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Research Article

Global Flow of Foreign Aid and Change in Recipients' Local Labor Institutions

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How does foreign aid affect recipient countries' labor institutions? Extant empirical evidence is sparse due to ambiguous theoretical predictions and potential endogeneity issues. This study uses data detailing aid flow and institutional functions to mitigate such inconclusiveness and displays originality by constructing a concise theoretical framework in which foreign aid contributes to the improvement of the labor institutions in recipient countries through two mechanisms—economic growth purpose and expected aid attraction. The findings indicate that only aid to enhance local economic growth provides incentives to change domestic labor markets. Such effects have a more crucial influence on labor institutions of minimum wage, collective bargaining rights, and working hours than those related to hiring and firing regulations, mandated costs for worker dismissal, and conscription. For comparison with the actual aid level, we construct forecasted proxies to capture exogenous fluctuations in aid, determining that domestic labor markets can also change via a novel mechanism, as the recipient voluntarily mimics the funder's labor policies in anticipation of receiving future aid, with exact amounts derived from the noninstitutional characteristics of pairs of bilateral recipient and giver economies. Therefore, we provide policy implications for the aid giver on how to secure a continued and increased aid flow and for the aid receivers on which aspects of reforming measures are most effective in enhancing the labor market regulations.

1. Introduction

Existing literature has established several important results regarding the impact of foreign aid on the quality of domestic institutions. However, the question of whether foreign aid harms or facilitates recipient countries' labor market institutions has largely been overlooked, calling for further research detailing aggregate aid flow and disentangling institutions defined in a broad sense. This study focuses on identifying which types of aid could potentially exert significant influences on a range of labor market regulations promulgated with various intentions. It is essential to investigate such correlations because, as a complement to a capital shortage or limited commitment, aid is meant to function in conjunction with labor in producing aggregate outputs.

Our study not only narrows down the list of components in both aid flow and labor institutions that may interact with one another but also distinguishes between two distinct mechanisms through which international aids' institution-building effects operate. Specifically, while previous studies emphasize the mechanism by which existing aid projects induce local institutional change, we explore whether labor market regulations can be improved via a new mechanism—the recipient government voluntarily mimicking the funder's labor policies in anticipation of future aid, with the exact amounts predicted by exogenous characteristics between a recipient-giver country pair.

By conducting a comparative study of two mechanisms, we determine that only aid that is classified as targeting economic activities affects local labor institutions in both mechanisms. Compared with all other types of aid, such as initiatives with governmental, service, educational, and health purposes, economic growth-oriented aid provides considerably higher incentives for recipient countries to improve labor institutions before seeking aid overseas. More importantly, these labor institution-building effects have a significant positive impact on the labor market's hiring rules, minimum wage, centralized collective bargaining, and working hours regulations. Furthermore, labor institutions concerning conscription are significantly and adversely affected; however, this is not found for hiring and firing and the institutions' mandated costs of worker dismissal.

The aim of this study is, hence, twofold. First, we examine whether different types of foreign aid, such as economic, governance, services, and education, can have positive and real influences on the recipient country's labor institutions and the associated subdimensions. Second, we verify whether anticipated foreign aid instead of disbursed foreign aid can also have the same institution-improving effect. The achievement of these two research objectives constitutes a marginal contribution to the extant literature, as this paper confirms a novel channel through which domestic labor market regulations can be improved by foreign aid, i.e., the ex-ante anticipation channel.

Our study is motivated by two strands of emerging literature. The first strand examines the consequences of foreign aid and whether it can influence recipient countries' economic and political outcomes. Promoting economic growth is among the objectives of foreign aid; however, Boone [1] and Burnside and Dollar [2] find that it has failed to encourage recipient countries to adopt advantageous macroeconomic policies and has not boosted recipients' economic growth [3]. The empirical literature suggests that the global flow of foreign aid is primarily driven by the donor countries' strategic interests. Alesina and Dollar [4] show that instead of focusing on the development of recipients' economic needs and policy performance, donor countries predominantly use foreign aid for political and strategic purposes. At the margin, however, foreign aid encourages economic growth for recipients with good policies or institutions in place [2, 5]. Therefore, the global flow of foreign aid tends to result in countries with higher levels of democratization and openness [4]. Clist et al. [6] find that a country's effective governance can predict the possibility of receiving foreign aid. When two potential recipient countries suffer from a similar degree of poverty, foreign aid tends to flow to the country that was once the donor country's former colony.

Unfortunately, aid from the previous colonizers may have failed to promote recipient countries' economic growth. Foreign aid from the Nordic countries tends to improve recipients' local institutions, whereas foreign aid from the U.S. significantly reflects its interests in the Middle East [4]. Schraeder et al. [7] reject the rhetorical statements of policymakers that foreign aid only represents the altruistic foreign policy of donor countries. In contrast, Berthélemy [8] claims that altruism can be one of donors' motivations for foreign aid. In particular, Switzerland, Ireland, and the Nordic countries (except for Finland and Sweden) are found to be more altruistic than other donors. Winters and Martinez [9] found that bilateral donors prefer foreign aid to flow to programmatic and infrastructure aid for well-governed countries. For poorly governed countries, donors prefer to deliver aid through non-state actors [10]. Our study differs from the abovementioned studies in two aspects. First, we highlight the effects of foreign aid on a particular group of institutions (i.e., the labor institutions of labor policies and labor market regulations). This angle coincides with Chatterjee and Turnovsky [11], who explore the role of labor supply in linking aid flow and economic growth. In addition, to our knowledge, this study is the first attempt to compare the effects of actual and predicted aid flow on the establishment and enhancement of labor institutions in aid recipient countries.

Second, this study complements articles investigating the determinants or the formation of countries' labor institutions, such as Freeman [12]; Holmlund [13]; and Betcherman [14]. Many factors can potentially influence local institutions. Based on institutional theory, Ashworth et al. [15] and Akbar et al. [16] argue that institutional change can be induced if local institutions are seeking to gain legitimacy, political power, community support, and customer support. In Italy, intuitional performance is strongly affected by cultural factors. Specifically, for Italian regions that suffer from shortages of social capital, it is almost impossible for a local institution to achieve superior democratic performance [17]. Acemoglu et al. [18] demonstrate that population density and economic conditions affect local institutions in former European colonies. Colonizers generally established and developed large numbers of local institutions in areas with small population density and poor economic conditions, which affected local institutional development. Zielenkiewicz [19] asserts that sufficient food and drink supplies, safe sanitation, a longer life expectancy, clean air and water, higher educational rates, and improved gender equality and income distribution strengthen the development of local institutions. Sato et al. [20] propose the concept of emerging country donors and justify their behaviors using an institutional analysis. Moreover, these authors find that better environmental conditions help institutional development. A more recent strand of literature considers firm decisions, as a potential channel. For example, economic policy uncertainties may change firms' labor investment decisions [21]; firm accounting rule adoption affects foreign direct investment inflows [22]; and corporate environmental, social, and governance activities also generate economic consequences [23]. All these three firm-level influencing factors may collectively exert an impact on a country's overall institutional development.

The remainder of our paper is organized as follows. The next two sections first review the literature concerning the correlations between foreign aid and domestic institutional quality and then propose testable hypotheses. The Materials and Methods section details the empirical model adopted to investigate how foreign aid can boost the development of

different aspects of labor market regulations. We also introduce the data sources, describe the measures for projected aid inflow, present and discuss the baseline results, and run robustness tests. We finalize the study in the Conclusions.

2. Literature Review

This paper adds to a relatively sparse literature on linking aid flow with the institutionalization procedure, especially that highlighting labor rules. While most studies emphasize the causal relationships running from institutions to aid, we highlight the reverse direction, using predicted flow to mitigate potential endogeneity problems. When studies utilize the total amount of aid as a proxy for aiding strength, many scholars have found that simply increasing the amount of aid does not impose a significant effect on the quality of the overall institutions of the recipient country, including the labor system, and even sometimes can reduce the degree of the labor institutional quality. Bräutigam and Knack [24] determine that the manner in which foreign aid is delivered may have retarded local institutions' development. Increases in foreign aid are found to significantly diminish the quality of governance and exacerbate political violence via a decreased proportion of tax in GDP. The authors suggest that foreign aid should be delivered more selectively and competitively to improve local institutions and governance. Instead of treating a large amount of foreign aid as long-term, donors may consider developing an exit strategy for foreign aid. (An exit strategy refers to the donor informing the recipient that the foreign aid provided will be phased out at a certain time) Easterly [25] argues that foreign aid cannot improve local institutions when the institutions are historically rooted, as it is difficult for outsiders to understand existing social norms. Djankov et al. [26] find that when foreign aid accounts for a large proportion of a recipient country's GDP in the past five years, the country's democracy will be weakened, and rent-seeking activities are likely to be induced. In certain areas of sub-Saharan Africa, Casey et al. [27] conducted a study on a community-driven development project, which is supported by the World Bank in Sierra Leone. Mansuri and Rao [28] estimated that between 1999 and 2011, the World Bank spent around 54 billion U.S. dollars on the CCD program. The World Bank launched the GoBifo project, which cost 1,988,490 million U.S. dollars in Sierra Leone to advance local institutional development [29], finding that, although foreign aid could help build new village structures, improve local economic welfare, and increase stocks of public goods, it did not influence local institutions in the long-run. Asongu and Nwachukwu [30] and Riddell and Niño-Zarazúa [31] also find similar results of foreign aid affecting governance and education, respectively. Additionally, Knack and Rahman [32] reveal the phenomenon that a recipient institution's democracy is negatively associated with donor fragmentation (i.e., a large number of donors with smaller donations).

Lim et al. [33] explain why the increase in foreign aid may not help the reform of the labor institutions of the aid recipients from the perspective of "revenue substitution." Their argument goes as follows: For developing countries, exports bring them income, but if they want to trade more with developed countries, they need to produce in accordance with their standards, with the requirement of establishing a better labor institution included. But when there exists a larger amount of foreign aid, the aid recipient countries now consider these aids as other sources of income substitutable for trade income, leading to the so-called phenomenon of "trade income substitution," which reduces the pressure on trade partners' demand for quality domestic labor markets and regulations. Moreover, Boateng and Agbola [34] show that fluctuations in the amount of disbursed aid are detrimental to recipient countries' economic growth. This fact stands as opposed to promised aid, as promised aid forces recipients to make and keep their promises to improve the quality of institutions in every dimension, which will ultimately contribute to sustainable economic development. In other words, economies that want to receive aid in the future have incentives to improve their institutions in line with the promises made.

In contrast to the insignificance of the effect of total aid on institutional quality, several scholars have discovered a positive effect of aid on labor institutions when their research focuses on detailing aid into different types or decomposing labor institutions into subdimensions. Dunning [35] documents that foreign aid in sub-Saharan Africa has promoted institutionalization processes by improving local democracy, and the improvement of labor system regulations constitutes an important part of the whole institutionalization process in these countries. However, the positive correlation is sample period-sensitive and was only observed between 1987 and 1997. Jones and Trap [36] emphasize that different types of aid arrangements generate different institutional impacts, and they find that only those that are governance-based can exert a positive impact on the institutions of the aid-recipient country whereas the net impact of other types of aid is small. Clemens and Postel [37] and Dreher et al. [38] provide a line of reasoning from the perspective of aid economics and migration. Their reasoning reveals how foreign aid can positively affect a country's labor institutions by showing that an increase in the amount of economic aid increases the amount of migration from the aid-recipient country to the aid-giving country. This is because the aid raises local incomes; at this point, both the aid recipient, which wants to retain the high-income group, and the aid giver, which wants to minimize the inflow of immigrants, put in place policies and measures such as increasing wages and reducing labor hours so that potential immigrants will stay in their home countries. Maruta et al. [39] discuss the contribution of three types of aid to economic growth, namely educational, agricultural, and health aid. Over time, education aid has had the most significant impact on economic growth, and institutional improvements have played a mediating role, as increased education has made the labor force in the recipient country pay more attention to upgrading its property rights enforcement system. Effective institutions in turn guarantee economic growth. Institutions, in turn, guarantee a stronger economy. Pradhan et al. [40] explore the relationships between aid, innovation, and institutions. They argue that planners in

countries will give aid to recipient countries that have the willingness to improve their institutions. Following this logic, in order to get more aid for innovative activities, recipients are motivated to improve further private property rights as well as intellectual property rights.

As can be seen in the above literature, due to impediments caused by security [24], cultural [25], rent-seeking [26], and income [33] concerns, it is difficult to increase the amount of aid alone in a way that will hardly result in efforts toward a favorable labor or overall institution in the recipient country. However, when the aid purposely focuses on specific areas such as the economy, governance, or education, the dimensions of the labor market regulations such as wages, hours of work, and property rights will respond positively [37, 38], especially when recipients are eager to receive aid on a sustained basis. Recipients will be more motivated to improve their labor system because of the expectation [34, 40]. Nevertheless, there are aspects of existing research that lack in-depth analysis. On the one hand, the heterogeneity of the effects of different types of aid on different types of labor institutions remains unclear. On the other hand, as far as we know, there is no direct empirical evidence that aid expectations can drive the quality of labor institutions.

3. Theory and Hypotheses

3.1. Theoretical Foundations. Currently, theories about foreign aid can be divided into three groups according to the motivation for aid. The first group of theories is called "realism theory," which is put forward by Art and Waltz [41] from the perspective of realistic motivation. In other words, foreign aid is essentially characterized by realism, and the ultimate goal is for givers to achieve their own political or economic purposes. The second group is referred to as "altruism theory," which is emphasized by Azam and Laffont [42] in the field of foreign aid. They argue that many donors, especially international organizations like the United Nations, carry out aid with the aim of eliminating poverty and raising income and living standards around the globe. The last group of theories is coined "dependence theory." Wallerstein [43] also analyzes the foreign policy of the United States and suggests that many developing countries are at the low end of the industrial chain and need to rely on developed countries for further economic development. As a result, the developed countries are under obligation to provide the developing world with assistance in terms of funds, talents, and technology. This paper verifies the institutional enhancement effect of foreign aid by providing empirical evidence for the first group of theories because quality institutions are good for the protection of foreign investment and profit recovery.

The effect of expected aid identified in this paper can be traced theoretically back to Keynes' theory of expectations, which has been widely used in asset pricing and investment portfolios. E.g., the expectation of inflation reduces people's willingness to hold cash [44, 45]. Consistent with this theory, recipient countries' expectations of aid could change their decision-making behaviors as well. As many economic policies include reform measures concerning the labor market [46], recipient governments are incentivized to improve their labor institutions so that a continued and increased aid flow may be secured. The empirics of this paper can be seen as an attempt to apply the theory of expectations to aid economics.

On top of the above-mentioned theories on aid motivation, the first attempt to build a theoretical framework for empirical testing of the institutional effect of aid can be attributed to Brautigam [47] who argues that foreign aid would relieve binding revenue constraints; therefore, aid may improve the accountability of local institutions. Sachs [48] finds supportive evidence regarding how an extensive amount of foreign aid could help to build more developed institutions.

Compared to overall aid, aid with specific objectives tends to be more relevant and much more efficient [49]. Winters and Martinez [9] suggest that in cases where there are clear objectives for aid and if the recipient government is unable to fulfill its responsibilities, the donor country or agency may even choose a private party to complete the aid. Jones and Trap [36] also find that governance-based aid is mainly about addressing governance issues in the recipient country. Given that the donor is more familiar with the crux of the problem to be solved, the aid can achieve its goal more smoothly and efficiently, while other types of aid will not have a satisfactory outcome for the governance problems of the recipient country. Similarly, Maruta et al. [39] distinguish between the different effects imposed by three types of aid given for educational, agricultural, and health purposes. In these authors' view, different types of aid should be given to different recipient countries to produce the best consequences. For example, educational aid would be the most effective in South America, health aid would be the most effective in Asia, and agricultural aid would be more suitable for Africa.

In every economy, the superstructure is determined by economic fundamentals, and when a country's level of economic development is improved, the current quality and prospects of its institutions, including the set of labor institutions, will naturally attract the attention of the government and all sectors of society. Zielenkiewicz [19] asserts that sufficient food and drink supplies, safe sanitation, longer life expectancy, clean air and water, higher educational rates, and improved gender equality and income distribution strengthen the development of local institutions. Clemens and Postel [37] and Dreher et al. [38] explain the relationship between aid, development, and institutions from the perspective of migration. What they found is that aid with economic goals enhances the level of economic development of the recipient country, which raises a part of the people's income significantly. Then, if the institutional environment of the recipient country stays unimproved, these elites with a higher income will contemplate migrating to the aid-giving country. To prevent such a contemplation from coming true, both the recipient country that wants to retain the higher income group domestically and the aid donors that want to cut down the inflow of immigrants will introduce policies like increasing wages and decreasing labor hours to make the

immigrants stay in the recipient countries. When these higher-income elites stay, they will come up with the idea of working together to improve the quality of the institutions. Based on this reasoning, we summarize the theoretical routes by which foreign aid may improve domestic labor institutions in Figure 1 below. Hence, our findings imply that aid should first focus on specifying aid for different purposes such as economic, governance, or education. Next, it is imperative to carry out those types of aid with anticipated positive effects on the developmental factors of the recipient country, such as residential income, the degree of democracy, and human capital. Finally, local governments can begin to pay attention to the improvement of their labor system and institutions based on the increase in the level of economic development.

In addition to the aid disbursement mechanism, Boateng et al. [34] find that sometimes committed aid is more powerful than actual aid in motivating the government to improve domestic institutions. The underlying reason is that the aid decision is not transient. The actual disbursement of aid often fluctuates around the promised amount, leading to uncertainty in the effect of economic growth, while the promise of aid with preconditions motivates the recipient government to improve its institutional quality to receive aid. So, from the perspective of effectiveness, the expected aid is even more influential than the actual aid itself. Pradhan et al. [40] have also discussed similar logic in their in-depth study of the relationships between aid, innovation, and intellectual property rights institutions. In their study, aid, innovation, and institutions are causally related to each other. The argument is that aid policymakers in donor countries will deliver aid to recipient countries that voluntarily improve institutions in advance. Put another way, in order to get more aid to fuel innovation, recipient countries will have intrinsic reasons to improve their private property rights or intellectual property rights protection systems. Figure 1 provides an illustration of these potential mechanisms.

3.2. Hypothesis Development. Previous empirical studies on the impact of foreign aid on institutions simply match aggregate proxies of aid flow with selected measures to examine the quality of a destination country's economic and/or political institutions. However, the resulting estimated impact is essentially a combination of at least four specific impacts, each of which is further composed of multiple subeffects and constitutes an independent driver of institution-building motivations. First, the amount of foreign aid to a recipient country is calculated by summing the aid flow from all giver countries; thus, the identified effects are not giver country-specific. Second, aid flow may have distinct component effects on a range of unique institutions. Third, different types of aid flow may have various component effects on overall institutions. Finally, a particular type of aid may have different component effects on particular set institutions via at least two mechanisms. One operates through the channel of actual aid that has already been introduced into recipient countries. In this case, givers have incentives to press local governments to change labor institutions or even threaten to stop aid if recipient governments refuse to reform. The other mechanism operates through the incentives for the local governments themselves to improve institutional quality in labor markets. This improvement is conditional on future expectations of aid formed by the recipient country and the characteristics of the giver countries.

An aid giver that makes donations to multiple countries may have the same incentives to persuade all recipient countries to improve labor market institutions. In contrast, if recipient countries believe that future aid cannot be procured, there would be no incentive to transform labor institutions to a level closer to the donor's expectations of labor market institutions.

Therefore, in our study, we construct a sample of bilateral aid by selecting countries that gave or received aid at least once during the sample period and pairing giver—recipient combinations (but not two giver countries) to obtain recipient—giver observations. Our effort to identify the second integrated effect leads to the following hypothesis:

Hypothesis 1. Aid flow can impose significantly positive effects on local labor institutions, which are defined as encompassing a range of domestic labor policies and domestic labor market regulations.

Given our focus on labor institutions, detailing the third integrated effect leads to the following hypothesis:

Hypothesis 2. Compared with other types of aid flowing to political, services, education, and health sectors, aid flow aiming to promote local economic growth has a much more significant impact on local labor institutions.

Hypothesis 3 relates to our conjecture regarding the new mechanism of aid potentially causing institutional change, asserting that recipient countries with a higher probability of attracting foreign aid will improve labor institutions more. Furthermore, after categorizing complicated labor market regulations into six pillars, by definition, labor market regulations regarding firing workers should not align with the purpose of aid. As a result, we developed our final hypothesis as follows:

Hypothesis 3. The labor institution-building effect of predicted aid flow is significantly positive, and the effect is larger in magnitude and significance for labor institutions related to hiring decisions, minimum wage, hours of work, collective bargaining, and conscription than those related to worker dismissal and associated firing costs.

4. Methods

To test the above hypotheses, this study builds a measure to capture the extent of aid a country would have been able to receive, comparing its power to that of the actual aid flow received to explain global institutional labor fluctuations. We further examine how both measures affect different types of labor market regulations correlated with aid campaigns. In summary, we estimate the following equation by pooling

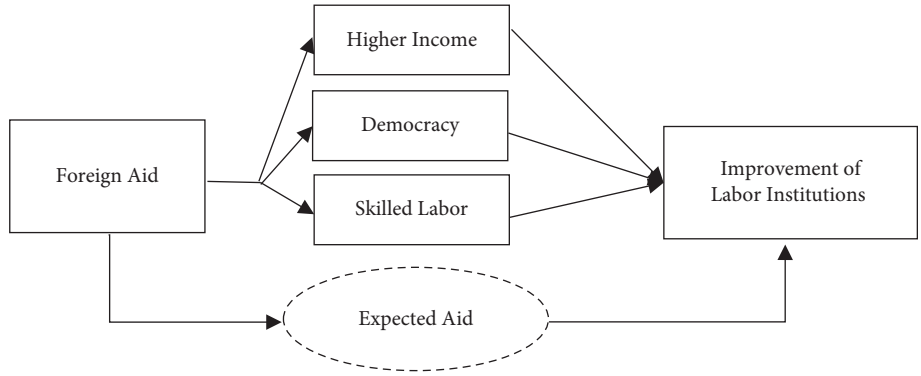

Figure 1: Mechanisms of foreign aid affecting labor institutions.

ordinary least squares (OLS), fixed effect, and random effect specifications with 4,298 pairs of recipient—giver countries over the period 1980–2013:

$$\text{LaborInst}_{ijt} = \alpha + \beta \text{Aid}_{ijt} + \boldsymbol{\gamma}\mathbf{X}_{jt} + \mathbf{Pair}_{ij} + \mathbf{Year}_t + u_{ijt}. \quad (1)$$

The dependent variable (LaborInst_{ijt}) is the labor institutional quality of aid recipient country j in year t, normalized by that of the aid giver country i, and computed based on a chosen measure of labor institutions. The independent variable of interest (Aid_{ijt}) is a measure of the bilateral aid flow between aid recipient country j and aid giver country i in year, representing either the actual or predicted aid flow. The predicted aid measure can be interpreted as the likelihood of a country receiving aid when givers consider its institutional fundamentals and labor markets to be ready for foreign aid. As for the remaining notations, $\mathbf{X}_{jt}$ represents a vector of country-level controls, $\mathbf{Pair}_{ij}$ represents a vector of country-fixed effects specific to a pair of recipient and donor countries, $\mathbf{Year}_t$ represents a vector of year-fixed effects, and u_{ijt} is the usual error term.

To mitigate the endogeneity problem caused by potential reverse causality, (previous literature demonstrates that an aid recipient country's improved labor institutional environment attracts more aid inflow. In such arguments, labor market regulations could serve as an indicator for the politics, governance, public security, infrastructure, and culture of a country. Thus, if labor institutions are continuously improving, then not only will extra aid flow into the country, but aid projects that have already started in the recipient country will also expand the existing scale or receive follow-up investments. Because our purpose is to investigate whether a larger aid flow can motivate local governments to improve labor institutions, we encounter a two-way causality problem and the multicollinearity problem caused by potentially high correlations among our main explanatory variables and controls, the predicted aid measure is constructed without accounting for the recipient country's institutional quality, actual aid, or other economic outcomes. Since the actual aid data are readily available, the next subsection provides a detailed explanation of the construction of our predicted aid variable. If all three of our hypotheses hold, we should observe a significantly positive β for the alternative measures adopted for dependent and independent variables, and the magnitude of β before a range of nondismissal labor institutions should line up according to their closeness with aid providers' concerns.

4.1. Predicted Level of Aid Flow. Before estimating equation (1), we followed the Gao et al. [50] treatment to construct the predicted amount of aid ($\text{Predicted\_Aid}_{ijt}$) flowing from each giver country to each recipient country at each year in our sample. The construction method references Ali and Isse [51], attributing the determinants of aid to a collection of recipient country characteristics (Y_{ijt}) and a time-invariant collection of bilateral variables between giver and recipient countries (Z_{ij}), such as whether paired countries share common borders or the same official languages, whether the recipient was once a colony of the giver, whether they are self-administered or under the administration of another country, and the geographical distance between the recipient and the donor. The equation is as follows:

$$\text{Actual\_Aid}_{ijt} = \text{Intercept} + \boldsymbol{\theta}\mathbf{Y}_{ijt} + \boldsymbol{\kappa}\mathbf{Z}_{ij} + \mathbf{Year}_t + v_{ijt}, \quad (2)$$

where Actual_Aid_{ijt} denotes the actual amount of aid received by country j from country i in year t. Again, $\mathbf{Year}_t$ is a vector of year-fixed effects, and u_{ijt} is the error term. Note that geographical variables are constructed using the CEPII database. Therefore, after equation (2) is estimated, we employ all the estimated coefficients to compute the predicted aid variable in equation (1) for each sample country pair as follows:

$$\text{Predicted\_Aid}_{ijt} = \begin{cases} 0 \text{ if } \text{Actual\_Aid}_{ijt} = 0, \\ \text{Actual\_}\widehat{\text{Aid}}_{ijt} \quad \text{otherwise.} \end{cases} \quad (3)$$

Note that we do not predict cases in which there is zero actual aid between a pair of countries in a given year. The reason is that providing aid is subject to another set of decision rules that differ from the amount of aid conditional on what the giver has already decided to allocate in a certain year. In summary, the predicted measure used in this analysis ($\text{Predicted\_Aid}_{ijt}$) captures the amount of potential aid for each country from a given donating country, as exclusively predicted by characteristics exogenous to recipient labor institutions. Its value will be high for a country with

geography, language, and colonial history, implying that it is expected to receive more aid in the future. The lagged predicted flow of aid is highly positively correlated with the actual amount of aid, suggesting that our prediction is valid and contributes to the accumulation of actual holdings.

4.2. Data Sources. The dependent variable (the distance between the quality of labor institutions in the recipient country and that in the donating country) is constructed referencing Kogut and Singh [52]. Specifically, this distance variable is calculated as the difference between the two countries' ratings of a chosen institutional variable divided by the standard deviation of this difference computed across all sample country pairs. The range of labor institutional indicators is [0, 10] before the above transformation, and after the transformation, this range is normalized to [−6, 6]. A smaller distance measure equates to greater improvement in labor institutions, either toward donors if the difference is positive or away from donors if the difference is negative. The quality of labor institutions is proxied either by the overall ranking of labor market regulation (LI) published by the Cato Institute's Economic Freedom of the World (EFW) database or by its six component indicators, which include hiring regulations and minimum wage (HRMW_LI), hiring and firing regulations (HFR_LI), centralized collective bargaining (CCB_LI), hours regulations (HR_LI), mandated cost of worker dismissal (MCWD_LI), and conscription (CONS_LI), each of which corresponds to a facet of labor institutions that may be influenced by foreign aid.

Turning to our independent variables, the predicted level of aid (Predicted_Aid) is constructed using estimates of bilateral aid inflow in proportion to the recipient country's GDP, and the actual amount of aid (Actual_Aid), also normalized by recipient, is sourced from William and Mary's AidData project, which is a comprehensive database on this issue dating back to the 1950s. To test for the impact of different types of aid flow, we reference Tierney et al. [53], decomposing total aid according to specified purposes into the following categories with the purpose code range specified in parentheses: (i) aid with governmental purposes (Actual_Aid_Gov), includingthose flowing to Government and Civil Society (15000–15261) and Support to nongovernmental organizations (92000–92030); (ii) aid with economic purposes (Actual_Aid_Econ), including Transport and Storage (21005–21081), Communications (22000–22081), Energy Generation and Supply (23000–23082), Banking and Financial Services (24000–24081), Business and Other Service(25010–25081), Agriculture, Forestry and Fishing(31000–31391), Industry, Mining & Construction (32000–32310), and Trade Policy, Regulations and Tourism (33100–33210); (iii) aid with educational and health purposes (Actual_Aid_Edu) including Education (11000–11430), General/Basic Health (12000–12281), Population Policy and Reproductive Health (13000–13801), Water supply and Sanitation (14000–14082); and (iv) aid with services purposes (Actual_Aid_Serv) including all the remaining categories.

With respect to control variables, we reference Jones and Tarp [36]; first including the natural log of GDP (LN_GDP) and GDP per capita (LN_GDPC), both of which are adjusted using constant 2010 U.S. dollars before taking logs. These variables are used to proxy for the extent to which economic development and the average wealth of a country's residents can establish a context for improved labor institutions. Second, we also use overall trade volume (Trade), which is calculated as the sum of imports and exports as a percentage of GDP, life expectancy (LifeExp), and urban population as a percentage of total population (Urban) to control for the effects of trade openness and labor conditions on improving labor institutional quality. All controls are evaluated as country differences divided by the standard deviation, similar to the institutional distance variable procedure. All raw data for controls is obtained from the World Bank's World Development Indicators database.

Our final sample is a panel of 43 aid giver countries and 100 aid recipient countries over the period from 1980 to 2013, with a total of 4,298 country pairs and a total number of 51,858 year-country-pair observations. The starting year was chosen based on the first reporting year of the EFW dataset. In the process of merging different data sources, we first removed a few countries that had never participated in foreign aid activities. An additional assumption made in establishing the sample of giver-recipient country pairs is that no giver countries will turn to the receiver in the process of aid prediction. Second, we excluded countries with no foreign aid values or missing labor institution data for the majority of our sample years, since retaining them would subject our results to backfilling errors. Finally, we also deleted several countries that experienced division, invasion, or civil war in our sample period, as the development of labor institutions in these nations was randomly disrupted, which could bias our results.

Table 1 presents the information for all variables regarding their notations, definitions, data sources, and the references used to construct them. Panel A of Table 2 summarizes variables' correlation coefficients. As can be seen, measures for both actual and predicted aid are negatively associated with measures of labor institutional distance. Specifically, the predicted aid flow has relatively higher correlations than the actual aid flow, implying that the expectation-induced labor institutional improvement initiated by local governments might be larger than the improvement in institutions caused by the existing aid. Aid inflow for economic purposes also has higher correlations with labor market regulations than total aid inflow. The rationale might be that economic aid has a more direct impact on labor-related policies and regulations, although this type of aid only accounts for about 6.5% of total aid flows. Nevertheless, our main explanatory variables are not strongly correlated with other controls, negating concerns regarding the multicollinearity problem. Panel B of Table 2 presents the summary statistics, revealing preliminary evidence for our hypotheses.

5. Results and Discussion

Before estimating equations (2) and then (1), all variables are winsorized at 1% and 99% levels to address problems caused by small denominators in variable construction and control for the effect of potential outliers.

Table 1: Variable descriptions.

Variable	Description	Source	Range
Dependent variables			
LI	Labor institutional distance between a pair of recipient and giver, calculated based on scores reported for labor market regulation	EFW	[−6, 6]
HRMW_LI	Subscores for hiring regulations and minimum wage in bilateral distance measures		
HFR_LI	Subscores for hiring and firing regulations in bilateral distance measures		
CCB_LI	Subscores for centralized collective bargaining rights in bilateral distance measures		
HR_LI	Subscores for hours regulations in bilateral distance measures		
MCWD_LI	Subscores for the mandated cost of worker dismissal in bilateral distance measures		
CONS_LI	Subscores for conscription in bilateral distance measures		
Independent variables			
Actual_Aid	Actual bilateral aid flow over the recipient's GDP	AidData	%
Predicted_Aid	Predicted bilateral aid flow over the recipient's GDP		
Control variables			
LN_GDP	Ln of GDP in bilateral distance measures	World Bank's World Development Indicators Database	
LN_GDPC	Ln of GDP per capita in bilateral distance measures		
Trade	Total trade volume over GDP in bilateral distance measures		
LifeExp	The average life expectancy in bilateral distance measures		
Urban	Urban population over total population in bilateral distance measures		
Instrumental variables			
ND	Ln of the number of occurrences of natural disasters plus 1	The International Disasters Database	Ln $(n+1)$
AF	Ln of the number of people affected by natural disasters plus 1		Ln $(n+1)$
TR	Ln of the number of terrorist attacks on recipient countries plus 1	Global Terrorism Database	Ln $(n+1)$

Table 2: Variable correlations and summary statistics.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Panel A. Variable Correlations															
(1) Actual_Aid_All	1.000														
(2) Actual_Aid_Econ	0.198***	1.000													
(3) Predicted_Aid_Econ	0.045***	0.163***	1.000												
(4) LaborInst or LI	0.054***	0.038***	−0.020***	1.000											
(5) HRMW_LI	0.029***	0.017***	−0.017***	0.667***	1.000										
(6) HFR_LI	0.008	0.015***	−0.030***	0.499***	0.348***	1.000									
(7) CCB_LI	0.019***	0.026***	−0.029***	0.497***	0.254***	0.523***	1.000								
(8) HR_LI	0.043***	0.023***	−0.007*	0.556***	0.403***	0.286***	0.211***	1.000							
(9) MCWD_LI	0.030***	0.014***	−0.010**	0.401***	0.078***	0.222***	0.102***	0.004	1.000						
(10) CONS_LI	0.043***	0.029***	0.001	0.649***	0.200***	−0.054***	0.071***	0.185***	−0.029***	1.000					
(11) LN_GDP	0.241***	0.073***	0.078***	−0.014***	0.096***	−0.109***	−0.053***	0.132***	−0.109***	−0.039***	1.000				
(12) LN_GDPC	0.183***	0.052***	0.046***	0.143***	0.167***	0.001	−0.102***	0.006	0.153***	0.077***	0.350***	1.000			
(13) Trade	−0.044***	−0.027***	−0.028***	0.146***	0.086***	0.146***	0.098***	−0.039***	0.125***	0.063***	−0.262***	0.338***	1.000		
(14) LifeExp	0.158***	0.029***	0.034***	0.058***	0.047***	−0.008*	−0.001	0.045***	0.087***	−0.027***	0.353***	0.746***	0.228***	1.000	
(15) Urban	0.134***	0.046***	0.035***	0.072***	0.094***	0.000	0.025***	−0.053***	0.122***	−0.011**	0.307***	0.777***	0.214***	0.593***	1.000
Panel B. Summary Statistics															
Mean	0.0791	0.0043	0.0082	0.1564	0.1908	−0.2297	−0.2291	−0.2230	0.5325	0.1441	0.9529	1.4337	0.0763	1.0156	0.7443
Median	0.0000	0.0000	0.0000	0.1444	0.1565	−0.2990	−0.1655	0.0000	0.4662	0.0000	0.9975	1.4757	0.0954	0.7864	0.7784
Min	0.0000	0.0000	−2.0278	−3.1532	−2.1547	−3.1663	−3.0873	−3.0147	−2.1710	−1.6293	−2.4601	−2.3989	−6.2240	−2.5633	−2.5918
*P*25	0.0000	0.0000	0.0000	−0.5301	−0.4604	−0.9430	−0.9803	−0.7537	−0.1055	−0.1629	0.3312	0.7970	−0.4271	0.3483	0.0981
*P*75	0.0043	0.0000	0.0000	0.8377	0.9116	0.4250	0.4654	0.4899	1.2588	0.8147	1.5802	2.1239	0.6511	1.7783	1.4335
Max	22.8677	3.8409	5.8126	3.3730	2.7624	3.9156	4.0800	2.3838	2.5145	1.6293	3.8883	3.9264	4.8556	3.9883	3.1834
Std. Dev.	0.4513	0.0543	0.0900	0.9865	1.0073	1.0071	1.0076	1.0085	0.9789	0.9444	0.9178	0.9688	1.1317	1.0227	0.9359

Notes: Panel A shows correlation coefficients for 15 variables constructed based on raw data from the World Bank Doing Business, Economic Freedom of the World, AidData, and the International Disasters Database. Actual_Aid_All is the actual bilateral aid flow aggregated for all purposes divided by the recipient's GDP. Actual_Aid_Econ and Predicted_Aid_Econ are the actual amounts and the predicted bilateral aid flow with economic growth purposes divided by the recipient's GDP, respectively. LaborInst is the score of overall labor institutions in distance measures and definitions for all other sub-indicators are summarized in Table 1. LN_GDP is the natural log of GDP evaluated at 2010 constant dollars, LN_GDPC is the natural log of GDP per capita evaluated at 2010 constant dollars, Trade is the overall trade openness divided by GDP, LifeExp is life expectancy, Urban is urban population as a percentage of the total population, ND is the natural log of 1 plus the number of occurrences of natural disasters, and TD is the natural log of 1 plus the number of deaths caused by technological disasters. Panel B reports the summary statistics for all variables. The sample period spans from 1980 to 2013. ***, **, and * denote significance at 1%, 5%, and 10%.

We start by investigating whether and which type of foreign aid flow can improve local labor institutions to bring them closer to the benchmark level of the donor countries' labor institutions. Table 3 presents the pooled OLS results of regressing the measure for institutional distance based on overall labor market regulation ratings. The first five columns are controlled only for the year-fixed effect, and the last five columns repeat these procedures, adding controls. For each specification in Table 3, insignificant relationships are shown between foreign aid flow and domestic labor institutions, with the exception of aid flow with economic purposes (i.e., columns (2) and (7) display negative significance at the 5% and 1% levels, respectively). This implies that these types of aid decrease the gap between labor institutional quality in the recipient country and the donating country's standards. We next focus on economic aid.

Table 4 demonstrates which components of labor market regulations are most affected by foreign aid with the purpose of promoting destination countries' economic growth. Notably, hiring and firing regulations and the mandated costs of worker dismissal seem to be unaffected. While hiring regulations, minimum wage, collective bargaining rights, and working hour regulations are facilitated by economic aid with similar effects, conscription institutions are harmed by foreign aid. This indicates that it is very unlikely that funds from foreign aid would be allocated to strengthening recipient countries' military power.

Finally, Table 5 compares the coefficients before actual and predicted economic aid flow estimated by pooled OLS, fixed effects, and random effects. We find significant results demonstrating that the predicted aid has a larger effect than the actual aid on overall labor institutional distance. When the actual level of economic aid rises by 1%, holding others constant, the quality of local labor market institutions will be 0.09% closer to that in aid-giver countries, according to column (3). In comparison, for the predicted level of economic aid, a 1% increase will lead to a 0.04% increase in domestic labor institutions. In other words, the new mechanism under examination, wherein local governments preemptively reform labor market institutions to obtain future aid, is about half the strength of the traditional mechanism (i.e., previous foreign aid increases the quality of local labor institutions).

Before conducting robustness tests, we discuss each of this paper's three findings further in comparison with existing literature. Our first finding is that aid flow can positively affect local labor institutions, which are defined as encompassing a range of domestic labor policies and domestic labor market regulations. Such a conclusion provides evidence of the relationship between institutions and aid from a distinct perspective. The majority of scholars currently agree that the receiving countries' institutional quality constitutes a key determinant of how much aid is given by the donor countries, but in turn, whether aid flows can change the institutions of the recipient country is an issue that has been overlooked, and only several scholars have investigated the impact of nonaid economic outcome variables on institutional quality at the country level [24–26, 33, 37, 38]. The results of our paper fill the above blank by supporting the idea that international aid contributes to institutional quality improvement based on a new dataset of labor institution quantification, thus validating the existence of positive externalities of aid towards at least one aspect of the recipient countries' institutions.

The second finding of this paper is consistent with that of scholars who have focused on the types of capital flows affecting institutions. In specific, these scholars document that simply increasing the total amount of capital inflows including aid flows does not suffice to generate a significant institutional improvement effect [24–26, 33], but instead that capital injection with a clear objective turns out to be more effective [37, 38]. In our analysis, we compare all types of aid that differ in their purposes, such as enhancing performance in the economic, political, services, education, and health sectors. We discover that aid flows that directly promote local economic growth can have enormous and statistically significant impacts on relevant labor institutions. This is because most of the aid recipients in our sample are from less developed countries compared to the aid givers. Economic growth is the priority of the recipients' governments, so economic aid not only stays more in line with their wishes but also requires a shorter time to produce actual results than other types of aid. When the level of economic development increases, recipient countries will naturally begin to pay attention to optimizing the labor environment, improving labor income, and protecting workers and other institutional construction issues.

The last finding of this paper contributes to the field of aid and institutions concerning proposing a new channel of influence exerted by aid on institutional quality, i.e., the ex-ante anticipation channel, whereby anticipatory aid has the same effect of improving institutions compared to actual aid. Although the concept of anticipatory aid has been laid out in Boateng et al. [34] study, they do not rigorously construct a proxy that can measure anticipatory aid using data but rather elucidate the possible effects of anticipatory aid in terms of aid commitments. After measuring anticipatory aid and conducting empirical tests, we find that anticipatory aid positively affects several areas of the labor institutions, such as the hiring decisions, minimum wage, collective bargaining, hours of work, and conscription, with the most significant impacts in the areas of hiring decisions and minimum wage. There are two reasons for the above pattern. On the one hand, as Boateng et al. [34] suggest, to conduct more trade and economic exchanges with the recipient country in the future, the donor country may include the efforts required from the recipient country as a prerequisite to fulfilling its aid commitments, and the areas of hiring decisions and minimum wage have the highest likelihood of being included due to their simplicity in transferring into written covenants. On the other hand, areas such as hiring decisions and minimum wage are also the most concerning labor issues for the local government and labor force in the recipient country. Moreover, in addition to previous aid commitments, the recipient country will be incentivized to improve these areas further to receive more aid or investment in the future to achieve the ultimate goal of enhancing the participation willingness and production efficiency of the labor force.

Table 3: Estimation results of regressing the overall labor institutional distance on different types of aid flow.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Actual_Aid_All	−0.0015 (−0.401)					−0.0030 (−0.839)				
Actual_Aid_Econ		−0.0666** (−2.152)					−0.0920*** (−2.926)			
Actual_Aid_Gov			0.0294** (2.027)					0.0237 (1.600)		
Actual_Aid_Serv				−0.0342 (−0.849)					−0.0523 (−1.342)	
Actual_Aid_Edu					0.00640 (0.585)					0.00340 (0.339)
LN_GDP						−1.3874*** (−19.521)	−1.3864*** (−19.522)	−1.3890*** (−19.557)	−1.3884*** (−19.548)	−1.3889*** (−19.557)
LN_GDPC						1.2382*** (31.409)	1.2385*** (31.417)	1.2385***(31.419)	1.2385*** (31.420)	1.2385*** (31.421)
Trade						0.0505*** (6.640)	0.0506*** (6.654)	0.0505*** (6.641)	0.0506*** (6.648)	0.0505*** (6.643)
LifeExp						−0.1000*** (−7.545)	−0.1007*** (−7.595)	−0.1002*** (−7.556)	−0.1002*** (−7.557)	−0.1001*** (−7.550)
Urban						−0.6091*** (−22.439)	−0.6099*** (−22.479)	−0.6086*** (−22.431)	−0.6090*** (−22.443)	−0.6087*** (−22.432)
F statistics	187.3015	187.4500	187.4130	187.2692	187.2467	251.2803	251.3988	251.3283	251.2843	251.2479
Adjusted R^2	0.8717	0.8717	0.8717	0.8717	0.8717	0.8785	0.8785	0.8785	0.8785	0.8785

Notes: All regressions include an intercept and are estimated by pooled OLS with White's correction of heteroskedasticity. t-statistics are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively. Time and pair-country-fixed effects are included in all regressions, but not reported. The number of observations across all specifications is 51,858.

Table 4: Estimation results of regressing the labor institutional distance component indicators on actual economic aid flow.

	HRMW_LI (1)	HFR_LI (2)	CCB_LI (3)	HR_LI (4)	MCWD_LI (5)	CONS_LI (6)	HRMW_LI (7)	HFR_LI (8)	CCB_LI (9)	HR_LI (10)	MCWD_LI (11)	CONS_LI (12)
Actual_Aid_Econ	−0.1412***	−0.0545	−0.1153***	−0.0893**	0.0098	0.0820***	−0.1681***	−0.0545	−0.1054***	−0.1072***	0.0186	0.0672**
	(−3.429)	(−1.312)	(−3.239)	(−2.440)	(0.537)	(2.582)	(−4.013)	(−1.314)	(−3.029)	(−2.908)	(1.056)	(2.138)
LN_GDP							0.2630***	−1.1091***	−0.3230***	−2.5215***	2.0648***	−2.3114***
							(3.062)	(−10.512)	(−3.706)	(−25.533)	(26.053)	(−38.460)
LN_GDPC							0.4235***	0.7877***	0.1498***	2.1510***	−1.6123***	1.5943***
							(8.898)	(13.216)	(3.046)	(39.685)	(−34.253)	(48.394)
Trade							−0.0286***	−0.0184*	−0.0233***	0.0582***	0.0474***	0.1306***
							(−2.785)	(−1.713)	(−2.621)	(5.089)	(7.013)	(21.343)
LifeExp							−0.1867***	0.0640***	0.2097***	0.0916***	−0.0121	−0.1156***
							(−9.679)	(3.370)	(12.715)	(4.306)	(−0.909)	(−8.301)
Urban							−0.3592***	−0.1518***	0.0004	−0.2065***	−0.2190***	−0.2907***
							(−9.794)	(−4.257)	(0.012)	(−5.568)	(−7.954)	(−12.548)
No. of observations	48,594	45,204	45,169	49,058	45,283	51,566	48,594	45,204	45,169	49,058	45,283	51,566
F statistics	0.8090	0.7638	0.8299	0.7554	0.9131	0.8841	0.8119	0.7653	0.8307	0.7672	0.9198	0.8936
Adjusted R^2	154.4905	66.2486	35.9921	69.1545	87.9108	166.5913	145.0246	57.6528	36.3482	106.3300	124.7327	276.2221

Notes: All regressions include an intercept and are estimated by pooled OLS with White's correction of heteroskedasticity. t-statistics are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively. Time- and pair-country-fixed effects are included in all regressions, but not reported. The number of observations varies across specifications since each subindicator of the labor market regulations has its own set of missing values.

Table 5: Estimation results of regressing the overall labor institutional distance on actual vs. predicted economic aid flow.

	Pooled OLS				Fixed Effect		Random Effect	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Actual_Aid_Econ	−0.0666** (−2.152)		−0.0920*** (−2.926)		−0.0920** (−2.138)		−0.0846** (−1.993)	
Predicted_Aid_Econ		−0.0360** (−2.276)		−0.0390** (−2.502)		−0.0390** (−2.205)		−0.0487*** (−2.742)
LN_GDP			−1.3864*** (−19.522)	−1.3852*** (−19.475)	−1.3864*** (−8.388)	−1.3852*** (−8.373)	−0.1491*** (−6.526)	−0.1500*** (−6.546)
LN_GDPC			1.2385*** (31.417)	1.2370*** (31.358)	1.2385*** (13.307)	1.2370*** (13.290)	0.6216*** (21.430)	0.6221*** (21.406)
Trade			0.0506*** (6.654)	0.0499*** (6.550)	0.0506*** (2.953)	0.0499*** (2.906)	0.0286* (1.859)	0.0280* (1.815)
LifeExp			−0.1007*** (−7.595)	−0.1004*** (−7.550)	−0.1007*** (−3.473)	−0.1004*** (−3.455)	−0.1490*** (−6.992)	−0.1488*** (−6.962)
Urban			−0.6099*** (−22.479)	−0.6078*** (−22.349)	−0.6099*** (−8.425)	−0.6078*** (−8.391)	−0.4075*** (−11.906)	−0.4076*** (−11.868)
No. of observations	51,858	51,698	51,858	51,698	51,858	51,698	51,858	51,698
F statistics	187.4500	186.2844	251.3988	249.3573	94.0233	93.0740	N/A	N/A
Adjusted R^2	0.8717	0.8717	0.8785	0.8786	0.2068	0.2063	N/A	N/A
Hausman Test p value	N/A	N/A	N/A	N/A	<0.01	<0.01	<0.01	<0.01

Notes: All regressions include an intercept and are estimated by pooled OLS, fixed effect, or random effect models, with White's correction of heteroskedasticity. t-statistics are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively. Time- and pair-country-fixed effects are included in all regressions, but not reported. The number of observations in the specifications for predicted aid is slightly smaller due to a data availability problem in the predictive regression.

Table 6: Instrumental variable estimation results and other robustness checks.

	Panel A: IV		Panel B: Continent Subsample			Panel C: Crisis Subsample		Panel D: Alternative Dependent Variables			
	FE	RE	European donor	African recipient	Asian recipient	Before 2008	After 2008	valid_dis	max_trial	seve_pay	redund_pay
Actual_Aid_Econ	−12.8793* (−1.835)	−15.9141* (−1.789)	−0.1414** (−2.196)	−0.0654** (−2.054)	−0.1513** (−2.435)	−0.0756** (−2.080)	−0.0585 (−1.423)	−0.1711** (−2.564)	−0.3001** (−2.367)	−0.2751** (−3.596)	−0.3748*** (−2.991)
No. of Obs.	51,858	51,858	34,792	19,293	13,084	28,552	23,306	7,354	7,354	7,354	7,354
Wald/F statistics	1,524.31	1,748.75	265.97	198.44	78.45	224.40	89.67	60.95	55.80	80.48	99.29
Adjusted R^2	N/A	N/A	0.8654	0.9122	0.8468	0.8967	0.9378	0.0688	0.0794	0.0913	0.102

Notes: Except for the first two IV estimations (Wald statistics instead of F statistics are reported for these two specifications as well), all other regressions include an intercept and are estimated by the pooled OLS model, with White's correction of heteroskedasticity. t-statistics are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10% levels, respectively. All controls as well as time- and pair-country-fixed effects are included in all regressions, but not reported. In Panels A–C, the dependent variable is always the overall labor institutional distance used previously. In Panel D, the alternative dependent variables are distance computed based on raw indicators sourced from the employment protection legislation database by the International Labor Office at Geneva. We select four representative summary indicators in the area of terminating regular labor contracts across the world. valid_dis stands for valid grounds for dismissal, max_trial means the maximum probationary (trial) period, seve_pay represents severance pay, and redund_pay is redundancy pay. We also introduce step-dis, which measures the procedural requirements for dismissal, which is not significantly associated with our aid variable, although the sign of the coefficients is consistent with our expectations.

6. Robustness Tests

In this subsection, we assess the robustness of the above results in several ways. First, we address potential measurement errors in our analysis using three instrumental variables (IVs). The first two are obtained from the International Disasters Database, including the number of natural disasters (ND) and the number of people affected by them (AF). (According to the International Disasters Database, natural disasters include incidents of natural causes such as geophysical (e.g., earthquake and volcanic activity), meteorological (e.g., storm), hydrological (e.g., flood), climatological (e.g., wildfire), biological (e.g., epidemic and animal accident), and extraterrestrial (i.e., space weather) factors.) The third IV is sourced from the Global Terrorism Database, and measures the number of transborder terrorist attacks suffered by aid recipient countries (TR). All three IVs are highly correlated with givers' donating decisions but should be less correlated with institutionalized hiring and firing activities as they can be considered exogenous shocks to local labor markets. We argue that they are valid IVs because, aligning with the IV selection criteria of Acemoglu et al. [54] and Miguel et al. [55]; given that the labor institution-building effect of foreign aid is a gradual process with long-term economic consequences, we choose IVs that belong to noneconomic shocks and have only a short-term impact on foreign donors' decision-making.

Moreover, our IVs pass the tests for weak IV and overidentification. Nevertheless, Table 6 Panel A shows the second-stage results when aid variables are instrumented in the first stage under a two-stage least squares setup. While the coefficients before aid become less significant, the signs of the IV-estimated coefficients maintain the desired direction, and are much larger in terms of magnitude than those estimated by the noninstrumented model. This finding suggests that we removed the underestimation biases caused by potential measurement errors, and endogeneity due to two-way causality may not be an issue.

As an additional group of robustness checks, we also rerun our baseline results in several subsamples (e.g., clustering observations by specific continents where donor or recipient countries are located or dividing the sample according to the 2008 global financial crisis). It is clear that the holding of our hypotheses in the previous baseline regressions is not an isolated case in particular subsamples. Finally, we employ alternative dependent variables using the employment protection legislation database provided by the International Labor Office at Geneva. Specifically, we select indicators that can quantify the ease of terminating regular labor contracts. The implication is that we investigate how aid can influence the outcome of interactions between more formal labor institutions, such as labor laws, and more informal labor institutions, such as labor unions. The effect of foreign economic aid on domestic labor institutions remains strong. See Table 6 Panels B–D for a summary of the results derived from the above exercises.

7. Conclusions

This study examines the relationship between foreign economic aid and labor institutional change. Consistent with empirical evidence, we find that first, aid flow can impose significantly positive effects on local labor institutions, which are defined as encompassing a range of domestic labor policies and domestic labor market regulations. Second, compared with other types of aid flowing to political, services, education, and health sectors, aid flow aiming to directly promote local economic growth can have an enormously significant impact on local labor institutions. Third, the labor institution-building effect of predicted aid flow is significantly positive. This effect is larger in magnitude and significance for labor institutions related to hiring decisions, minimum wage, collective bargaining, hours of work, and conscription than those related to worker dismissal. These findings have critical implications for researchers, policymakers, and active players in labor markets.

We now put forward relevant opinions and suggestions on how to use aid to improve labor institutions from two perspectives: the donor countries and the recipient countries. First, for policymakers in donor countries, this paper concludes that simply increasing the quantity of aid is not the most effective means. In addition to quantity, economic aid focused on raising the level of development and fulfilling long-term aid commitments can significantly contribute to improving the labor system in recipient countries. Such a conclusion provides two straightforward aid programs. On the one hand, compared with the amount of aid, the objective and type of aid are more crucial. The more focused the aim of aid and the more precise the usage of aid, the better the effect of aid will be, so the donor government can make economic aid the primary type of aid and help the economic development of the recipient country as the primary purpose of aid, to promote the improvement of the local labor system. On the other hand, besides the actual aid, sustainable aid commitment can also exert significant policy effects. Signing long-term aid agreements with recipient countries and making the relevant provisions of improving labor systems a condition of actual aid serves as another option worthy of consideration for policymakers in aid-giving countries.

Second, for recipient countries, this paper finds that hiring decisions, minimum wage, collective bargaining rights, working hours, and conscription are the types of labor regimes where aid is expected to impact significantly. Among them, hiring decisions and the minimum wage are associated with the most significant impact, which implies that these labor institutional aspects are the ones that the aid recipient government is most active in optimizing when the recipient country expects or wants to receive more aid from future donors. These are also the two areas of most interest to active participants in labor markets. They are also the two areas in which actors active in labor markets are most interested. As a result, donor and recipient governments should make them the main areas of labor system construction, the former by including them in the riders of their aid commitments, and the latter by making them the direction of reforms to obtain aid or attract foreign investment.

Finally, as can be seen from the results of heterogeneity analysis, economic aid can improve the labor system, whether for formal or informal labor systems or recipient countries located on different continents. From this point of view, the data supports the institutional externalities of aid. Then, when deciding whether to provide aid, it is necessary to comprehensively internalize the externalities of aid in improving the quality of labor and other institutions in addition to the direct benefits and costs of aid to make a more rational judgment. In addition, the data on aid that underpins the study is currently only available at the national level and at an early stage, so the government itself or a third-party authority should create a significant platform for microaid data collection to improve the quality of future studies by improving the availability of better and larger datasets.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Shuzhen Niu, Xiang Gao, Zhenhua Gu, Yingchao Zhang, and Qian Wei contributed equally to this manuscript.

References

[1] P. Boone, *The Impact of Foreign Aids on Savings and Growth*, Open access and Academic publisher, Mimeo, London, 1994.

[2] C. Burnside and D. Dollar, "Aid, policies, and growth," *The American Economic Review*, vol. 90, no. 4, pp. 847–868, 2000.

[3] R. Rajan and A. Subramanian, "Does aid affect governance?" *The American Economic Review*, vol. 97, no. 2, pp. 322–327, 2007.

[4] A. Alesina and D. Dollar, "Who gives foreign aid to whom and why?" *Journal of Economic Growth*, vol. 5, no. 1, pp. 33–63, 2000.

[5] World Bank, *Assessing Aid: What Works, what Doesn't, and Why*, World Bank, Washington, DC, USA, 1998.

[6] P. Clist, A. Isopi, and O. Morrissey, "Selectivity on aid modality: determinants of budget support from multilateral donors," *The Review of International Organizations*, vol. 7, no. 3, pp. 267–284, 2012.

[7] P. J. Schraeder, S. W. Hook, and B. Taylor, "Clarifying the foreign aid puzzle: a comparison of American, Japanese, French, and Swedish aid flows," *World Politics*, vol. 50, no. 2, pp. 294–323, 1998.

[8] J. C. Berthélemy, "Bilateral donors' interest vs. recipients' development motives in aid allocation: do all donors behave the same?" *Review of Development Economics*, vol. 10, no. 2, pp. 179–194, 2006.

[9] M. S. Winters and G. Martinez, "The role of governance in determining foreign aid flow composition," *World Development*, vol. 66, pp. 516–531, 2015.

[10] S. Dietrich, "Bypass or engage? Explaining donor delivery tactics in foreign aid allocation," *International Studies Quarterly*, vol. 57, no. 4, pp. 698–712, 2013.

[11] S. Chatterjee and S. J. Turnovsky, "Foreign aid and economic growth: the role of flexible labor supply," *Journal of Development Economics*, vol. 84, no. 1, pp. 507–533, 2007.

[12] R. B. Freeman, "Labor market institutions around the world," *NBER Working Paper Series*, vol. 13242, 2007.

[13] B. Holmlund, "What do labor market institutions do?" *IZA Discussion Paper Series No*, p. 7809, 2013.

[14] G. Betcherman, "Labor market institutions: a review of the literature," 2013, https://www.researchgate.net/publication/255724718_Labor_Market_Institutions_A_Review_of_the_Literature.

[15] R. Ashworth, G. Boyne, and R. Delbridge, "Escape from the iron cage? Organizational change and isomorphic pressures in the public sector," *Journal of Public Administration Research and Theory*, vol. 19, no. 1, pp. 165–187, 2007.

[16] R. Akbar, R. Pilcher, and B. Perrin, "Performance measurement in Indonesia: the case of local government," *Pacific Accounting Review*, vol. 24, no. 3, pp. 262–291, 2012.

[17] R. D. Putnam, *Making Democracy Work: Civic Traditions in Italy*, Princeton University Press, Princeton, 1993.

[18] D. Acemoglu, S. Johnson, and J. A. Robinson, "Reversal of fortune: geography and institutions in the making of the modern world income distribution," *Quarterly Journal of Economics*, vol. 117, no. 4, pp. 1231–1294, 2002.

[19] M. Zielenkiewicz, "Institutional environment in the context of development of sustainable society in the European Union countries," *Equilibrium*, vol. 9, no. 1, pp. 21–38, 2014.

[20] J. Sato, H. Shiga, T. Kobayashi, and H. Kondoh, "Emerging donors" from a recipient perspective: an institutional analysis of foreign aid in Cambodia," *World Development*, vol. 39, no. 12, pp. 2091–2104, 2011.

[21] J. Chu and J. Fang, "Economic policy uncertainty and firms' labor investment decision," *China Finance Review International*, vol. 11, no. 1, pp. 73–91, 2020.

[22] A. Cieślik and S. Hamza, "Inward FDI, IFRS adoption and institutional quality: insights from the MENA countries," *International Journal of Financial Studies*, vol. 10, no. 3, p. 47, 2022.

[23] G. Wan, A. Y. Dawod, S. Chanaim, and S. S. Ramasamy, "Hotspots and trends of environmental, social and governance (ESG) research: a bibliometric analysis," *Data Science and Management*, vol. 6, no. 2, pp. 65–75, 2023.

[24] D. A. Bräutigam and S. Knack, "Foreign aid, institutions, and governance in sub-Saharan Africa," *Economic Development and Cultural Change*, vol. 52, no. 2, pp. 255–285, 2004.

[25] W. Easterly, *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good*, Penguin Press, New York, 2006.

[26] S. Djankov, J. G. Montalvo, and M. Reynal-Querol, "The curse of aid," *Journal of Economic Growth*, vol. 13, no. 3, pp. 169–194, 2008.

[27] K. Casey, R. Glennerster, and E. Miguel, "Reshaping institutions: evidence on aid impacts using a preanalysis plan," *Quarterly Journal of Economics*, vol. 127, no. 4, pp. 1755–1812, 2012.

[28] G. Mansuri and R. Vijayendra, *Localizing Development: Does Participation Work? Policy Research Report*, World Bank, Washington, DC, USA, 2013.

[29] World Bank, "Japan social development fund grant proposal: capacity development to strengthen social capital in Sierra Leone," *Project Mimeograph*, 2004.

[30] S. A. Asongu and J. C. Nwachukwu, "Foreign aid and governance in Africa," *International Review of Applied Economics*, vol. 30, no. 1, pp. 69–88, 2016.
[31] A. Riddell and M. Niño-Zarazúa, "The effectiveness of foreign aid to education: what can be learned?" *International Journal of Educational Development*, vol. 48, pp. 23–36, 2016.
[32] S. Knack and A. Rahman, "Donor fragmentation and bureaucratic quality in aid recipients," *Journal of Development Economics*, vol. 83, no. 1, pp. 176–197, 2007.
[33] S. Lim, L. Mosley, and A. Prakash, "Revenue substitution? How foreign aid inflows moderate the effect of bilateral trade pressures on labor rights," *World Development*, vol. 67, pp. 295–309, 2015.
[34] E. Boateng, F. W. Agbola, and A. Mahmood, "Foreign aid volatility and economic growth in Sub-Saharan Africa: does institutional quality matter?" *Economic Modelling*, vol. 96, pp. 111–127, 2021.
[35] T. Dunning, "Conditioning the effects of aid: cold War politics, donor credibility, and democracy in Africa," *International Organization*, vol. 58, no. 02, pp. 409–423, 2004.
[36] S. Jones and F. Tarp, "Does foreign aid harm political institutions?" *Journal of Development Economics*, vol. 118, pp. 266–281, 2016.
[37] M. A. Clemens and H. M. Postel, "Deterring emigration with foreign aid: an overview of evidence from low-income countries," *Population and Development Review*, vol. 44, no. 4, pp. 667–693, 2018.
[38] A. Dreher, A. Fuchs, and S. Langlotz, "The effects of foreign aid on refugee flows," *European Economic Review*, vol. 112, pp. 127–147, 2019.
[39] A. A. Maruta, R. Banerjee, and T. Cavoli, "Foreign aid, institutional quality and economic growth: evidence from the developing world," *Economic Modelling*, vol. 89, pp. 444–463, 2020.
[40] R. P. Pradhan, M. B. Arvin, M. S. Nair, and S. E. Bennett, "Does foreign aid affect innovation and institutional quality in middle-income countries?" *Evaluation and Program Planning*, vol. 100, Article ID 102340, 2023.
[41] R. J. Art and K. N. Waltz, *The Use of Force: Military Power and International Politics*, Rowman and Littlefield Publishers, Washington DC, USA, 2009.
[42] J. Azam and J. Laffont, "Contracting for aid," *Journal of Development Economics*, vol. 70, no. 1, pp. 25–58, 2003.
[43] I. Wallerstein, *Alternatives: The United States Confronts the World*, Routledge, London, 2015.
[44] J. M. Keynes, *The General Theory of Employment, Interest, and Money*, Palgrave Macmillan, London, 1936.
[45] C. Carvalho, S. Eusepi, E. Moench, and B. Preston, "Anchored inflation expectations," *American Economic Journal: Macroeconomics*, vol. 15, no. 1, pp. 1–47, 2023.
[46] M. Manacorda, F. C. Rosati, M. Ranzani, and G. Dachille, "Temporary work visas as US-Haiti development cooperation: a preliminary impact evaluation," *IZA Journal of Labor and Development*, vol. 6, no. 1, pp. 1–18, 2017.
[47] D. Brautigam, "Governance, economy, and foreign aid," *Studies in Comparative International Development*, vol. 27, no. 3, pp. 3–25, 1992.
[48] J. D. Sachs, *The End of Poverty: Economic Possibilities for Our Time*, Penguin Books, New York, 2005.
[49] J. Wright and M. Winters, "The politics of effective foreign aid," *Annual Review of Political Science*, vol. 13, no. 1, pp. 61–80, 2010.
[50] X. Gao, Z. Gu, and K. G. Koedijk, "On the role of projected FDI inflows in shaping institutions: the longer-term plan for post-pandemic investment reboot," *East Asian Economic Review*, vol. 24, no. 4, pp. 441–468, 2020.
[51] A. M. Ali and H. S. Isse, "An empirical analysis of the determinants of foreign aid: a panel approach," *International Advances in Economic Research*, vol. 12, no. 2, pp. 241–250, 2006.
[52] B. Kogut and H. Singh, "The effect of national culture on the choice of entry mode," *Journal of International Business Studies*, vol. 19, no. 3, pp. 411–432, 1988.
[53] M. J. Tierney, D. L. Nielson, D. G. Hawkins et al., "More dollars than sense: refining our knowledge of development finance using AidData," *World Development*, vol. 39, no. 11, pp. 1891–1906, 2011.
[54] D. Acemoglu, S. Johnson, and J. A. Robinson, "The colonial origins of comparative development: an empirical investigation," *The American Economic Review*, vol. 91, no. 5, pp. 1369–1401, 2001.
[55] E. Miguel, S. Satyanath, and E. Sergenti, "Economic shocks and civil conflict: an instrumental variables approach," *Journal of Political Economy*, vol. 112, no. 4, pp. 725–753, 2004.