the International Organization for Migration (IOM) place importance on advancing an understanding of the drivers of human trafficking (Box E.1). To begin addressing some knowledge gaps, this joint report analyzes a unique micro-level trafficked victims' database compiled and updated by the International Organization for Migration (IOM) to answer two key analytical questions. First, do economic shocks increase the number of detected human trafficking cases from and within countries of origin? Second, can good institutions—ones that can enable adherence to the rule of law and the provision of access to justice or anti-trafficking policies in particular—and social assistance moderate the possible negative effects of economic shocks on trafficking cases in origin countries?

Through its support to victims of trafficking, IOM has developed the largest database of human trafficking cases in the world. In line with the growing recognition that trafficking is a domestic problem as well as a transnational crime (Cortés-McPherson 2020), roughly 20 percent of trafficking cases in the Victims of Human Trafficking database for which the destination information is available took place within a country's borders.[1] IOM's database does not represent the entire universe of human trafficking victims. It only covers countries with an IOM presence on the ground (which varies across space and over time) and only captures trafficking victims who are being assisted by IOM (including those initially identified by IOM partners who are later referred to IOM).

The report's analysis focuses on a key supply-side risk factor that is expected to increase vulnerability to human trafficking from and within origin countries—economic shocks, defined as large, discrete changes to commodity prices and GDP. It also explores the role of governance. According to UNODC (2020), 65 percent of victims were trafficked within their own countries. IOM's data contains information on the country of exploitation for 70 percent of cases, of which about 20

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1. According to UNODC (2020), 65 percent of victims were trafficked within their own countries. IOM's data contains information on the country of exploitation for 70 percent of cases, of which about 20 percent are trafficked internally.

BOX E.1. **The World Bank's and IOM's approach to addressing trafficking in persons**

Understanding the drivers of human trafficking is important for the World Bank's efforts to address sexual exploitation, forced labor, and child labor in its development projects. The World Bank's Environmental and Social Framework's requirements related to labor and working conditions acknowledge these vulnerabilities associated with human trafficking (Environmental and Social Standard 2). It also provides guidance on preventing sexual abuse and harassment and prohibits forced labor and the employment of trafficked persons within World Bank projects.

Protecting the poor and vulnerable from risks is an important part of the World Bank's approach to enhancing the lives and capabilities of every human being through economic growth, sustainability, and inclusion. Human trafficking remains a risk for many, especially in the aftermath of shocks. At the core of the World Bank Group's development mandate is a commitment to protect people and especially those who are most vulnerable so that everyone—regardless of their gender, race, religion, ethnicity, age, sexual orientation, or disability status—benefits from development. Protecting the vulnerable therefore involves improving the access of all people, including the poor and disadvantaged, to education, health, social protection, infrastructure, employment, financial services, productive assets and justice institutions. Through this approach, the World Bank helps countries address the underlying drivers of human trafficking.

The International Organization for Migration is the lead intergovernmental organization in the field of migration. In line with the 2030 Agenda and the GCM, IOM follows a rights-based approach and supports states to uphold migrants' rights, and migrants and communities to realize their rights. IOM recognizes the link between migration and economic, social, and cultural development (IOM Constitution), and this report helps to further an understanding of this dynamic through a counter-trafficking lens. IOM has been implementing counter-trafficking programming for over 25 years and assists nearly 8,000 victims of trafficking across the globe each year. IOM's interventions span from protecting victims of trafficking, to the sensitization and capacity building of justice systems, border control, migration law and policy. It encompasses the strengthening of national systems and responses, as well as private sector engagement, ethical recruitment, due diligence, and remediation measures. IOM supports the production of new evidence to inform the response to trafficking, such as through this joint study.

This publication centers on the values of human rights, dignity and wellbeing, all values that are enshrined in IOM's constitution and institutional approach. IOM also places great importance on the prevention of sexual exploitation, abuse, and harassment (PSEAH), which is mainstreamed throughout the Organization's work (IOM Strategic Vision, 2019–2023).

percent are trafficked internally. Institutions, such as the rule of law, access to justice, and anti-trafficking policies, act as protective factors that could weaken the link between economic shocks and vulnerability to trafficking in countries of origin. The main finding is that economic shocks are significant risk factors that increase vulnerability to human trafficking. In origin countries, economic vulnerabilities—especially those caused by global commodity price shocks—are strongly positively correlated with the number of observed cases of trafficking. Unusually large shocks to economic growth have a similar effect. Yet, the analysis suggests that good governance institutions (particularly a commitment to the rule of law and access to justice), stricter anti-trafficking policies, and social assistance can have a limiting effect on the number of observed cases of trafficking following economic shocks. As one of the most comprehensive empirical analyses of human trafficking cases to date, this study enhances understanding of the determinants and patterns of human trafficking. It is the first to empirically document the relationship between economic shocks and human trafficking.

The findings suggest that COVID-19-induced economic shocks are likely to increase vulnerability to human trafficking (see UNODC 2021). Governments have been forced to shut down economic activities and close borders to curb the transmission of the virus. Border closures in the midst of an economic shock could make migrants in some contexts more likely to seek irregular migration routes, which are likely to increase vulnerability to trafficking. Human trafficking will remain a major risk after COVID-19 is brought under control, which merits high levels of policy attention and resources.

1. Introduction

The trafficking of millions of people around the world each year has a profound impact on development and vulnerable populations. There are no global estimates of the prevalence of human trafficking. However, the International Labour Organization (ILO), the International Organization for Migration (IOM), and the Walk Free Foundation have estimated the prevalence of the related crimes of forced labor and forced marriage as 25 million and 15 million, respectively, with the total number of victims of modern slavery at 40 million globally for the year 2016 (ILO 2017). These criminal practices are ubiquitous, affecting all regions of the world. The prevalence of what ILO, IOM and the Walk Free Foundation call "modern forms of slavery" ranges from 2 cases per 1,000 inhabitants in the Americas, to 7.6 cases per 1,000 in Africa, with the Arab States (3.3 cases per 1,000), Europe and Central Asia (3.9 cases per 1,000) and Asia and the Pacific (6.0 cases per 1,000) in between (ILO 2017). These estimates, which are derived from national household surveys and the Victims of Human Trafficking database, suggest that about a quarter of all persons in forced labor are children (ILO 2017).

Human trafficking is a multifaceted crime that involves many perpetrators, routes, sectors, victims, and forms of exploitation (see Box 1). Victims are trafficked for different purposes, including prostitution or other forms of sexual exploitation, forced labor or services, or other similar practices. All of these forms of exploitation tend to share a profit motive. The use of forced labor in the private economy, for example, generates an estimated US$150 billion per year (ILO 2014). The analysis in this report does not distinguish among the different types of exploitation. Instead, the analysis focuses on the total number of registered trafficking victims in the IOM's Victims of Human Trafficking Database. The complexity and hidden nature of human trafficking crimes makes the practice harder to measure, to identify long-term trends, and to determine the impact of anti-trafficking initiatives.

Human trafficking violates fundamental human rights, as outlined in the Universal Declaration of Human Rights (Article 4); the right to freedom of movement within states and to leave any country and return to one's own country (Article 13); the right to free choice of employment, just and favorable work conditions, and just and favorable remuneration (Article 23); and the right to an adequate standard of living (Article 25). It also violates the principles outlined in the International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families; the Convention Against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment; and the Convention on the Rights of the Child (US Department of State 2019).

BOX 1.   What Is Human Trafficking?

The 2004 UN Convention against Transnational Organized Crime, better known as the Palermo Protocol, defines human trafficking as "the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability, or of the giving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation." "Exploitation" includes, at minimum, the prostitution of others or other forms of sexual exploitation, forced labor or services, slavery or practices similar to slavery, servitude or the removal of organs.

The definition emphasizes three key points:

- **Act**: Human trafficking involves the recruitment, transportation, transfer, harboring, and/or receipt of a person.

- **Purpose**: The purpose of human trafficking is exploitation, which can include sexual exploitation, forced labor, slavery or servitude, or the removal of organs.

- **Means**: The threat or use of force, deception, abduction, abuse of power or a position of vulnerability, or other forms of coercion. Means are not necessary to constitute child trafficking: the act and the purpose are sufficient.

Trafficking is linked to a range of core development issues including poverty and vulnerability (Kara 2010), gender and racial inequality, and gender-based violence. Trafficking victims suffer from terrible conditions, including exceptionally long work hours, physical confinement, serious occupational hazards, violence, and threats (Zimmerman and Kiss 2017). Thus, trafficking is also a public health concern (Becucci 2008). In many cases, trafficking in humans leads to family breakdown and the neglect of children and the aged. Trafficking in persons is also associated with a lower investment in human capital for children (i.e., schooling). Human trafficking thus deprives developing countries of their human, physical, and social capital. The Sustainable Development Goals include a target to end modern slavery and human trafficking by the year 2030.

States have recently passed more laws and policies to combat human trafficking. In 2000, fewer than 10 percent of countries had criminal statutes against trafficking in persons. By 2018, 168 countries had passed domestic legislation criminalizing the practice (US State Department 2019). This increase has been driven both by the 2004 Palermo Protocol and by a reframing of trafficking as primarily an organized crime problem rather than an egregious human rights abuse (Simmons, Lloyd, and Stewart 2018).[2] In many cases, the threat of sanctions from other states and international organizations, as well as shaming and advocacy campaigns from non-governmental actors, served as a catalyst for adopting anti-trafficking legislation, policies, and programs (Kelley and Simmons 2015).

Yet, because of the hidden nature of human trafficking, some governments may have limited information about who is involved in trafficking, how it operates, and what enables or constraints it—which limits the effectiveness of anti-trafficking initiatives (Weitzer 2015). There are very few national and sectoral estimates of human trafficking. At the global level, there are only estimates of forced labor and forced marriage. Academics have conducted preliminary analyses of how instability, poverty, and weak law enforcement enable trafficking. Too little is known about the characteristics of the process, the underlying drivers, the actors involved, and the magnitude of the phenomenon (Fedina 2015). Very limited systematic and rigorous empirical

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2. Framing human trafficking as an organized crime practice gives governments a greater drive to confront cross-border human movements that they view as potentially threatening (Simmons, Lloyd, and Stewart 2018).

research has been conducted on the efficacy of anti-trafficking policies and programs (Bryant and Landman 2020).

Since human trafficking is illegal, it is less visible, which makes it difficult to study (Goździak and Collett 2005; Akee et al. 2014). Gaps in knowledge about the practice also stem from the fact that victims tend to be members of hidden populations (e.g., sex workers, undocumented immigrants), as well as disagreements over definitions and scope (Patterson and Zhuo 2018), and on the best methods of estimating the prevalence of human trafficking (Danailova-Trainor and Laczko 2010). The media's politicization of human trafficking complicates understanding; it is commonly portrayed as a forced labor issue, a foreign issue, an immigration issue, a gendered issue, a sex exploitation issue, or a security issue (Bonilla and Mo 2019).

These knowledge gaps constrain governments in countries of origin and exploitation from adopting effective policies to reduce trafficking. They also limit the ability of other anti-trafficking actors, including international organizations, non-governmental organizations (NGOs), and donors to support governments in doing so. With a few notable exceptions, research on the topic has been mostly qualitative and descriptive (Meyer et al. 2015; Yea 2015) due to the lack of micro-level data on human trafficking (Tyldum 2010; Kangaspunta 2007; Busza et al. 2004).

To begin addressing (some of) these knowledge gaps, this report analyzes a unique micro-level[3] trafficked victims' database compiled and updated by IOM to answer two key supply-side analytical questions. First, do economic shocks increase the number of human trafficking cases detected in origin countries? Second, can good institutions—specifically ones that enable adherence to the rule of law and the provision of access to justice or anti-trafficking policies—and social assistance moderate the possible negative effects of economic shocks on detected human trafficking cases in origin countries? This report assumes that an increase in human trafficking cases in the IOM database is positively correlated with an increased risk of trafficking and a rise in the incidence of trafficking.

Through its support to victims, IOM has developed the largest database of human trafficking cases in the world. For data protection reasons, this dataset is not available to the public, but was shared with the research team as part of a partnership between the World Bank and IOM. The data includes nearly 50,000 registered victims of over 130 nationalities who were trafficked in more than 150 countries. Approximately 3,000 new cases are added each year.

The IOM database does not represent the entire universe of human trafficking victims (Brunovskis and Surtees 2010; Surtees and Craggs 2010). It only covers countries with an IOM presence (which varies across space and over time) and only captures trafficking victims assisted by the organization (including those initially identified by IOM partners who are later referred to IOM).[4] In addition, information is missing on several key variables, including roughly 15,300 instances of victims' country of exploitation. An insufficient number of country/year observations precludes a statistical analysis of trafficking routes; possible differences between the factors that give rise to internal versus external, or transnational, trafficking; and the factors associated with its prevalence in destination countries. The database contains the citizenship of almost every victim, which permits a rigorous analysis of the supply-side factors driving trafficking both domestically and across country borders.

The IOM database provides a unique source of standardized micro-data on victims of trafficking that is international in scope. It includes information on victims' backgrounds, trafficking locations and routes, how people fall into the trafficking process, associated forms of exploitation and abuse, sectors of exploitation, and how victims are controlled. The data are confidential, de-identified, and standardized across years and locations. To explore the supply-side research question posed above, the

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3. The micro-level data has been aggregated to the country/year level for analysis.

4. For instance, it does not systematically include the United States, where 10,949 trafficking cases (more than one-fifth of all cases in the IOM database) were reported to the US National Human Trafficking Hotline in 2018 alone (Polaris 2019).

research team merged national-level auxiliary data that captures countries' institutional, economic, conflict, and socio-demographic characteristics into IOM's dataset.

Cases included in the database constitute a sample of the global population of detected trafficking victims. Large numbers of victims identified in particular target countries do not necessarily indicate a higher prevalence of trafficking; they may instead signify an effective counter-trafficking response. In addition, the sample may be biased if some types of trafficking cases are more likely to be identified (or referred) than others. The extent of such bias is not always known and cannot always be corrected for since the unidentified population is, by definition, unknown. However, the bias is less severe with respect to origin countries defined in terms of the victims' citizenship than countries of exploitation, as explained below.

The academic literature has developed different methods to address sample bias. A typical approach, motivated by Heckman (1979), follows a two stage model, in which the first stage consists of modeling the probability of selection into the sample. This method cannot be applied to the analysis of IOM's Victims of Human Trafficking Database because the database consists only of selected observations (i.e. reported cases), making it impossible to estimate the first stage of a Heckman style approach. Moreover, there are no plausible instruments for the first stage estimation among the variables included in the dataset. In addition, as described below, this report's analysis focuses on the factors associated with trafficking risks in origin countries (i.e., aggregation of individual-level data to the country-level) rather than at the individual-level, complicating this type of instrument-based bias correction. An alternative approach to address sample bias, used in the study of other crimes like sexual violence, relies on estimating the degree of underreporting in the data through the combination of different data sources (Jouriles et al 2020). However, this approach involves significant field-based data resources not available for this report. The empirical strategy of this report's analysis will not be able to systematically address the presence of sample bias in the IOM's Victims of Human Trafficking Database. Instead, this report's focus is on a

risk factor of human trafficking, economic shocks as measured by commodity price changes, which is unlikely to be correlated with the potential sources of sample bias.

This report focuses on a key supply-side factor that is expected to influence the intensity of flows from (and within) origin countries—economic shocks.[5] Economic shocks disrupt local labor markets, lead to greater unemployment and revenue loss, and increase the pressure on individuals and households to pursue riskier livelihoods and survival strategies to find alternative sources of income, which may include transacting with risky employers who may actually be criminals. This pressure is especially acute when governments tie social benefits to work requirements (Besley and Coate 1992). Given the scarcity of well-paid jobs following sharp economic downturns, individuals are more likely to consider employment in sectors that have a relatively high risk of exploitation such as the transactional sex industry (Edlund and Korn 2002), informal artisanal mining (Steele 2013), and the fishing industry (Adeborna and Johnson 2014). Most consequentially, economic shocks, on average, increase risk-taking behavior (Schildberg-Hörisch 2018; Tinti and Reitano 2018).[6] The decline of non-risky economic opportunities, coupled with individuals' greater willingness to take risks, drives the expectation that economic shocks increase the incidence of human trafficking in origin countries. Qualitative and case study evidence suggests that the absence of economic opportunities plays a central role in pushing victims into trafficking. Therefore, the empirical analysis focuses on causally identifying the impact of economic shocks on human trafficking.

The report theoretically and empirically explores the role of governance institutions in mediating the relationship between economic shocks and human trafficking cases. Specifically, respect for the rule of law and access to justice both raise the expected cost of labor and sexual

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5. This report's framework builds on choice-based, utility-maximizing frameworks from political economy approaches to studying migration (Czaika 2009).

6. Economic shocks can also increase risky and criminal behavior on the part of perpetrators. For example, major economic shocks may increase bride kidnapping if they negatively impact grooms' ability to make pre-marital payments to the family of the bride (Rexer 2018).

exploitation by making such practices more likely to be detected and prosecuted (Becker 1968). Similarly, stricter anti-trafficking policies and programs may mitigate the impact of economic shocks on trafficking through the prosecution of traffickers, as well as prevention (i.e., awareness-raising campaigns, hotlines, enhanced labor inspections) and strengthening the protection of victims (i.e., identification of victims, victim protection services, legal services for victims, psychosocial support services). Finally, the report assesses the extent to which government social assistance mitigates the impact of economic shocks on human trafficking by reducing individuals' need to turn to high-risk sectors and migration for employment. The empirical analysis thus tests whether respect for the rule of law, access to justice institutions, anti-trafficking policies, and social assistance can reduce the effect of structural conditions such as economic shocks on human trafficking cases in origin countries.

The report's main finding is that economic shocks significantly increase human trafficking cases. In origin countries, economic vulnerabilities caused by global commodity price shocks meaningfully increase the number of trafficking cases. Unusually large shocks to growth have a similar effect. Importantly, as hypothesized, the analysis suggests that good governance institutions and particularly a commitment to the rule of law and access to justice as well as stricter anti-trafficking policies and social assistance can have a limiting effect on the number of observed cases of trafficking following economic shocks.

The study enhances understanding of the determinants and patterns of human trafficking. It empirically documents the relationship between economic shocks and human trafficking cases. It also represents one of the most comprehensive empirical analyses of human trafficking to date.

The remainder of the report proceeds as follows. Section 2 provides a brief review of prior studies on human trafficking and identifies gaps in the literature. Section 3 describes IOM's Victims of Trafficking dataset, and Section 4 discusses the study's framework for explaining trafficking flows in origin countries. Section 5 reports the results of the empirical analyses and robustness checks, and Section 6 concludes with a discussion of potential policy implications.

2. Evidence and Knowledge Gaps on the Drivers of Human Trafficking

Previous studies on trafficking generally fall into three main categories: (i) conceptual work on what types of coercive (labor) practices constitute trafficking, (ii) qualitative research on the experiences of human trafficking victims and the nature of the trafficking process, and (iii) quantitative cross-country research on the determinants of human trafficking.

Conceptual work. Definitional problems continue to plague scholarly and policy discussions of human trafficking (Patterson and Zhuo 2018). While the Palermo Protocol provides a benchmark definition of the practice, some countries have adopted more expansive definitions that mirror vigorous debates in the literature about what constitutes trafficking in persons. For example, there are different opinions about what forms of work-related exploitation should be considered labor trafficking (Chuang 2014). Some analysts argue that multinational, governmental, and non-governmental groups working to reduce trafficking commonly misinterpret the cultural contexts of migration or local work and child fostering arrangements as trafficking—especially seemingly exploitative child labor to which parents give their consent (Busza et al. 2004; Huijsmans and Baker 2012; Steele 2013). Yet, child labor remains pervasive (see Box 2). In addition, there is an ongoing debate about how scholars and policy makers should distinguish between trafficking and human smuggling (Zhang 2012). Finally, there is significant tension in the literature regarding how sex trafficking and sex work are discussed, measured, and policed (Huijsmans and Baker 2012). McCarthy (2014) thoroughly reviews this debate and its origins.

Qualitative studies provide rich insights into human trafficking victims' lived experiences, the profile of human trafficking offenders, and modes of recruitment. These studies consistently find a close association between migration and trafficking (Dinan 2008; Kara 2010; Tinti and Reitano 2018). Busza et al. (2004), for example, find that the factors that drive labor migrants to work in brothels despite trafficking risks include economic incentives and dissatisfaction with rural life and agricultural labor. An ethnographic study of young migrant mining laborers in Western Africa reached a similar conclusion (Howard 2014). The more labor migration is desired due to a lack of local opportunities, Howard argues, the more likely locals are to be victims of trafficking. Howard maintains that prevailing social norms contribute to the supply of potential trafficking victims; he finds that trafficked individuals viewed labor migration as the principal way to earn money to support their families and escape poverty. The analysis below generalizes these anecdotes to a much broader sample of countries of origin. Similarly, Dottridge (2002) argues that endemic rural poverty,

BOX 2. Child Labor

According to ILO Convention 138 on the Minimum Age for Admission to Employment and ILO Convention 182 on the Worst Forms of Child Labor, child labor is work that: interferes with compulsory education; engages children below the minimum age of employment in the production of goods and services; and is hazardous, mentally, physically, spiritually, socially, or morally dangerous, and harmful to children. The ILO Global Estimates and Trends on Child Labor report from 2020 estimates that there are 160 million children aged 5–17 engaged in child labor (ILO and UNICEF 2020). This figure only includes children whose health, safety, and education are at risk or who work below the legal minimum age. It does not include children and young people who work legally. Of the 160 million child laborers, nearly half (79 million) are in hazardous child labor and therefore at even higher risk of physical or psycho-social harm.

The most common form of child labor is in the agriculture sector; it causes substantial economic and human losses every year. It is also a complex socioeconomic issue, rooted in economic structures, social norms, government policies, production systems, labor market structures, knowledge, and awareness, among other factors. Multidimensional poverty is one of the most widely recognized drivers of child labor. Chronically poor families and communities are more likely to resort to child labor—especially in communities that are under-serviced in terms of education opportunities, health care, transport, and water supplies.

A 2018 ILO policy and program review focused on ending child labor by 2025 highlights an integrated approach focused on four key policy areas (ILO 2018). First, advancing the legal commitment to eliminate child labor and the central role of social dialogue is the basis for all policy initiatives. Second, promoting economic opportunities for adults and youth of legal work ages, including through rural livelihoods, addresses an underlying cause of child labor as it removes the need for families to rely on child labor to overcome poverty or reduce their vulnerability to economic shocks. Third, building and extending social protection systems to mitigate households' economic vulnerability is important, especially when child labor is driven by poverty and vulnerability to economic shocks. Finally, expanding access to free, good-quality public education is an essential element.

Donors increasingly promote an area-based local development approach, which can help reduce the risks of all forms of child labor and drive community-wide improvements in a particular locality. This approach addresses the structural drivers and socioeconomic vulnerabilities that push children into work, such as limited and poor-quality livelihood and employment opportunities and related poverty, using an integrated set of simultaneous interventions (ILO 2013). As with many child labor initiatives, national and regional government commitment and capacity are essential to the sustainability and scaling up of an area-based approach.

Sources: ILO 2013, 2018; ILO and UNICEF 2020.

especially when combined with information gaps, can lead poor families to hand off (or sell) their children to traffickers in the hope of improving their life chances.

Qualitative and mixed methods studies also shed light on the nature of the trafficking process. Goździak (2016), for example, argues that most victims are trafficked by family members and trusted friends, rather than criminal syndicates, based on interviews with 140 youth trafficked into the United States for sexual exploitation. Arhin (2016) corroborates this finding based on an analysis of 72 court cases of trafficking; Williams (2008) focuses on transnational organized crime. Steinfatt and Baker (2011) classify forms of exploitation in the commercial sex industry based on in-person visits to prostitution venues. On the one hand, the ethnographic approach has been critical to developing a nuanced understanding of the factors that incentivize trafficking. On the other hand, such studies

rely on a relatively small number of interviews with non-representative samples, so it is not clear whether their findings generalize across time and space.

Quantitative cross-country studies. A growing body of work uses cross-country regressions to investigate some determinants of trafficking. All such studies must overcome data limitations. They use one of four data sources to measure the incidence of human trafficking: (a) The Global Slavery Index, which estimates the prevalence of "modern forms of slavery" in 186 countries (Tickler et al. 2018),[7] (b) estimates from the UN's Office on Drugs and Crime (Cho et al. 2013), (c) aggregation of the country-by-country accounts of the US Department of State's *Trafficking in Persons* (TIP) reports (Akee et al. 2010),[8] or (d) estimates of trafficking in the EU compiled by Eurostat, the EU's statistical agency (Tallmadge and Gitter 2018). These datasets are not directly comparable: they differ in how they define human trafficking, the data sources used, and the coverage and method of extrapolation.

The nascent large-n **supply-side** literature, which focuses on origin countries, generally argues that factors that contribute to out-migration and asylum seeking—especially poverty, violent conflict, political instability, and repression—also increase human trafficking flows. Violence, instability, and repression raise the relative costs of staying by inducing physical threats and destroying economic opportunities and individual livelihoods. Tinti and Reitano (2018) argue that these factors encourage fleeing individuals to take greater risks, including those that might increase the risk of falling victim to trafficking (for example, in their choice of cross-border smugglers). Cho (2015) examines the relationship between migration and human trafficking in Germany, and finds that if a destination country receives migrants from a specific origin country, it is more likely to receive trafficked individuals from that country. Consistent with those ideas, Akee et al. (2010) find that trafficking flows increase with conflict and the

number of internally displaced persons in origin countries, and decrease as the origin country's GDP increases. Relatedly, Rao and Presenti (2012) find that transnational trafficking has an inverse U-shaped relationship with per capita income (since at very low income levels, most people cannot afford the relatively high cost of cross-border travel), and is more likely in countries with higher gender inequality, for which they proxy using the female-to-male income ratio.

However, there are limitations associated with using country-level estimates to draw inferences about the behavior of individual trafficking victims, which apply to this report's analysis as well. In addition to the intractable problem of ecological inference (i.e., inferring individual-level behavior from aggregate-level data), such data cannot determine the relative importance of individual-level factors that might determine whether victims pursue risky livelihoods strategies that leave them vulnerable to trafficking.[9] These factors could include the information environment and prevailing social norms (e.g., related to child labor or sex in exchange for payment) as well as risk preferences. Mahmoud and Trebesch (2010) analyze the determinants of human trafficking and labor migration in origin countries using micro-level data derived from household surveys conducted in a sample of Eastern European countries. Consistent with Akee et al. (2010), they find that the prevalence of emigration in a household/region increases the probability of human trafficking, arguably due to primarily lower recruitment costs. Bazzi et al. (2020) carried out an intervention among migrant women in Indonesia, which sends about 9 million persons abroad to work every year. Most of these migrants are women with low levels of education who find jobs as domestic workers. Migration is heavily intermediated, as most workers rely on recruiters and placement agencies. The intervention assessed in Bazzi et al. (2020) provided women from high-migration villages with a set of informative documents about the quality of recruiters. This intervention slightly reduced migration rates (by nearly 5 percentage points or about 10 percent of the mean) and improved the average migrant experience before and

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7. See Larsen and Diego-Rosell (2017) for a discussion of the index's methodology, and Gallagher (2017) and Farrell and de Vries (2020) for recent critiques.

8. A country is designated as a trafficking destination in TIP reports only if at least 100 trafficking cases were reported there in the past year. The reports have coded country destination–origin pairs of trafficking since 2002.

9. These strategies may include transacting with potential employers who may actually be traffickers.

during migration. These results show that having more information about the quality of intermediaries can improve the welfare of labor recruits (Tinti and Reitano 2018). General awareness-raising campaigns, however, have produced scarce evidence of success (Tjaden et al. 2018; Bryant and Landman 2020). Yet even if information about the quality of recruiters is known, trafficking and exploitation may still occur.

A second strand of large-n studies focuses on the **demand-side** factors of trafficking (in countries of exploitation). A key debate within this body of work relates to the relationship between the incidence of trafficking and law enforcement, much of which is based on the elasticity of the demand in destination countries. Some argue that human trafficking is more likely where legal protections are insufficient, and where existing laws are not effectively enforced (Haynes 2006; Fitzpatrick 2002). IOM, for example, maintains that labor trafficking is more prevalent in destination countries that have a large market for cheap labor as well as insufficient legal frameworks or trained authorities to prevent the worst forms of labor abuse (IOM 2005). Exploring one aspect of target countries' legal framework (the legality of prostitution), Cho et al. (2013) and Jakobsson and Kotsadam (2013) find that on average, human trafficking is more prevalent in countries where prostitution is legal. Others contest this line of reasoning by arguing that if demand is inelastic, a crackdown in destination countries can increase traffickers' profits, leading to higher flows of trafficked individuals when traffickers have access to an internationally diverse range of buyers (Akee et al. 2014). Finally, Tallmadge and Gitter (2018) focus on a more expansive set of possible pull factors, and find higher rates of trafficking in target countries in which immigrants represent a larger share of the population, there is access to the sea, per capita GDP is low, the level of unemployment is high, and prostitution is legal. Of course, these correlations are not necessarily causal.
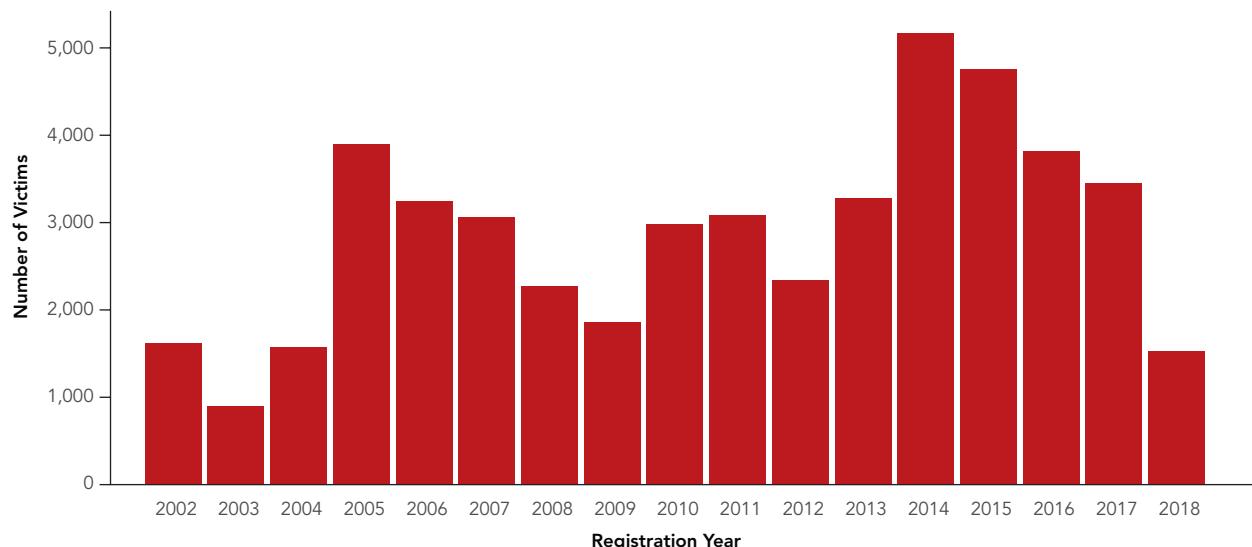
These studies have only limited applicability to other contexts. They rely on data sources that extrapolate from a limited amount of data (Weitzer 2015), have a narrow geographic scope (Mahmoud and Trebesch 2010; Tallmadge and Gitter 2018), or aggregate country-level cross-sectional data to make inferences about individual behavior (Cho et al. 2013; Goździak and Collett 2005). The current study seeks to overcome these limitations using a new source of data, which the following section describes in more detail. IOM's Victims of Human Trafficking database has a broader geographic coverage of registered cases that cover a longer period of time, and is updated more regularly than other sources of data on human trafficking.

3. A Dataset on Human Trafficking Victims

IOM maintains the largest global database of trafficking cases in the world, which reports information on its direct assistance to trafficking victims. The Victims of Human Trafficking database contains about 50,000 individual cases. IOM currently assists 7,000–9,000 trafficking victims each year. Approximately 3,000 unique cases were added each year between 2005 and 2017 (Figure 1). IOM collects systematic data on (most of those) victims using a standardized process to ensure it is comparable across countries and international in scope. The dataset includes information about victims' backgrounds, trafficking locations and routes, how they entered the trafficking process, associated forms of exploitation and abuse, sectors of exploitation, means by which victims are controlled, and (some) information on perpetrators. Other databases on human trafficking, such as the Counter Trafficking Data Collective database maintained by IOM, Polaris and Liberty Shared, do not contain this level of detail (e.g., they exclude trafficking routes and entry into trafficking) (CTDC 2020).

FIGURE 1. Trafficking Cases Reported by Victims and Registered in IOM's Victims of Human Trafficking Database (2002–2018)

Source: IOM Victims of Human Trafficking Database.
Note: IOM's dataset consists solely of data collected from victims of trafficking identified and assisted by the organization and its implementing partners. The variation in this figure does not necessarily reflect differences in the underlying incidence of trafficking over time.
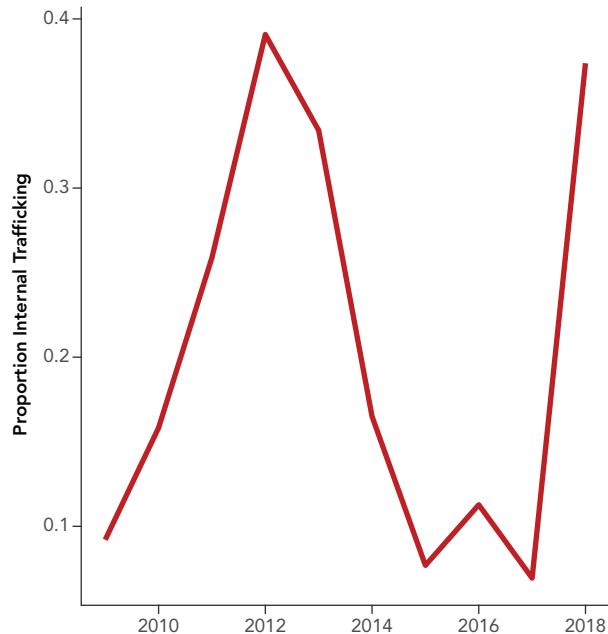
IOM's dataset consists solely of data collected from victims of trafficking identified and assisted by the organization and its implementing partners. Thus the database only covers countries with an IOM presence, which means that although the coverage is extremely broad (IOM has 480 country offices and sub-offices worldwide), it is not complete and can vary across space and over time.[10] Therefore, the dataset should be understood as a series of country samples with varying numbers of cases. And like all data sources on trafficking victims, the dataset does not contain information on victims who have not been identified. In that respect, there is no way of knowing if the country samples are biased, and if so to what extent. However, the dataset provides rich details on a wide range of types of human trafficking cases, which surveys based on probabilistic samples cannot provide with any degree of confidence since trafficking is a statistically rare event and its victims are hidden and hard to reach.

The data are confidential, anonymized, and standardized based on various case management interviews, including screening interviews, administered while assisting victims of trafficking. This data is recorded in two standard interview batteries containing a number of questions with fixed responses that cover a range of information about the victims' experiences and needs. IOM enters additional information about each victim, including the countries through which they were trafficked and the work they performed at each stop. This standardization is vital to researchers because it ensures that the entries are comparable regardless of location, and limits the number of null or invalid responses. However, due to operational challenges and the need to prioritize protection and assistance over research, there is a significant amount of missing data for many variables, including the exact timeline of events that led individuals into trafficking situations.

IOM's Victims of Human Trafficking database contains information on each victim's country of origin (i.e., country of citizenship) and country of exploitation. For victims of

FIGURE 2. Share of Internal Trafficking Cases Reported by Victims and Registered in IOM's Victims of Human Trafficking Database (2009–2018)


Source: IOM Victims of Human Trafficking Database.
Note: IOM's dataset consists solely of data collected from victims of trafficking identified and assisted by the organization and its implementing partners. Thus, the variation in this figure does not necessarily reflect underlying differences in the proportion of internal versus external trafficking.

internal human trafficking, these will be the same. Of the victims for whom departure information is available, about 20 percent were trafficked within their own country's borders (Figure 2). However, there is considerable variance in internal trafficking across years. The share of internal trafficking victims rose to close to 40 percent in 2012 but fell to below 10 percent in 2015.

The dataset also contains a variety of standard demographic variables such as gender, age, and education. Gender is a binary variable that records whether an individual identifies as male or female.[11] Of the recorded cases in the

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10. For instance, it contains little information on victims exploited in the United States, which according to the UNODC 2018 *Global Report on Trafficking in Persons* has significant levels of inbound trafficking from other regions.

11. Gender also includes transgender and non-conforming individuals. There are 13 such individuals in the data. These observations are not included in the descriptive analysis given that their very limited presence in the dataset precludes drawing any robust conclusions about their trafficking experiences.

database, 65 percent of the victims are female and 35 percent are male. Among these same cases, the average age is 26 for female victims and 29 for male victims.

IOM's dataset also provides valuable, albeit partial, information (due to missing data) on the type of trafficking and modes of control to which victims are subjected. About half of the recorded cases include information on the type of trafficking victims experienced. Among these cases, 58 percent reported that they experienced forced labor, and 35 percent reported that they experienced sexual exploitation. Whereas most (93 percent) men reported that they experienced labor exploitation, most women reported that they experienced either sexual exploitation (53 percent) or labor exploitation (39 percent).

The descriptive assessment informs the study's empirical analysis of the role of supply-side factors—particularly economic shocks—in increasing trafficking cases. The next section describes the analytical framework used to explore this dimension of trafficking.

4. Analytical Framework

This section outlines the study's framework for explaining how a specific set of structural factors impacts vulnerability to trafficking in the origin country. This framework builds on two pillars—structural conditions and governance institutions. While the study's framework is grounded in political economy approaches to studying migration, it is consistent with the public health literature's approach to human trafficking, which involves identifying risk and protective factors that affect vulnerability to human trafficking (e.g., Brofenbrenner 1979, 1989; Zimmerman et al. 2011; Zimmerman and Kiss 2017; Rothman et al. 2017). The public health framework would consider structural factors, such as economic shocks, to be risk factors, and governance institutions to be protective factors.

The first pillar, structural conditions, builds on (and expands) past work on the positive relationship among poverty, violence, and mass displacement on the one hand, and trafficking cases on the other (Cameron and Newman 2008). In seminal models of migration, individuals weigh the costs of leaving home (internally or across borders) against the prospective benefits of migrating out (including temporarily/seasonally), subject to uncertainty and budget constraints (Czaika 2009).

This report expands the framework to focus on sharp economic decline (i.e., change in economic *conditions*, not levels). Economic crises reduce the availability of good-paying jobs (including self-employment) and thus push individuals to search for alternative (or supplementary) income sources, especially in industries for which labor demand is relatively inelastic to local economic conditions. These can include job opportunities overseas, commercial sex, organized crime (e.g., involvement with gangs) as well as work in domestic industries that are low skilled and/or export oriented, such as artisanal informal mining, commercial agriculture and fishing, and (some forms of) manufacturing. Importantly, export-oriented industries that hire low-skilled workers tend to be ill regulated and often work in hazardous sectors—two factors that increase the risk of extreme labor exploitation, including trafficking. In short, economic shocks disrupt local labor markets, making riskier income-generating activities more attractive.

At the same time, economic (and arguably other forms of) crises lead individuals to take greater risks, for example with respect to (a) the type of jobs or sectors they pursue (e.g., artisanal mining, work for gangs), (b) destinations that are at a relatively high risk of labor exploitation, and (c) the intermediaries they hire, such as job recruiters and—where relevant—cross-border smugglers. The New York Declaration for Refugees and Migrants (UN 2016) confirms this link by recognizing that

refugees, internally displaced persons, and irregular migrants are at greater risk of being trafficked and of being subjected to coerced, exploitative labor because the urgency of their situation may lead them to make risky decisions. In sum, drastic changes to income are expected to cause potential victims (and with minors, their parents) to take greater risks that affect the incentive environment surrounding human trafficking.[12]

While job scarcity and greater risk acceptance are relevant potential risk factors for both internal and external trafficking, there are important distinctions between them. One key difference is that an economic crisis in an origin country A does not necessarily entail an economic crisis in an external country B. Thus the demand for vulnerable labor in country B may not be affected by the economic crisis in country A; it just makes recruiting vulnerable people from country A into B more lucrative, on average, because individuals from country A are more likely to accept a lower wage in country B than current workers in country B. By contrast, an economic crisis in country A necessarily affects the domestic labor demand. On the one hand, a decrease in the availability of jobs increases employers' bargaining power, which in turn makes workers significantly more vulnerable to exploitation (exploitation effect). Economic crises also increase input costs, lower export volumes, and depress domestic sales, which may lead employers to cut costs and exploit workers. On the other hand, an uptick in the labor supply may help reduce workers' reservation price to a low enough level that employers do not need to use illicit tactics such as intimidation, threat, or coercion (reservation cost effect). A lower reservation price means that individuals may be more willing to accept work under poor conditions, putting themselves into situations of heightened vulnerability in which they are more likely to be trafficked. Both scenarios—an individual is subjected to exploitation or has a very low reservation price—constitute trafficking. Thus, one hypothesis is that economic shocks (and changes) increase individuals' vulnerability to trafficking.

Past research (cited above) and anecdotal evidence points to a positive relationship between poverty and trafficking in persons. Trafficking victims in Europe, for example, tend to hail from relatively poor countries. However, no empirical study has yet explicitly tested the link between economic shock (i.e., change rather than level) and human trafficking incidence.

The second pillar of the study's theoretical framework is based on the assumption that while economic shocks may be central to the trafficking process, these conditions do not exist in a vacuum. Human trafficking is more often detected in countries with institutions that are too weak to deter exploitation. Those with good governance institutions—ones that enable adherence to the rule of law and access to justice—constrain trafficking by, for example, cracking down on organized crime. Governance institutions thus help mitigate the effect of economic crisis on trafficking.

While this report focuses on economic shocks, other structural factors are also likely to increase human trafficking risks. For instance, those escaping war, persecution, and natural disasters are vulnerable to trafficking. Natural and human disasters displace individuals, who in turn lose access to economic and social safety nets (Drabo and Mbaye 2015). Conflicts create favorable conditions for human trafficking in part because they generate a mass of vulnerable people escaping violence (Akee et al. 2010). Armed groups often engage in trafficking in the territories under their control (to generate income); they have also used trafficking to coercively mobilize thousands of children as combatants (Honwana 2011). Natural disasters similarly upend the lives and livelihoods of those in their wake, which may lead survivors to take risks when seeking refuge. The regression analysis below therefore explores the associations between natural disasters, civil wars, and reported human trafficking cases.

Anti-trafficking policies and practices—prevention and protection—are likely to reduce both internal and external trafficking. Anti-human trafficking policies are designed to prevent the practice and protect victims, which may also mitigate the impact of economic crises on

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12. While not the focus of the analysis, as mentioned before, economic shocks could also increase risky and criminal behavior on the part of perpetrators.

human trafficking flows. One of the most popular prevention methods is government and NGO awareness-raising campaigns that seek to reduce information asymmetries in the migration, labor, and trafficking markets. In many cases, migrants will not know that they will be exploited until they arrive in a destination country (Amnesty International 2011). These campaigns are thus often targeted at potential victims or perpetrators, or the population as a whole.[13] Other preventive measures like rigorous labor inspections and national feedback mechanisms or hotlines can help detect instances of human trafficking. In Uzbekistan, for example, the expansion of the labor inspectorate and the establishment of a national feedback mechanism for labor complaints—combined with awareness raising of labor rights and capacity building for civil society representatives, labor inspectors, prosecutors, trade union members, local government officials, and reforms—contributed to a decline in the use of forced labor in cotton picking from an estimated 13 percent in 2017 to 4 percent in 2020 (ILO 2021). Victim protection services, including the provision of legal services to victims, facilitate the prosecution of criminals. The annual US State Department TIP reports document and monitor the measures each country takes to combat human trafficking; they illustrate the large variance in the amount of resources that states commit, which is not necessarily related to a country's wealth. There are examples of relatively poor countries where government officials implement public awareness campaigns and work directly with NGOs to identify and assist victims (US Department of State 2020).

Governance institutions—particularly ones that enable adherence to the rule of law and the provision of access to justice—will increase the prosecution of traffickers and contribute to economic development, which will in turn reduce internal and external trafficking. Previous studies (Cho 2012) have found that human trafficking is more prevalent in countries with higher crime rates, which suggests that weak law enforcement facilitates a market for illicit activities. Stronger enforcement of anti-criminal

regulations and prosecuting criminals will reduce trafficking in origin countries irrespective of the destination. The ethnographic literature provides evidence of the victims' recruitment process, which in both external and internal trafficking occurs mostly in the victim's community of origin, and usually involves friends, neighbors, or relatives (Goździak 2016). Building on Becker's (1968) seminal economic model of crime, respect for the rule of law and enforcement of anti-human trafficking laws raise the costs for criminals of engaging in human trafficking activities, such as recruiting individuals, maintaining an involuntary labor force, and transporting recruits within countries and across borders, and reduces profits (Kara 2010; Albanese 2011). Police corruption is associated with higher rates of trafficking outflows since it lowers the costs for traffickers of recruiting and transporting in origin countries (Jonsson 2019). While enforcing anti-human trafficking laws is likely to reduce trafficking in the origin jurisdiction, it may inadvertently divert traffickers to nearby jurisdictions that lack regulations or the capacity to enforce them (Frank and Simmons 2013). For this reason, regional cooperation to enforce human trafficking laws is critical to prevent such negative externalities. More broadly, the rule of law and access to justice institutions will reduce trafficking risks by contributing to an overall environment in which individuals thrive with greater economic opportunities, less exposure to coercion, and much less need to resort to risky livelihoods strategies (Kaufmann and Kraay 2002; Haggard, MacIntyre, and Tiede 2008).

Social assistance to poor and vulnerable households can help reduce the likelihood that an individual will pursue risky livelihoods and survival strategies and become a victim of trafficking as a result. Government social assistance can assume many forms, including cash assistance, grants to communities, workfare or food-for-work programs, insurance, and in-kind transfers in the form of food, school scholarships, and livelihoods tools and equipment (e.g., seeds, fertilizer, computers, wireless internet, greenhouses). Between 2000 and 2017, the number of developing countries offering at least some type of social protection program increased from 72 to 149 (World Bank 2017). During economic crises and other shocks, governments are increasingly channeling targeted social assistance (and

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13. While there is some evidence that information campaigns can increase the public's ability to identify incidents of trafficking among family or friends (Archer, Boittin, and Mo 2016), few such campaigns have been rigorously evaluated (Tjaden, Morgenstern and Laczko 2018; Van der Laan et al. 2011).

often cash) to vulnerable groups (Smith and Bowen 2020). Some governments use social assistance infrastructure to prevent human trafficking and to identify and assist victims of trafficking. For example, in the Amazonas state of Brazil, several state agencies initiated a project to map incidents of child labor among the displaced Venezuelan population to connect these communities, which are vulnerable to trafficking, to social assistance services (US Department of State 2020: 127). Examples abound in the US State Department's TIP reports of governments that provide victims of human trafficking with social assistance.

In short, while structural conditions, governance institutions, and social protection are related, they are not collinear. Economic precarity and violence may lead to the desperation and risk taking that are characteristic of human trafficking, but strong institutions, policies that target trafficking, and especially a commitment to the rule of law may mitigate the economic effects. The same is true of social assistance to vulnerable households during economic crises. The following section analyzes IOM's data using the framework described here.

5. Empirical Analysis

Following the above framework, this section empirically tests whether strong changes in conditions of economic development—economic shocks—contribute to an increase in observed instances of human trafficking, and whether good governance institutions can moderate those effects. This analysis aggregates IOM's data to the origin country level, measured using information on victims' country of citizenship.[14]

Data and Variables

The key outcome of interest is the total number of registered trafficking victims (in natural log) originating from a certain country in a given year (see Table 1 for the descriptive statistics for key variables).

Explanatory variables

Following the framework described above, two different measures are used to assess a shock to a country's economic conditions. The first is a GDP shock measure that captures whether a country has experienced a sharp decline in its economic production; it assesses a state's relative (rather than absolute) well-being. This variable only includes exceptionally large negative shocks to GDP.[15]

The second measure is changes in the price of the country's export commodities, which builds on Bazzi and Blattman's measure (2014). This measure factors in changes in prices across several classes of commodities as well as the share of each commodity class exported in a given country-year. It excludes commodities for which the country is a price maker. Importantly, because the measure only exploits variation that is not driven by the country of interest, it is exogenous to local economic production, which can be influenced by political instability, economic distress, or natural disasters—factors that may affect local trafficking risks. Because the measure of price shocks is highly unlikely to be correlated with these potential confounding factors, the estimated effect on the number of registered victims is credible.

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14. These aggregate-level data cannot speak to the specific drivers of human trafficking at the subnational and household levels, which are likely to vary across time and space. More fine-grained subnational and household-level data would be needed to identify these drivers.

15. An annual change in GDP per capita that falls within the 15 percent largest annual decreases in GDP among all countries in the sample for the period of analysis is defined as a GDP shock (Nielsen et al. 2011, 224).

TABLE 1. Descriptive Statistics of Variables in Regression Analysis

		n	mean	sd	mad	min	max	range	skew	se
1	Log Victims	1,062	2.13	2.02	2.39	0	7.47	7.47	0.72	0.06
2	GDP Shock	920	0.25	0.43	0	0	1	1	1.16	0.01
3	Log GDPc	1,046	8.07	1.19	1.33	4.92	11.53	6.6	0.04	0.04
4	Price Shock	928	0.04	0.81	0.46	−4.35	3	7.35	−0.02	0.03
5	Polity	1,022	4.26	6.01	2.97	−10	10	20	−0.99	0.19
6	Log Nat. Disaster Deaths	1,062	3.53	2.75	3.3	0	12.53	12.53	0.05	0.08
7	PRIO Civil Conflict	1,062	0.01	0.12	0	0	1	1	8.22	0
8	Nearby Conflicts	1,062	0.35	0.75	0	0	6	6	3.22	0.02
9	Log Unemployment Rate	1,056	1.8	0.79	0.65	−2.04	3.62	5.66	−0.81	0.02
10	Log Population	1,053	16.68	1.42	1.48	11.35	21.05	9.7	0.49	0.04
11	Trafficking Tier	1,011	2.58	0.82	0	1	4	3	−0.48	0.03
12	Rule of Law	1,062	0.48	0.28	0.34	0.02	1	0.98	0.15	0.01
13	Access to Justice	1,062	0.65	0.24	0.23	0.03	1	0.96	−0.66	0.01
14	Social Protection/GDP	1,046	3.07	1.75	1.93	0.2	10.5	10.3	0.62	0.05

Note: Log Victims = natural logarithm of the number of detected victims in a given country-year. GDP shock = dummy variable indicating the presence of a negative GDP shock in a given country-year. Log GDPc = natural logarithm of GDP per capita. Commodity Price Change = variable quantifying the change in the export commodity price index. Log Nat. Disaster Deaths = natural logarithm of the number of deaths due to natural disasters. PRIO Civil Conflict = dummy variable indicating the presence of a civil conflict according to the PRIO database. Nearby Conflicts = dummy variable indicating the presence of a conflict in a neighboring country according to the Major Episodes of Political Violence database. Rule of Law = score (from 0 to 1) in the Rule of Law index of the V-Dem database. Access to Justice = score (from 0 to 1) in the Rule of Law index of the V-Dem database. Social protection/GDP = social protection expenditure as percent of GDP. Trafficking Tier = Tier in the State Department's TIP report, where a value of 1 corresponds to Tier 1, a value of 2 corresponds to Tier 2, a value of 3 corresponds to Tier 2 watchlist and a value of 4 corresponds to Tier 3.

Moderating variables

The analysis employs three institutional variables. These include two measures of governance institutions. The first is the Rule of Law index from the Varieties of Democracy (V-Dem) dataset, which captures each country's compliance with court decisions, transparency of laws, high court independence, and judicial accountability for misconduct (Coppedge et al. 2011). This measure proxies a state's overall commitment to promoting a society based on laws that uphold all citizens' right to redress from harm and precarity. The second variable measures the extent to which a country's citizens have access to justice. While the Rule of Law index measures the accountability of a country's elites, judges, and judiciaries, the Access to Justice variable—also from V-Dem—highlights the extent to which citizens are free to bring cases before *fair* courts without risk to their personal safety, and to seek redress if public authorities violate their rights. Together, the governance measures indicate whether a country adequately deters traffickers via the threat of prosecution, safeguards its citizens from the judicial malpractice that can fail to protect trafficking victims, and promotes an environment

that is conducive to economic development. While these measures could theoretically change over time, in practical terms these variables display little variation at the country level during the study period.

The third institutional variable measures a state's adoption of anti-trafficking policies via its rating in the US State Department's TIP report in a given year on a four-point (tier) scale: Tier 1, Tier 2, Tier 2 watchlist, and Tier 3. Countries in Tier 1 are defined as being fully compliant with all of the policy standards of the US Trafficking Victims Protection Act (TVPA) of 2000. Tier 2 countries do not fully comply with all TVPA minimum standards, but are making significant efforts to do so.

Tier 2 (watchlist) countries do not fully comply with the standards, but demonstrate a commitment to bringing themselves into compliance, and (a) their absolute number of identified trafficking cases is increasing or large and (b) they have not provided evidence of efforts to combat trafficking. Tier 3 countries do not meet the standards, and the State Department determines that they are making no effort to do so.

The variable on social assistance comes from ILO and measures the percent of a state's GDP that it spends on social protection policies. The relationship between spending on social protection and trafficking is vital to ascertain because it can help policy makers predict whether greater public sector spending on social assistance is likely to mitigate the effects of shocks on trafficking.

Control variables

As mentioned above, conflicts are expected to be associated with a higher incidence of trafficking. Conflicts increase desperation and precariousness, and therefore contribute to the risk of human trafficking. Clashes in nearby states are expected to increase the amount of trafficking observed between countries due to spillover effects, and because lawlessness in neighboring countries opens up smuggling routes for traffickers. This analysis measures conflict using data from: (1) the Peace Research Institute Oslo (PRIO), which records the occurrence of civil conflicts within a state in a given year and (2) the Major Episodes of Political Violence database, which indicates the number of adjacent conflicts for each country-year.

Severe natural disasters are expected to have a similar effect as conflict on trafficking. The analysis accounts for this likelihood by controlling for the natural log of the number of natural disaster deaths in a given country-year from the International Disaster Database. This is a good proxy measure for the physical devastation and societal disruption that can increase the risk factors associated with both migration and trafficking (Drabo and Mbaye 2015).[16]

Estimation Strategy and Results

A two-way fixed-effects estimator—for country of citizenship and year—is used to adjust for unobserved unit- and time-specific confounders (year fixed effects

account for any common shocks that influence trafficking risks, such as a global economic downturn). This is the conventional method for estimating causal effects from panel data. Two-way fixed-effects models are especially powerful for identifying the impact of relatively large discrete changes—to GDP, commodity prices, or a country's level of violence. Annex A presents the estimating equation in detail and discusses the possible threats to econometric identification.

Results
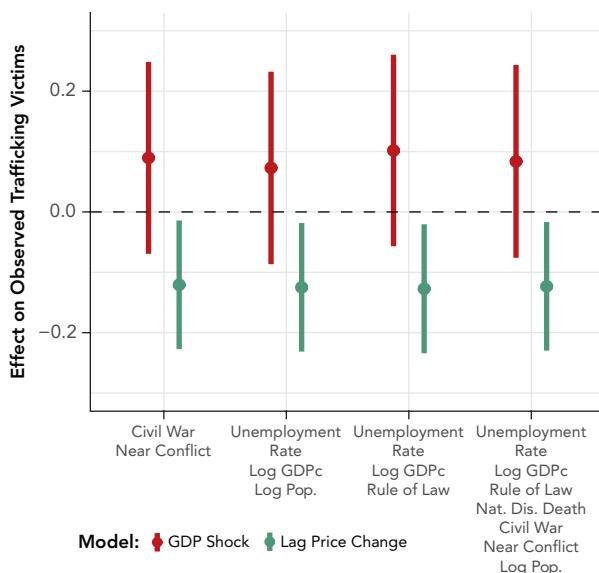
Economic shocks—measured either as a plausibly exogenous commodity price change or a large negative change in GDP—are key factors in the incidence of trafficking from and within origin countries. The effects are large. A one-standard-deviation increase in the (weighted) average prices of a country's main export commodities (a positive economic shock) is associated with a 12 percent decrease in trafficking cases the following year, compared to the overall mean trafficking caseload. Correspondingly, a large decrease in a country's per capita GDP (a negative economic shock, as defined above) is associated with a roughly 8 percent *increase* in trafficking cases the following year, compared to the overall mean trafficking caseload. However, the GDP shock effect is not statistically significant in the main specification but, as explained below, it is statistically significant once institutional variables are included as moderating factors. Figure 3 reports the regression results, presenting the two relationships of interest: the effects of (a) export commodity price shocks and (b) GDP shocks on observed trafficking victims. Importantly, it shows how these relationships remain stable across multiple model specifications (economic variables only, natural disaster/conflict, economic/rule of law, and full specification).[17] Annex B, Table 3 reports the full results and includes both fixed-effects (country and year) and random-effects specifications.

For the two measures of income shock—to commodity prices and per capita GDP—there is almost no difference across all specifications and modeling approaches, which

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16. Separate analyses are also estimated using two other measures of natural disasters: (1) the natural log number of people requiring immediate assistance during an emergency (i.e., basic survival needs such as food, water, shelter, sanitation, and immediate medical assistance) and (2) the natural log amount of damage to property, crops, and livestock. In all cases, the main results hold.

17. Including two additional control variables, population and logged and lagged unemployment, does not affect the base model results.

FIGURE 3. **Coefficient Plot of the Effect of Price Changes and GDP Shocks on Registered Trafficking Victims from and within the Origin Country**

Note: This figure plots the coefficient estimates of the effect of per capita GDP shocks (in red: a positive shock indicates a strong decrease in GDP) and commodity price changes in the previous year (in green: a positive value indicates an increase in export commodity prices, which is understood as a positive economic shock) on the log number of registered trafficking victims, by specification model. The round marker indicates the point estimate and the bar spreads over the 95 percent confidence interval of the estimation. All models are estimated with two-way fixed effects, with standard errors clustered by country of citizenship. This figure shows that the estimates for the two measures of income shocks, commodity price shock changes (lagged one year) and per capita GDP shocks, are consistent across all models and specifications (the expanding list of control variables in each model specification is depicted on the x-axis). While the commodity prices measure is statistically significant across all models, the GDP per capita shock variable is not (even though the substantive effect size is rather similar).

is consistent with the study's contention that these are largely exogenous factors. However, there is a large amount of uncertainty surrounding the precise magnitude of the GDP shock effect, and this effect is not robust.[18]

Robustness Checks

As a robustness check, Table 4 in Annex C estimates a similar model using data from the Walk Free Foundation as an alternate measure of the dependent variable.[19] The coefficients for economic shocks and per capita GDP are in the same direction as those in Table 3. The variables measuring shocks to commodity prices and per capita GDP are unfortunately underpowered, given that the data from the Walk Free Foundation is composed of data from only one year. Substantively consistent results are also obtained using a similar but distinct victims of human trafficking dataset compiled by Liberty Shared.[20] This dataset tracks trafficking flows over a shorter period, and across fewer countries than IOM's data.[21]

Heterogeneous Effects: The Moderating Effects of "Good Institutions"

The main analysis shows that plausibly exogenous variation in economic conditions—caused by price shocks or downward shocks to the overall economy—is a consistent and robust predictor of observed trafficking levels in origin countries. This result corroborates prior work on the economic drivers of human trafficking (e.g., Di Tommaso et al. 2009; Dottridge 2002; Howard 2014).

This section uses the framework described above to test whether governance institutions and anti-trafficking policy adoption moderate the effects of economic conditions on human trafficking. This additional analysis focuses on the binary GDP shock measure, which is not statistically significant in the main specification. Three mechanisms are explored. The first is anti-trafficking policy

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18. This pattern is unsurprising for two related reasons. First, the research design used here relies on an unbalanced panel, which raises concerns about the use of unit fixed effects. Many countries in the sample only have observed victims in a small number years, which reduces the precision of the estimates. Second, levels of per capita GDP vary little within countries. Building a GDP shock variable based on this relatively stable measure (year over year) generates unstable estimates because most of the relevant variation in GDP per capita reflects cross-sectional differences. The next section addresses these concerns by investigating how political institutions moderate the effect of GDP shocks on observed trafficking victims. This analysis corroborates these effects.

19. The national estimates of the Walk Free Foundation were calculated for 167 countries using individual- and country-level risk factors of modern slavery. The estimates draw on data from nationally representative surveys implemented through the Gallup World Poll; data from the GSI Vulnerability model, which maps risk variables across five dimensions (governance issues, lack of basic needs, inequality, disenfranchised groups, and effects of conflict); and variables that predict confirmed cases of forced labor and forced marriage.
20. These results are available upon request.
21. The Liberty Shared dataset includes data on 74 countries for 2016–2020, while IOM's dataset covers 130 countries for 2002–2018.

adoption, which is assessed by leveraging variation in origin-country TIP report ratings. This variable should be interpreted with caution, since adopting anti-trafficking laws is not randomly assigned and the measure itself may be endogenous by design since changes in reported human trafficking caseloads are part of the TIP's evaluation of countries. The second mechanism is the rule of law, and the third is citizens' access to justice.

As expected, there are fewer trafficking cases in Tier 1 countries (Table 2). However, there are no differences in the number of trafficking cases in countries in Tier 2, Tier 2 (watchlist) and Tier 3, suggesting that the classification is driven more by anti-trafficking policy mandates than actual numbers of detected trafficking cases.

To test whether governance institutions mitigate the negative effects of an economic downturn, the next step is to estimate regression models that interact the economic downturn variable described above with institutional variables from V-Dem and the TIP ratings. For ease of interpretation, the benchmark regression in this analysis uses GDP shock as the main variable capturing the economic downturn, although the results are similar when using the commodity price shock variable. Table 5 in Annex D reports the results of a standard linear interactive effects model. In each case, the GDP shock variable is interacted with each of the four institutional variables to determine whether good governance institutions and specific institutional commitments to reduce trafficking moderate the effect of economic downturns on the number of observed trafficking victims. These variables are included in the analysis at their value in the present
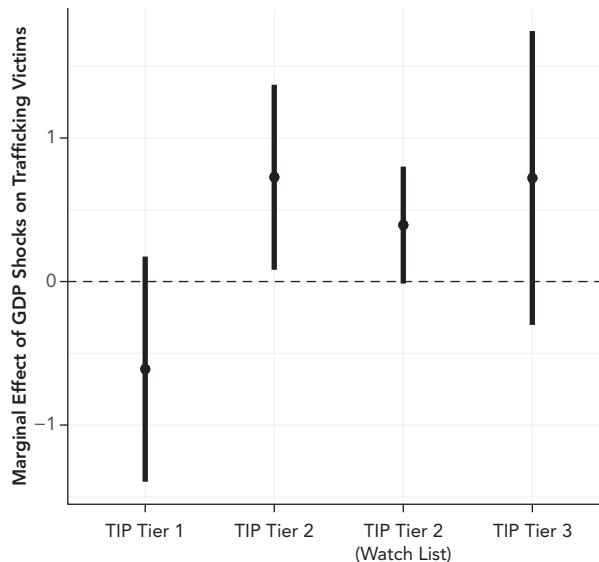
TABLE 2. **Average Number of Log Trafficking Victims across Trafficking Tiers, Pooled over Time and by Country of Citizenship (Origin)**

Trafficking Tier	Average Log Victims
3	2.34
2 'Watch List'	2.36
2	2.39
1	0.85

year. Standard errors are clustered at the country level, and the main results are robust with and without two-way fixed effects. Consistent with expectations, the adoption of anti-trafficking policies and stronger institutions that protect citizens' access to justice and the rule of law mitigate the increase in trafficking cases associated with negative economic shocks. The results also suggest that government expenditure on social protection programs mitigates the effect of negative GDP shocks.

The analysis reveals that adopting policies to combat trafficking moderates the effect of negative GDP shocks (Figure 4). Using the model estimates shown in Table 5 in Annex D, the average marginal effect of negative GDP shocks on the number of observed trafficking victims is calculated for each trafficking tier. Countries in Tier 2, Tier 2

FIGURE 4. **Average Marginal Effect of Negative GDP Shocks on Registered Victims for Each Trafficking Tier**

Note: This figure plots the coefficient estimates of the effect of per capita GDP shocks on the log number of registered trafficking victims for each TIP rating tier. The round marker indicates the point estimate and the bar spreads over the 95 percent confidence interval of the estimation. The x-axis, the TIP tier rating, varies from Tier 1, which indicates that a country is compliant with the policy standards of the Trafficking Victims Protection Act of 2000 to Tier 3, which indicates that a country does not meet the standards and is making no effort to do so. This figure shows that GDP shocks have a positive effect on observed human trafficking in countries that the TIP assessed as having the lowest commitment to combating trafficking (although not statistically significant) and those in Tier 2 and Tier 2 (Watch List).
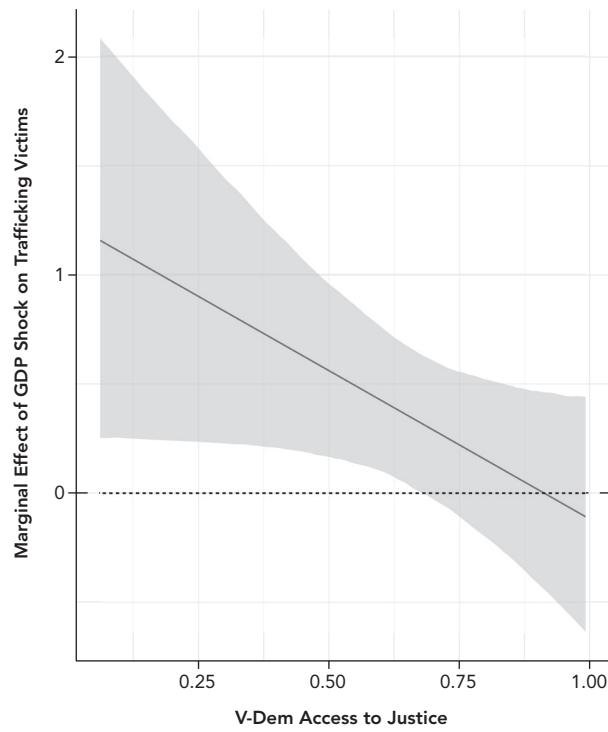
(Watch List) and Tier 3 exhibit a positive association between negative GDP shocks and the number of observed victims. The marginal effect is greatest (in magnitude) among Tier-3 countries, though this effect is not statistically significant at conventional levels. Importantly, such a relationship is not found for countries in Tier 1, which suggests that anti-trafficking measures may counterbalance the possible negative impact of GDP shocks on the incidence of human trafficking. These results do not, however, reveal which specific aspects of anti-trafficking policies moderate the effect of shocks.

Features of governance institutions that provide individual protections against abuses of power, such as the rule of law, are expected to influence the relationship between economic shocks and trafficking. The interaction model from Figure 4 was replicated to investigate more specific moderating effects of governance institutions on trafficking using the *Access to Justice* and *Rule of Law* measures from the V-Dem project.
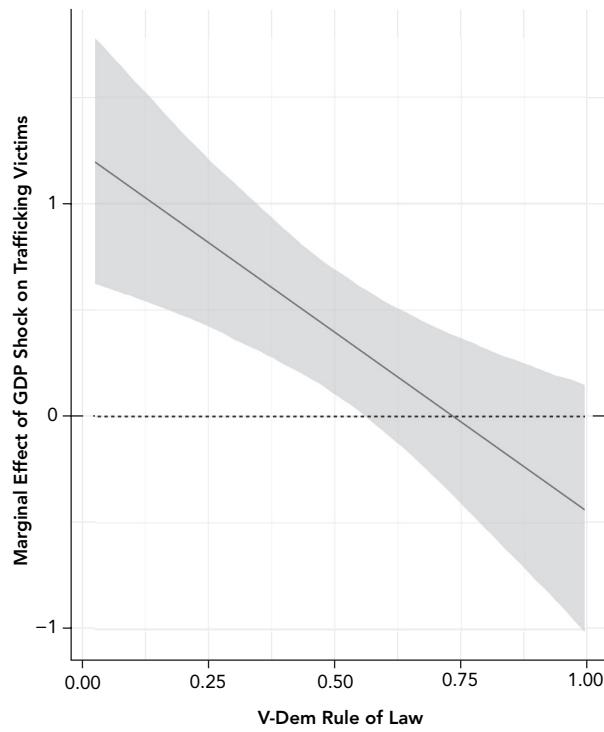
The results provide evidence that negative GDP shocks have a negligible effect in countries that have a greater institutional commitment to the rule of law and that provide greater access to justice. Economic downturns have strong, significant, and negative effects on the observed number of trafficking victims in countries that lack access to justice (Figure 5) or the rule of law (Figure 6). Ultimately, negative GDP shocks have a negligible effect on the number observed trafficking victims in countries with strong governance institutions.

FIGURE 5. Access to Justice

Note: This figure plots the marginal effect of per capita GDP shocks on the log number of registered trafficking victims for every level of the V-Dem Access to Justice score. The solid line indicates the point estimates and the shaded area highlights the 95 percent confidence interval of the estimation. The x-axis measures whether citizens enjoy secure and effective access to justice. Higher values indicate that citizens enjoy greater access to justice.

FIGURE 6. Rule of Law
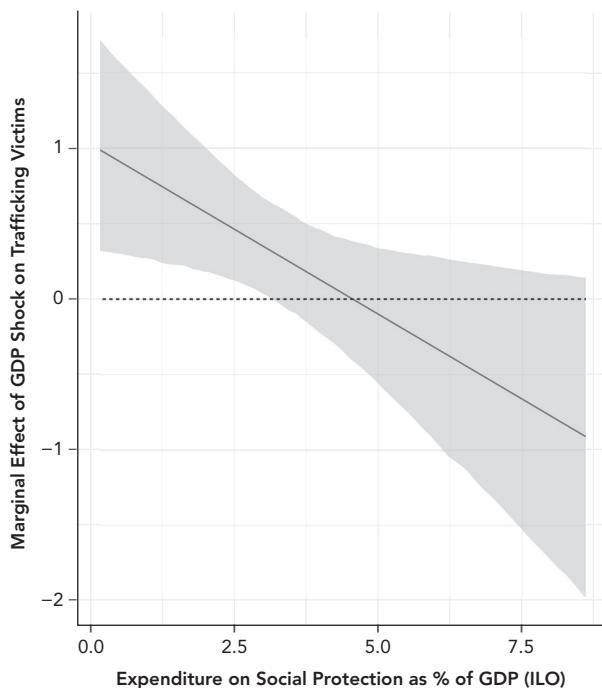
Note: This figure plots the marginal effect of per capita GDP shocks on the log number of registered trafficking victims for every level of the V-Dem Rule of Law score. The solid line indicates the point estimates and the shaded area highlights the 95 percent confidence interval of the estimation. The x-axis measures the degree to which laws are transparently, predictably, impartially, and equally enforced and the extent to which the actions of government officials comply with the law. Higher values indicate stronger rule of law institutions.

Figure 7 illustrates the link between (1) how much a country spends on social protection programs as a percentage of its GDP (based on ILO data) and (2) the effect of negative GDP shocks on observed trafficking. The result illustrates that economic shocks have very little impact on human trafficking in countries with high levels of social assistance. However, in countries with low levels of social protection expenditure, economic shocks are associated with more reported human trafficking cases. This result is meaningful because it supports the presumption that government expenditure on social assistance mitigates the negative effects of negative economic shocks on human trafficking.

Therefore, while economic downturns make individuals more vulnerable to human trafficking, good governance institutions—ones that adhere to the rule of law and access to justice, and stricter anti-trafficking policies—can mitigate these negative effects. Government social assistance can also make vulnerable individuals exposed to shocks less likely to be trafficked. These findings contribute to policy debates about the efficacy of adopting anti-trafficking measures, improving broader governance institutions, such as the rule of law and access to justice, and providing targeted social assistance to vulnerable households during economic crises.

**FIGURE 7.   Social Protection Expenditure (as a Percentage of GDP)**

Note: This figure plots the marginal effect of per capita GDP shocks on the log number of registered trafficking victims for every level of expenditure on social protection (expressed as a percentage of GDP). The solid line indicates the point estimates and the shaded area highlights the 95 percent confidence interval of the estimation. The x-axis refers to the amount a state spends on social protection programs. Higher x-axis values indicate greater proportions of spending.

6. Conclusion

Human trafficking is a criminal, as well as a social and economic, problem that deprives millions of individuals each year of their fundamental human rights. The scale of trafficking is immense, and despite the ubiquity of the practice and its impact on victims and economies, little rigorous systematic quantitative research has been conducted on the drivers of human trafficking, partly due to its less visible nature. Knowledge gaps constrain governments in countries of origin and exploitation from designing and implementing appropriate policy interventions to reduce trafficking. They also limit the ability of other anti-trafficking actors—including international organizations, NGOs, and donors—to help governments mitigate the risks of human trafficking.

This report leverages access to novel data on human trafficking victims from IOM and provides consistent and robust evidence that economic shocks are risk factors that increase vulnerability to human trafficking. Economic vulnerabilities are positively correlated with the number of detected human trafficking cases. Yet, descriptive evidence suggests that good governance institutions and particularly a commitment to the rule of law and access to justice as well as stricter anti-trafficking policies can have a limiting effect on the number of observed cases of trafficking following economic shocks. While the report identifies limitations of the underlying human trafficking data, re-running the analysis using data from the Walk Free Foundation and Liberty Shared generated consistent results, which provides additional out-of-sample support for the main result that economic shocks predict human trafficking flows. As one of the most thorough empirical analyses of human trafficking conducted to date, this report fills an important knowledge gap.

This analysis is designed to inform and support a robust research agenda on human trafficking to help better understand the micro-level risks and drivers of (and the mitigation strategies that are likely to reduce) trafficking. While the study sheds light on the micro-level drivers of trafficking, it does not explain trafficking routes, individual-level risk factors, or which interventions are likely to reduce the practice. Given the data limitations, more confirmation is also needed on whether the results apply outside IOM's sample.

More comprehensive data collection on human trafficking will aid future research efforts, governments, international organizations, and NGOs that are seeking to combat trafficking and support victims, as well as businesses seeking to ensure that their supply chains are free of human trafficking. This study leverages the most complete set of data on human trafficking that is currently available, representing years of tremendous international effort. More complete data from more organizations on victims' destination countries, ages, and the timing of the initial trafficking event will enable researchers to examine a host of questions associated with the demand side, or pull

factors, of human trafficking. For example, do a destination country's institutions (i.e., legal frameworks, labor requirements, and enforcement of anti-trafficking policies) affect the prevalence of human trafficking? Are violent conflicts within or near states associated with high levels of trafficking between states? What other types of events are likely to push victims into trafficking and affect how long they spend in a trafficking situation? This data (i.e., victims' ages, date of the initial trafficking event, and destination countries) can be collected through IOM's case management forms. However, it cannot always be collected from victims and/or recorded by case workers. The primary role of the case worker is to provide assistance to the victim, not to collect data. The collection of many of these data points is not essential for the provision of individual protection and support services, even if they are useful for evidence purposes. A balance must be struck: reducing the length of the intake questionnaires may reduce missingness in the data, at the cost of lost information. Investing more resources in information management and data entry should also reduce missingness in the data.

The findings suggest that COVID-19-induced economic shocks are likely to increase vulnerability to human trafficking (see UNODC 2021). The economic devastation resulting from COVID-19 is heavily impacting the most vulnerable in the global economy—those working in the informal sectors, many of whom have no access to social protection systems. COVID-19 could increase the risk of cross-border trafficking from, and internal trafficking within, poor countries that are experiencing high levels of unemployment and/or sharp reductions in remittances. Governments have been forced to shut down economic activities to curb the transmission of the virus, which has generated increasing levels of unemployment and induced a global recession.[22] The closure of borders to prevent the spread of the disease is depriving an enormous number of households of a main source of funds—remittances sent by migrant workers and income from seasonal migration. By decreasing the usual legal and safe migration routes, border closures could increase the risk of trafficking in some contexts by making migrants more likely to

seek irregular migration routes (UNODC 2021). Without the protections of formal migration, migrants run the risk of being trafficked across borders (Tinti and Reitano 2018). Qualitative evidence from the Global Financial Crisis of 2007–2010 suggests that trafficking victims from some countries that were particularly impacted by long-lasting high unemployment rates were increasingly detected in other parts of the world.[23] Thus, post-COVID-19 recovery plans must ensure safe avenues for regular migration and inform at-risk communities of the precautions they should take when migrating and accepting work. While many policy makers and researchers view migration and human trafficking as separate issues, they are closely related: providing safe channels for people to pursue their right to work and travel within states and across borders reduces the risk of human trafficking and generates more taxable income for governments and remittances for households.

To mitigate the risk that the poor and vulnerable will turn to high-risk sectors or countries for employment during economic crises, governments should prioritize the provision of social assistance, including to identified victims of trafficking, as well as access to basic services and livelihoods opportunities for vulnerable populations. The report's findings demonstrate that social assistance can help vulnerable households cope with negative shocks and avoid being forced to take grave risks that may result in becoming a victim of human trafficking. Such social assistance can include cash, in-kind goods such as food aid, agricultural inputs, wireless internet access, and employment opportunities. Countries that are highly vulnerable to economic shocks (and to natural disasters, climate shocks,and conflict) should invest in identifying who is most vulnerable to trafficking and in making their social assistance systems more adaptable to help vulnerable members of society cope with crises.

Governments can also reduce human trafficking by strengthening their governance institutions (i.e., rule of law, access to justice, and anti-trafficking policies). These

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22. The IMF (2021) estimates that the global economy contracted by 3.1 percent in 2020.

23. A recent research brief by UNODC (2020) provides retrospective data on the impact of the Global Financial Crisis on trafficking victims from Eastern Europe.

efforts would require governments to strengthen and enforce anti-criminal and anti-trafficking laws, provide victims with access to legal services and justice, and prosecute traffickers. Evidence from research on gender-based violence suggests that opening centers dedicated exclusively to victims' access to justice both improves the identification of victims and reduces the incidence of that specific type of crime (Sviatschi and Trako 2020). A similar approach could be adopted for human trafficking victims. In terms of policies designed to deter traffickers, the broad view from past research on crime suggests that the magnitude of deterrence is increased more by raising the probability of capturing criminals than by making the sanctions they would face more severe (Chalfin and Mc-Crary 2017). Thus, governments should focus their law enforcement efforts on better policing rather than exclusively on introducing tougher sanctions for traffickers. Cross-border trafficking nevertheless requires a concerted effort across countries. Enforcing anti-trafficking laws in one jurisdiction could divert trafficking to a neighboring district; thus regional cooperation is needed to combat the practice. Policy responses to human trafficking should be understood as part of states' broad, legal obligation from a human rights point of view. International treaties and laws obligate states to identify victims of trafficking and to provide them with immediate protection and support, legal assistance, temporary residency, and effective remedies, and to avoid criminalizing them (OHCHR 2014). International law supports a standard of "safe and preferably voluntary return" for trafficked persons, meaning that states should not return them to unsafe countries of origin. Although this report highlights the importance of rule of law institutions and anti-trafficking policies, more evidence is needed to determine what interventions work best to prevent human trafficking, protect victims, and prosecute traffickers (Bryant and Landman 2020; Davy 2016).

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Annexes

Annex A: Estimation Strategy

The objective of the empirical analysis is to understand the relationship between economic shocks and the key outcome of interest—the total number of registered trafficking victims (in natural log) originating from a certain country in a given year. It was not possible to include both origin and destination countries in the analysis for two reasons. First, including both in the same regression would introduce high levels of collinearity as these are the same for 20 percent of the cases in the database. Second, of the 50,000 cases in IOM's database, roughly 70 percent contain both departure and destination information, while there is very little missing data (fewer than 0.7 percent of cases) on victims' origin countries as it is a compulsory field in the database. Victims' departure cities are only available for fewer than one-third of the cases in the database.

A two-way fixed-effects estimator—for country of citizenship (c_i) and year (γ_t)—is used to adjust for unobserved unit- and time-specific confounders (year fixed effects account for any common shocks that influence trafficking risks, such as a global economic downturn). This is the conventional method for estimating causal effects from panel data.

The main analysis estimates several versions of the following regression model:

$$\begin{aligned} log\big(RegisteredVictims_{i,t}\big) \\ = \beta_0 + \beta_1 EconomicShock_{i,t-1} + \beta_2 Polity_{i,t} + \beta_3 NatDisasterDeaths_{i,t} \\ + \beta_4 CivilConflict_{i,t} + \beta_5 NearbyConflict_{i,t} + c_i + y_t + \varepsilon_{i,t} \end{aligned}$$

Two-way fixed-effects models are especially powerful for identifying the impact of relatively large discrete changes—to GDP, commodity prices, or a country's level of violence. However, these models are not necessarily efficient at detecting the effects of variables that change little over time (such as GDP per capita levels). Moreover, IOM's dataset is an unbalanced panel; several origin countries have few observations. To investigate the stability of the results given these circumstances, the same models are run with random effects (random intercept) for country and year to partially pool across clusters. Note that while the fixed-effects models difference out unobserved time-invariant factors (such as land mass, ethnic diversity, or proximity to potential destination states), this is not the case in random-effects models. These models assume that such unobserved factors are not correlated with the input variables. In both model specifications, heteroskedasticity-robust standard errors (clustered by country) are calculated.

This analysis would ideally be conducted on three different samples—the full data, internally trafficked victims, and externally trafficked victims—to determine whether certain factors affect all types of trafficking. However, the sample cannot be split due to data limitations. While there is little missing data on victims' country of origin, the missingness on victims' country of exploitation requires over 15,000 cases to be dropped, which would introduce bias into the analysis.

Explanatory variables and threats to identification

Two different approaches are used to measure economic shocks. The first is a GDP shock measure that captures whether a country has experienced a sharp decline in its economic production; it assesses a state's relative (rather than absolute) well-being. To create the GDP shock variable, the change in GDP is calculated for each country-year ($GDP_t − GDP_{t-1}$); a change that falls within the 15 percent largest decreases in GDP among all countries in the sample for the period of analysis is defined as a GDP shock (Nielsen et al. 2011, 224). Since this growth shock is realized contemporaneously, the analysis focuses on the present country-year.

Measures of GDP shocks may be correlated with the identification of, or provision of services to, victims of human trafficking, which could incorrectly inflate the estimates. IOM and other organizations may more actively pursue counter-trafficking activities in countries with weak growth or strong, negative GDP shocks. The organizations that contribute to the dataset on human trafficking might receive more funding and/or scale up operations in countries with consistently weak economic growth or shocks. If this is the case, the correlation between GDP shocks and trafficking would be larger than the true value that would be recovered if all trafficking victims could be logged (i.e., a case with no measurement error). However, the scaling up of the capacity to identify and protect victims of trafficking tends to take place incrementally and over a long period of time. Funding for counter-trafficking activities is rarely included as part of humanitarian response funding cycles. In addition,

emergency funding does not often flow to countries experiencing economic shocks unless the shocks create or are linked to a wider humanitarian crisis. Because counter-trafficking organizations are difficult and costly to establish, it is unlikely that the otherwise unpredictable GDP shock specifications would be impacted by this source of bias.

The second measure is changes in the price of the country's export commodities, which builds on Bazzi and Blattman's measure (2014). This measure factors in changes in prices across several classes of commodities as well as the share of each commodity class exported in a given country-year.[24] It excludes commodities for which the country is a price maker. The measure is the log shift in each country's commodity export price index normalized by GDP (($\text{logprice index}_t − \text{logprice index}_{t-1}$) × (total value of exports/GDP)). It is standardized to have a mean of 0. Since these international price shocks may not fully impact price takers until the following year, the price shock measure is lagged by one year. This approach extends influential work on localized economic shocks, including Dube and Vargas (2013) and Berman et al. (2017), which leverage unexpected changes in global commodity prices. Importantly, because the measure only exploits variation that is *not* driven by the country of interest, it is exogenous to local economic production, which can be influenced by political instability, economic distress, or natural disasters—factors that may affect local trafficking risks. Similarly, it would be very implausible for organizations to scale up their human trafficking related activities in a given country in response to a commodity price shock occurring in another country, to the exclusion of the citizens of the former. Because the measure of price shocks is highly unlikely to be correlated with these potential confounding factors, the estimated effect on the number of registered victims is understood to be credible.

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24. The index weights the commodity price shock by the average ratio of commodity exports to GDP in 1978–82, following Bazzi and Blattman (2014). This ensures that the weight is exogenous to current commodity price levels, and prevents the index from overweighting commodity price increases and underweighting commodity price decreases. The 1978–82 reference period is used for comparability with the academic literature using the same variable.

Annex B: Main Results

TABLE 3.   Main Regression Results

	Log Victims			
	(1)	(2)	(3)	(4)
Lag Price Change	−0.124**	−0.109**		
	(0.055)	(0.051)		
GDP Shock			0.076	0.087
			(0.084)	(0.094)
Unemployment Rate	−0.153	−0.204*	−0.158	−0.215*
	(0.259)	(0.120)	(0.261)	(0.120)
GDPc	0.142	−0.163*	0.152	−0.155*
	(0.362)	(0.094)	(0.375)	(0.094)
VDEM Rule of Law	0.515	−0.708*	0.448	−0.744*
	(0.968)	(0.427)	(0.989)	(0.428)
Nat. Dis. Deaths	−0.051	−0.057**	−0.052	−0.059**
	(0.034)	(0.024)	(0.034)	(0.024)
Civil Conflict		0.032	0.008	0.028
		(0.368)	(0.435)	(0.369)
Nearby Conflict	−0.001	−0.033	0.003	−0.038
	(0.103)	(0.077)	(0.104)	(0.077)
Log Population	1.931	0.138	1.847	0.148
	(1.328)	(0.098)	(1.380)	(0.098)
Constant		1.560		1.348
		(1.757)		(1.759)
Fixed Effects	X		X	
Random Effects		X		X
N	920	920	919	919
R^2	0.750		0.748	
Adjusted R^2	0.708		0.706	
Log Likelihood		−1,524.291		−1,524.269
Residual Std. Error	1.095 (df = 788)		1.100 (df = 786)	
AIC		3,072.582		3,072.537
BIC		3,130.475		3,130.416

*p < 0.1; **p < 0.05; ***p < 0.01. Standard errors are clustered by country of citizenship.

Annex C: Walk Free Foundation Data

TABLE 4. Partial Replication of Table 3 using Data from the Walk Free Foundation

	Log Victims	
	(1)	(2)
Lag Price Change	−0.315	
	(0.219)	
GDP Shock		0.075
		(0.305)
Unemployment Rate	−0.190	−0.226
	(0.162)	(0.168)
GDPc	−0.141	−0.144
	(0.119)	(0.124)
VDEM Rule of Law	−1.515**	−1.195**
	(0.608)	(0.586)
Nat. Dis. Deaths	0.335***	0.344***
	(0.051)	(0.052)
Constant	12.700***	12.543***
	(0.949)	(0.964)
N	60	60
R^2	0.507	0.489
Adjusted R^2	0.462	0.442
Residual Std. Error (df = 54)	0.977	0.995

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$. Standard errors are clustered by country of citizenship.

Annex D: Unpacking the Effect of Institutions

TABLE 5. Governance Institutions Moderate the Negative Effect of GDP Shocks on Human Trafficking

| | Dependent Variable | | | |
| | Log Victims | | | |
	(1)	(2)	(3)	(4)
GDP Shock	1.296***	1.408*	1.179**	−0.610***
	(0.492)	(0.739)	(0.508)	(0.224)
Rule of Law	−2.146***			
	(0.596)			
GDP Shock X Rule of Law	−1.811***			
	(0.673)			
Access to Justice		−0.996		
		(0.639)		
GDP Shock X Access to Justice		−1.569*		
		(0.872)		
Expenditure on Soc. Prot.			−0.095	
			(0.080)	
GDP Shock X Expenditure on Soc. Prot.			−0.256**	
			(0.106)	
Trafficking Tier 2 Watch List				1.430***
				(0.424)
Trafficking Tier 2				1.303***
				(0.382)
Trafficking Tier 3				1.545***
				(0.555)
GDP Shock X Trafficking Tier 2 Watch List				1.337***
				(0.518)
GDP Shock X Trafficking Tier 2				1.004***
				(0.312)
GDP Shock X Trafficking Tier 3				1.332**
				(0.531)
Observations	920	920	917	886
R^2	0.169	0.062	0.058	0.125
Adjusted R^2	0.151	0.042	0.038	0.102
Residual Std. Error	1.868 (df = 900)	1.985 (df = 900)	1.989 (df = 897)	1.928 (df = 862)

Note: *p<0.1; **p<0.05; ***p<0.01. Standard errors are clustered by country of citizenship. Year fixed effects are included.