

Why Do Some Development Projects Disburse Funds Faster than Others?

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Why Do Some Development Projects Disburse Funds Faster than Others?

Leopoldo Avellán¹, Zulima Leal¹, Giulia Lotti¹

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Abstract

The timely disbursement of funds is a necessary condition for the success of international development projects. Disbursements track the progress of projects in completing the products that ultimately will deliver the project's desired outcomes. Moreover, in a world with pressing needs for external financing, project disbursements are an important source of external liquidity for recipient countries. However, some projects start disbursing faster than others and at relatively larger amounts. Hence learning why some projects disburse faster than others is important to understand not only which projects are more likely to achieve development outcomes sooner, but also to assess their value as providers of external liquidity in times of distress. As it has become evident over the past year with the COVID-19 pandemic, multilateral lending has played a crucial role in helping emerging countries face the larger financing needs originated by the crisis. In 2020, Inter-American Development Bank (IDB) disbursements increased 49% over 2019, reaching \$13.4 billion, more than doubling the baseline disbursement projection. This paper assesses which observable characteristics of investment loans offered by the IDB are associated with faster disbursements. The results indicate substantial heterogeneity across countries, sectors, and loan modalities. All else constant, results-based loans and loans in the social sector are more likely to disburse within 2 years after being approved. Projects in countries where it takes longer to meet at least some of the clauses to start disbursing are less likely to start disbursing 2 years after approval. Projects that are expected to have longer execution times disburse at slower speeds within 24 months after approval. Overall, country factors seem to play a more relevant role than sectorial factors in explaining the probability that a project will disburse funds quickly. These and other findings in the paper can inform future programming exercises and help optimize the disbursement processes.

JEL: F53, O19, O21, O22, O54

Keywords: Investment projects, Project execution, Disbursements, Interamerican Development Bank, Latin America and the Caribbean, COVID-19

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Introduction

The COVID-19 pandemic has set back the progress made in reducing poverty in Latin American and the Caribbean (LAC) economies by 20 years. The regional economy contracted by 7.4% in 2020 and a weak and long recovery is expected (IMF, 2020). Governments are responding with measures to contain the effects of the crisis. These measures, added to the reduction in tax revenues due to lower activity, will result in higher fiscal deficits and gross financing needs. As a result, estimates suggest that public debt could increase from 58% of GDP in 2019 to 76% for the average country in the region in 2023 (IDB, 2021).

At this juncture, the added value that the Inter-American Development Bank (IDB) brings to the region, in addition to sectoral knowledge, is in supporting countries as they cope with the social and economic effects of the crisis and helping to close development gaps in the region. IDB loans provide fresh resources for budget support and to advance progress in the region, at lower rates and longer maturities, even when access to foreign credit is scarce (Avellán, Galindo, and Lotti, 2021).

The pressing situation also requires that new loans approved by the IDB be disbursed faster but without compromising the achievement of their development objectives.² On average, 424 days pass from the approval of a project until its first disbursement, and it takes 5.6 years to reach 80% disbursement, Lagarda et al. (2018) report. Slow disbursement can affect the ability of the Bank to support countries, especially at this critical juncture. The main objective of this analysis is to identify the characteristics of the operations and their execution that can maximize disbursements within 24 months after their approval.

We examined 1,152 sovereign-guaranteed (SG) investment loans approved between 2005 and 2019, and observed them through May 2020. Only 57% of those investment loans disbursed within the first 2 years after approval. Results from cluster and regression analyses show variations at the level of loan modality, sector, and borrowing country. Investment loans in the social sector are more likely to disburse within 2 years after approval. Loans Based on Results (LBR) are among the fastest disbursing. Loans that are slow to meet at least some of the clauses to start disbursing (the first eligibility condition), in general, fail at catching up to faster speeds. Projects that are originally expected to take longer to be completed disburse at lower speeds in the first 2 years after approval. Finally, country heterogeneity has a bigger role in explaining bigger disbursement rates than sectorial effects, meaning that constant features of recipient countries play an important role in explaining the speed at which different types of projects disburse (the loan disbursement profile).

These results will serve to inform future programming exercises and speed up disbursement processes.

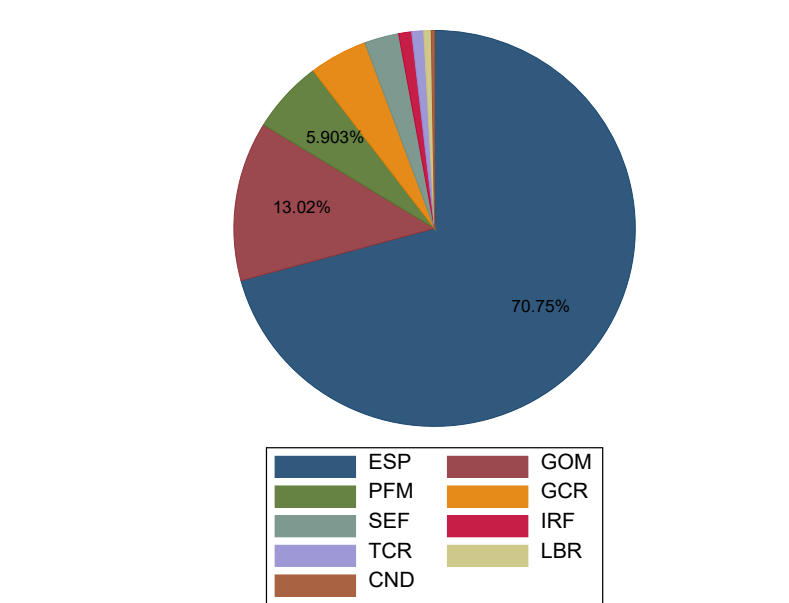
² Avellán, Cavalcanti, Leal and Lotti (2019) show that shorter preparation times do not translate into longer execution times, but further analyses on development objectives are needed. In a preliminary analysis, we found the percentage of loans disbursed in the two years since first eligibility to be positively correlated with a satisfactory project completion report, but there are too few observations available to draw conclusions. This remains an area for further research.

Data

Detailed information on IDB sovereign-guaranteed (SG) investment loans is taken from the IDB Enterprise Data Warehouse (EDW). Because our analysis focuses on the disbursement dynamic of loans, we exclude cancelled and inactive investment loan projects. The analysis also focuses only on the modalities currently in use: Specific Investment Operations (ESP); Global of Multiple Work Operations (GOM); Multiphase Operations (PFM); Global Credit Programs (GCR); Sector Facility (SEF); Immediate Response Facility (IRF); Technical Cooperation Loans (TCR); Loans Based on Results (LBR); and Contingency for Natural Disasters (CND). Because we want to explore country heterogeneities, we also exclude regional loans.

In total, we find 1,152 SG investment loans approved between 2005 and 2019, which we observe until May 2020. Most are Specific Investment Operations (ESP), and Global of Multiple Work Operations (GOM) (Figure 1).

Figure 1. Loans by Modality



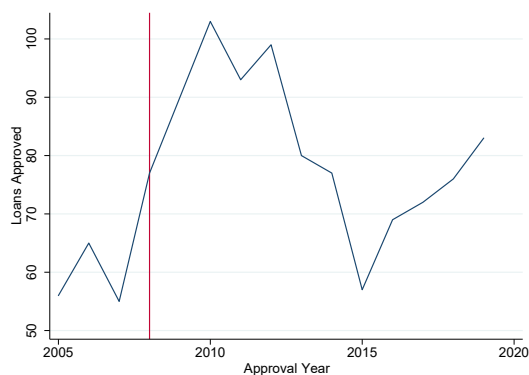
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: Specific Investment Operations (ESP); Global of Multiple Work Operations (GOM); Multiphase Operations (PFM); Global Credit Programs (GCR); Sector Facility (SEF); Immediate Response Facility (IRF); Technical Cooperation Loans (TCR); Loans Based on Results (LBR); Contingency for Natural Disasters (CND).

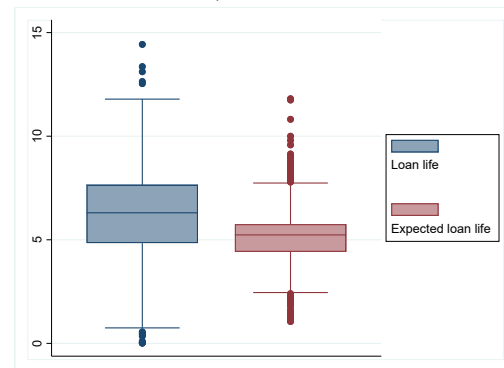
Project approvals spiked followed the global financial crisis, but on average almost 80 loans are approved per year (Figure 2, Panel A). Investment loans take 6.3 years between approval and total disbursement, on average, with the lengthiest 1% taking more than 11 years, and the fastest 1% less than 6 months. In general, at the time loans are approved, loans are expected to be disbursed more quickly than they actually are (Figure 2, Panel B).

Figure 2. Trends in Loan Approvals, Loan Life, and Expected Loan Life

Panel A. Approval trend of investment loans, 2005–19



Panel B. Box plot of life and expected life of investment loans, 2005–19



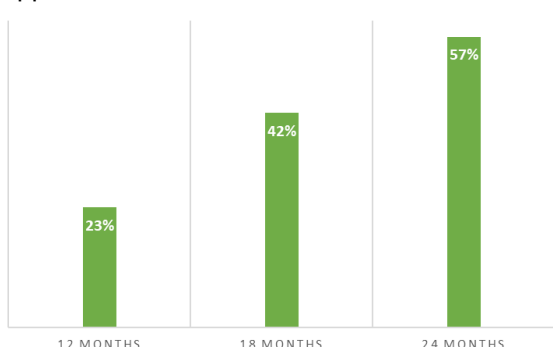
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: Panel A shows the number of SG investment loans approved between 2005 and 2019. In panel B, only investment loans that have been fully disbursed are considered. Panel B reports the box plot of the years between approval and closing date (loan life) and the expected years at the time of approval until the last disbursement (expected loan life).

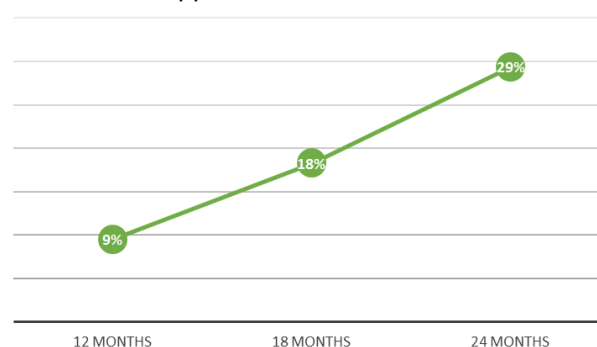
About 23% of investment loans started disbursing in the 12 months after approval and 42% after 18 months. However, more than half of investment loans (57%) do not start disbursing in the first 2 years (Figure 3, Panel A). For loans that start disbursing within 12 months, 9% of funds are disbursed after 12 months since the approval date. For loans that started disbursing within 18 months, 18% of funds are disbursed within 18 months since approval. For loans that start disbursing 24 months or more after approval, 29% of funds are disbursed after 24 months (Figure 3, Panel B). Indeed, investment loans take 15 months to start disbursing, on average, up to a maximum of nearly 7 years (83 months) (Figure 3, Panel C).

Figure 3. Percentage of Investment Loans Disbursing, Average Percentage Disbursed, and Time Between Approval and First Disbursement by Lending Instrument

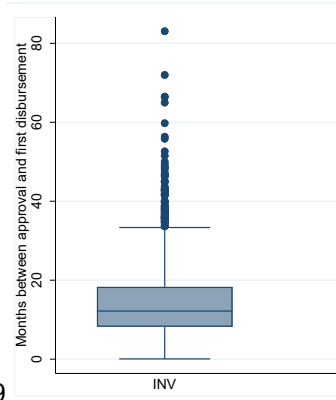
Panel A. Percentage of investment loans disbursing within 12, 18, and 24 months since approval



Panel B. Average percentage disbursed of investment loans disbursing within 12, 18 and 24 months since approval



Panel C. Box plot of life of investment loans,

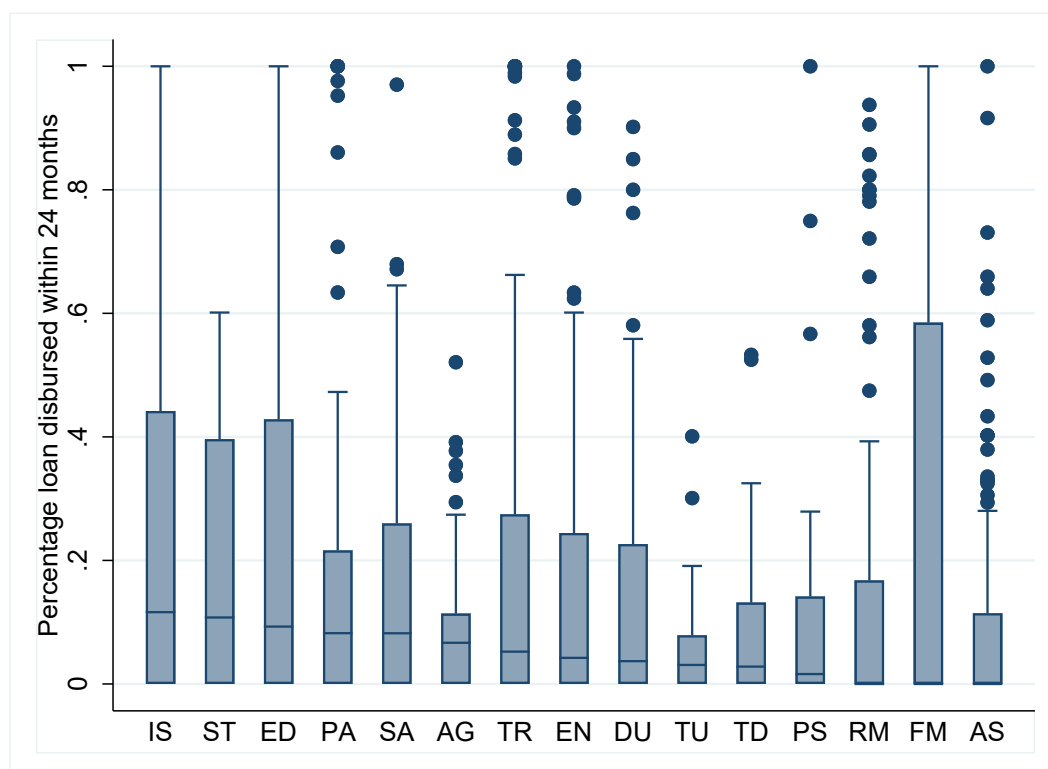


Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans (INV) and policy-based loans (PBL) approved between 2005 and 2019.

Note: Panel A depicts the percentage of investment loans disbursing within 12, 18 and 24 months since approval. Panel B depicts the average percentage disbursed of investment loans (as a % of the original amount approved) within 12, 18, and 24 months since approval. Panel C reports the box plot of the months between approval and first disbursement of investment loans.

Loans in certain sectors disburse much faster than others (Figure 4). The median investment loan in Social Investment (IS) or Innovation & Technology (ST) disburses 11.6% and 10.7% of the original amount within 2 years since approval. The median investment loan for Water & Sanitation (AS) and Financial Markets (FM) has not even started disbursing during the first 2 years. However, within sectors, there is also a lot of dispersion, with the top quartile of FM investment loans disbursing almost 60% of their original amount within 2 years since approval.

Figure 4. Investment Loans: Percentage Disbursed within 2 Years by Sector

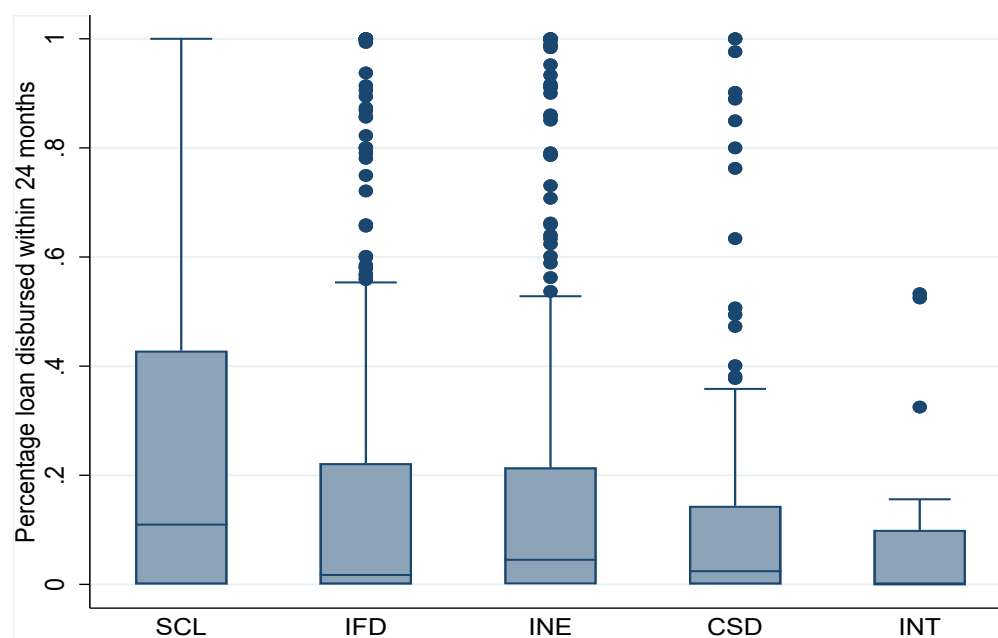


Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: Box plot of percentage of loans disbursed by sector. Regional Integration (RI) loans are excluded because only four investment loans were observed in this sector. AG: Agriculture & Development; AS: Water & Sanitation; DU: Urban Development & Housing; ED: Education; EN: Energy; FM: Financial Markets; IS: Social Investment; PA: Climate Change & Environment; PS: Private Firms; RM: Modernization of the State; SA: Health; ST: Innovation & Technology; TD: Trade & Integration; TR: Transportation; TU: Sustainable Tourism.

Certain IDB departments also disburse more quickly than others (Figure 5). The Social Sector Department (SCL) is among the fastest in disbursing funds to its projects.

Figure 5. Investment Loans: Percentage Disbursed within Two Years by IDB Department



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: Box plot of percentage loan disbursed by sector. SCL: Social Sector; IFD: Institutions for Development Sector; INE: Infrastructure and Environment Sector; CSD: Climate Change and Sustainable Development Sector; INT: Integration and Trade Sector.

Disbursement dynamics also vary by country. In Mexico and Ecuador, investment loans disburse faster, with 30% of the original amount approved disbursed within 2 years, on average (Figure 6, Panel A). In some countries, such as Honduras, projects start disbursing slowly but then pick up the pace; others, such as Costa Rica, start disbursing relatively fast but then lose speed. Other countries have slower disbursement patterns during the full execution process, including Guatemala, Barbados, and Paraguay (Figure 6, Panel B).

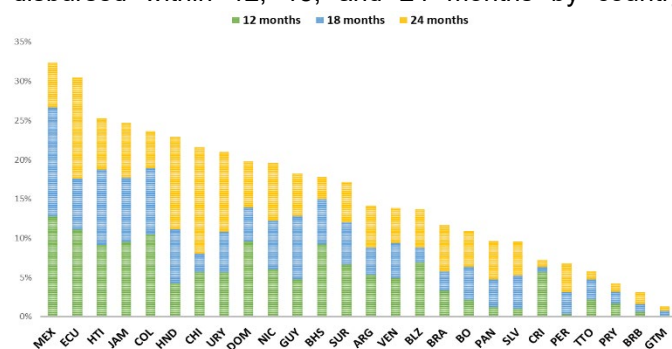
The different speeds of disbursements by country are certainly also related to some country characteristics, such as the requirements for ratification processes, which can slow down the whole execution process, or the country sector portfolio. Figure 6, Panel C shows the average days between approval and eligibility and between approval and ratification (in countries where this is required). Figure 6, Panel D, presents the distribution in the number of months necessary for projects approved in a year to reach first eligibility, i.e. to meet the first requirements to start disbursing. Guatemala experiences the longest time to meet the clauses for first eligibility and displays the lowest amounts disbursed: the median project has taken around 10 months to reach first eligibility since 2015 and those numbers have not improved much (Figure 6, Panel E). Disbursements patterns in investment loans differ greatly by sector within specific countries (Figure 7). Dominican Republic, Honduras, and Mexico are among the countries where disbursements occur faster in a 2-year horizon, and the countries with the highest percentage of investment loans prepared by the Social Sector Department (SCL).

Figure 6. Investment Loans: Average Percentage Disbursed in 12, 18, and 24 Months by Country

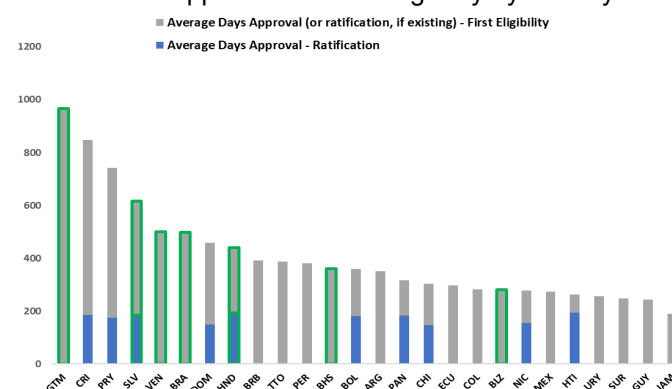
Panel A. Average percentage of investment loans disbursed within 24 months by country



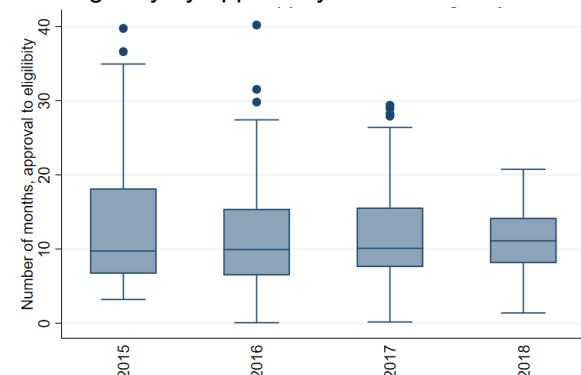
Panel B. Average percentage of investment loans disbursed within 12, 18, and 24 months by country



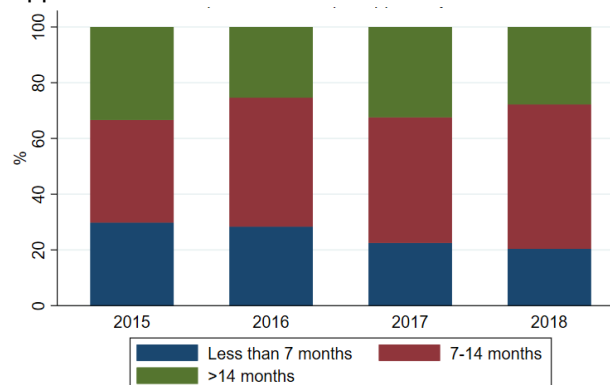
Panel C. Average days between approval and ratification and between approval and first eligibility by country



Panel D. Number of months between approval and first eligibility by approval year

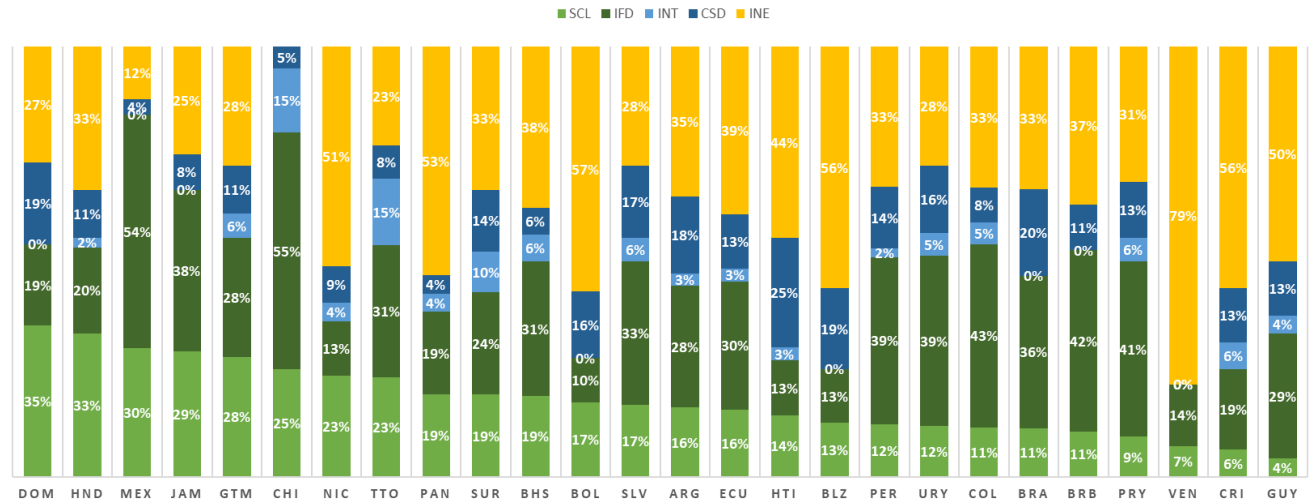


Panel E. Proportion of projects to reach eligibility by approval year



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Figure 7. Country Investment Loans Portfolio, by Department



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure depicts the sector portfolio of each country. SCL: Social Sector; IFD: Institutions for Development Sector; INT: Integration and Trade Sector; CSD: Climate Change and Sustainable Development Sector; INE: Infrastructure and Environment Sector.

This descriptive section shows that many factors are associated with disbursement speed. To further understand which ones play a major role in explaining these differences, the next section presents a more formal analysis where we can put all possible factors together and study their association with disbursement patterns.

Empirical Strategy

For the analysis, we will implement two main empirical strategies. First, we conduct a cluster analysis to split the dataset into subgroups of similar characteristics and disbursement speeds. This can help us separate projects by their disbursement speed and assist us in identifying common characteristics within clusters. Second, we conduct a regression analysis. We use a linear probability model to examine which observable characteristics are correlated with the probability of disbursing within 12, 18, or 24 months since approval, and an ordinary least squares (OLS) procedure to examine which observable characteristics are correlated to more rapid disbursing once disbursements have started.

1. Cluster Analysis

The cluster includes a set of numeric and categorical variables that have been normalized or transformed to dummy variables, as follows:

- Original amount. Refers to the total approved amount of the loan. Values have been rescaled to 0–1.

- Country, modality, department. These three variables have been transformed to dummy variables that take the value of 1 for each of the categories in each variable and 0 otherwise.
- Percent disbursed after 12 months, 18 months, and 24 months since approval. We transform each of these numeric variables into categorical values and later transform those categories into dummy variables. Categorical values are assigned as follows:
 - Percent disbursed from approval to 12 months
 - Value of 0, when percent disbursed is less than 8%
 - Value of 1, when percent disbursed is equal to or more than 8% (8% is equal to the 75th percentile value of the disbursements after 12 months)
 - Percent disbursed from approval to 18 months
 - Value of 0, when percent disbursed is 0% after 18 months since approval.
 - Value of 1, when percent disbursed is more than 0% and less than or equal to 6.4% (6.4% refers to the 50th percentile value of the disbursements after 18 months)
 - Value of 2, when percent disbursed is more than 6.4% and less than or equal to 22% (this bracket refers to the 50th percentile and 75th percentile of the disbursements after 18 months)
 - Value of 3, when percent disbursed is more than 22% after 18 months since approval
 - Percent disbursed from approval to 24 months
 - Value of 0, when percent disbursed is 0 % after 24 months from approval.
 - Value of 1, when percent disbursed is more than 0% and less than or equal to 22% disbursed (trying to capture those loans that start below the top performer after 18 months of approval)
 - Value of 2, when percent disbursed is more than 22% (aim at identifying those loans whose disbursements continue to increase from 18 months to 24 months)

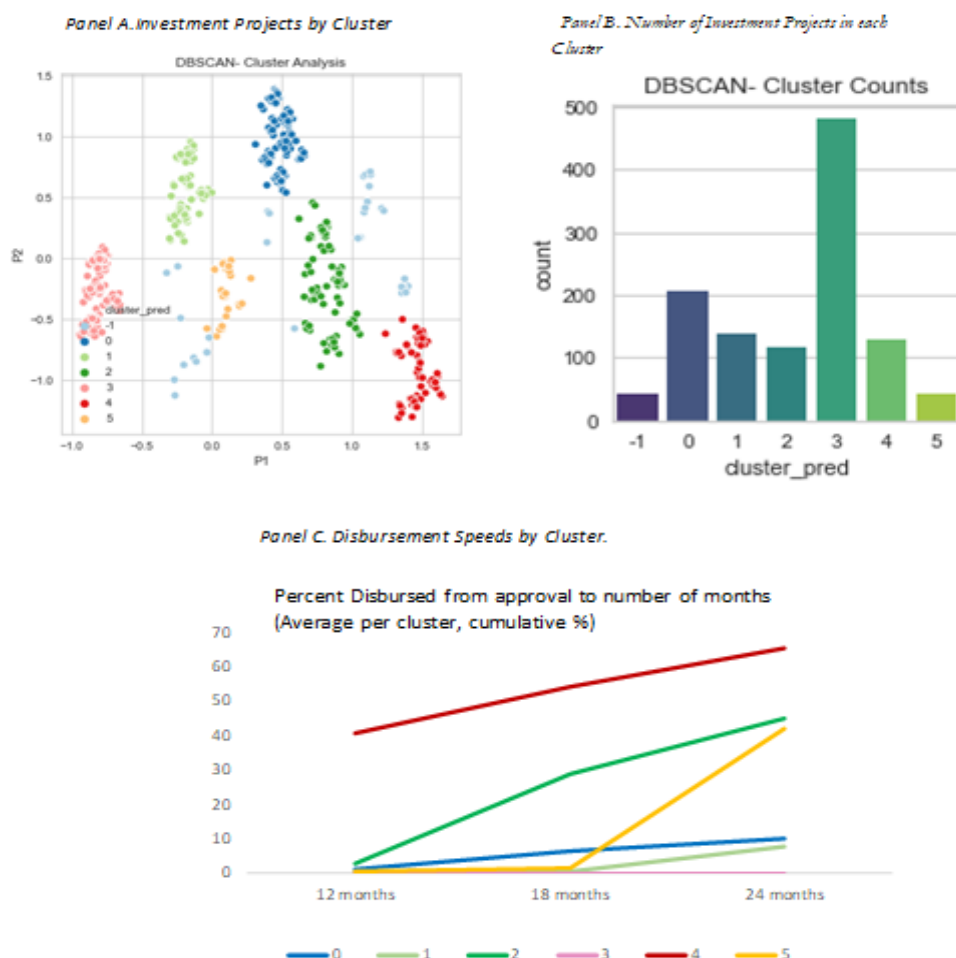
To reduce the dimensionality of the dataset, we transform these variables into 50 variables with 0 to 1 values by applying a principal component analysis (PCA) with 2 components.

We conduct the cluster analysis using a Density-Based Spatial Clustering of Applications with Noise (DBSCAN) algorithm that uses the distance between an observation to the nearest point to find clusters. More details on the cluster methodology can be found in Appendix A.

Results

We obtain 6 clusters or subgroups of projects within our dataset of investment projects. Figure 8, Panel A shows the representation of projects within each cluster in the space. Values of –1 refer to those projects identified by the clustering algorithm as noise or outliers. Figure 8, Panel B shows the number of projects within each cluster. Cluster 3 is the largest, with more than 400 project. Cluster 5 is the smallest, with approximately 50 projects. The remaining clusters range between 100 and 200 projects.

Figure 8. Cluster Analysis Results



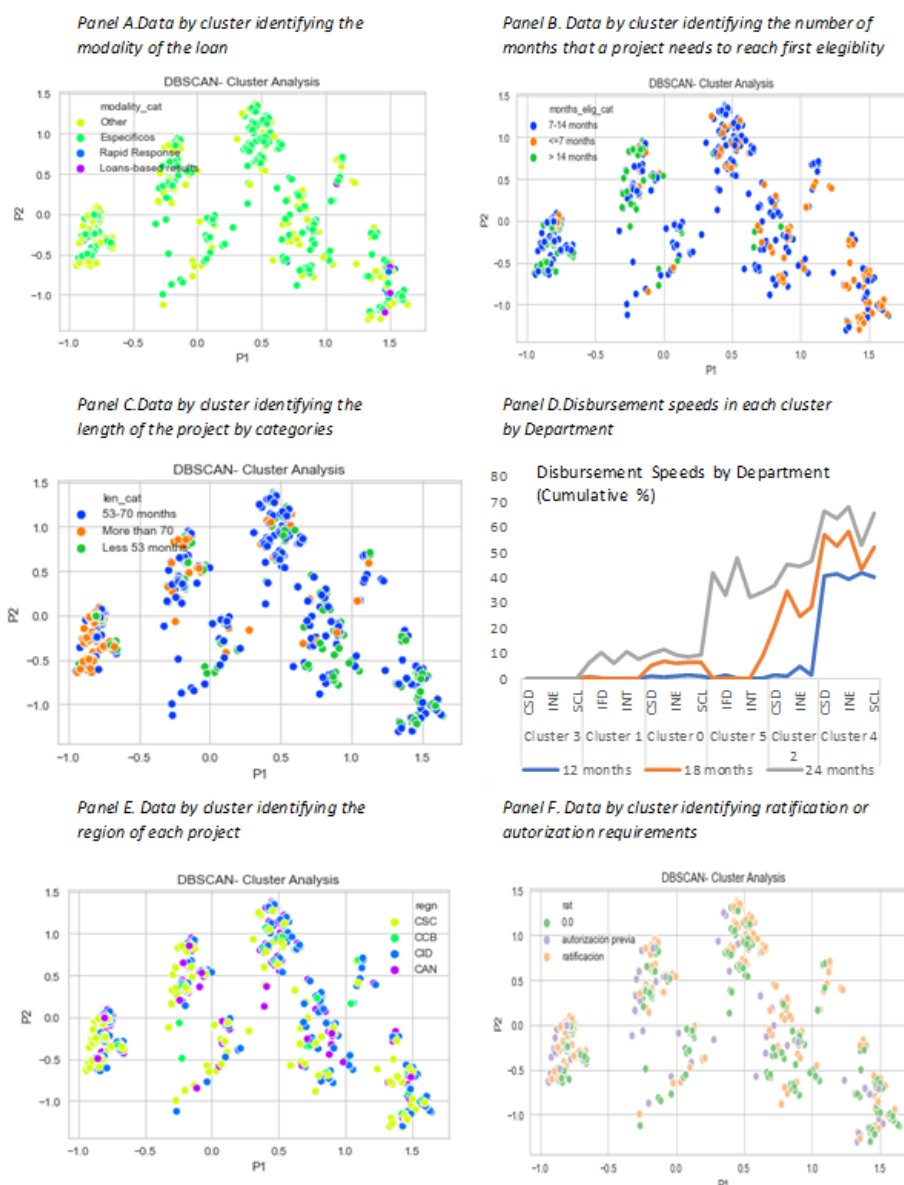
Source: Author's estimations using a Density-Based Spatial Clustering of Applications with Noise (DBSCAN) algorithm. For more details on the estimation, see appendix A.

Disbursement speeds vary per cluster, as shown in Figure 8, Panel C. Cluster 4 is the fastest, with about 40% of funds disbursed after 12 months since approval and nearly 70% after 24 months since approval. Clusters 2 and 5 are also somewhat fast, reaching around 40% of disbursements after 24 months since approval. However, both start very slowly and then pick up the pace of disbursements. Cluster 0 and 1 are slow to disburse projects, reaching less than 10% disbursed, on average, after 24 months since approval. Finally, cluster 3 includes all those projects that have not been able to disburse any amount even after 2 years from approval.

Figure 9 shows the results of the analysis looking at some project characteristics within the clusters. Three elements emerge. First, projects with the modalities of Loans Based on Results (LBRs) or Immediate Response Facility (IRFs) are within the fastest cluster to disburse (Cluster 4, Panel A). Second, projects that take longer than 14 months to reach first eligibility requirements, will not catch up to faster speed disbursements in the following months, as most projects slow to meet contractual clauses are contained in either the cluster that does not disburse (Cluster 3) or

in the slowest clusters (Clusters 0, 1, Panel B). Third, projects that are expected to take a longer time to be completed disburse at lower speeds. Projects with expected lengths of more than 70 months are contained in the stand-still cluster, cluster 3, or in clusters 1 and 0 (Panel C). Finally, we do not observe any striking difference in the disbursement speeds by department in each of the clusters (Panel D), or specific regions containing most of the slowest or fastest projects (Panel E), nor by legislative requirements at the country level for projects contained in the slowest clusters (Panel F, Clusters 3, 1, 0).

Figure 9. Patterns of Project Characteristics at the Cluster Level



Source: Authors' estimations using a Density-Based Spatial Clustering of Applications with Noise (DBSCAN) algorithm. For more details on the estimation, see appendix A. CCB: Caribbean group, CID: Central America, Mexico, Panama and the Dominican Republic; CSC: Southern Cone; CAN: Andean countries.

Note: Each data point corresponds to a development project. The chart shows the results of the cluster looking at some project characteristics within the cluster. Panel A(modality of the project), Panel B(eligibility criteria), Panel C(length of the project), Panel E(geographic region of the project), Panel F(ratification or authorization requirements).

2. Regression Analyses

We now turn to analyzing which observable characteristics are associated with disbursing at the investment-project level.

When modelling the disbursement of investment loans, one important feature that we must consider is that a substantial number of loans do not disburse in the 12/24 months following approval. That is, the outcome variable that we want to analyze is a mixed discrete-continuous variable with a mass point at zero. Before we can observe a positive level of disbursements, two hurdles must be passed: a participation decision (disbursing vs. not disbursing); and a disbursement decision (how much to disburse). This implies that positive disbursements outcomes will be observed only for the selected subsample of loans that are disbursing. Because the sample is based on values taken by a dependent variable, estimates of parameters may be inconsistent unless corrective measures are taken (Cameron and Trivedi, 2005). Hence, we estimate the two decisions separately.

First, we estimate the following linear probability model to determine which factors are correlated with the likelihood to disburse within a certain time period:

$$Prob(y = 1|X) = x'\beta , \quad (1)$$

where $Prob(y = 1|X)$ is the probability that loan i disburses within 12, 18, or 24 months since approval. x are loan characteristics, such as the importance of the loan in the country portfolio (measured as the original amount approved as a percentage of all amounts approved in a country); ratification dummies indicating whether the loans needs ratification or legislative authorization by the country to proceed; team leader location;³ expected time between approval and date of last disbursement; the modality of the loan; the socio-environmental risk (whether classified in high-risk category A⁴); the division that prepared the loan, or the department, or more generally, the sector; and the approval year.⁵ Instead of ratification dummies, we also estimate alternative equations with fixed effects for the recipient countries. In some exercises, we also include interactions between income levels of recipient countries, department, and loan modality. Standard errors are robust to heteroskedasticity.

Second, we restrict our sample only to loans that actually disburse (within 12, 18, or 24 months), and estimate a linear regression model:

$$y = x'\beta + \varepsilon, \quad (2)$$

where y is the percentage disbursed within 12, 18 or 24 months since the approval date. As an alternative, we also explore another time horizon: 12, 18, or 24 months since first eligibility. x is the same vector of loan characteristics used in equation 1, but in this case, it also includes the time between approval and first eligibility. Standard errors are robust to heteroskedasticity.

As an alternative, we reconduct the analysis through a Heckman selection model.

³ This characteristic is based on the last team leader observed.

⁴ Category A projects are those with the most significant and mostly permanent environmental and social impacts.

⁵ Initially, we included the time between the project profile date and approval date, but because this characteristic is not significant in regressions and is missing for 25 percent of the investment loans in the sample, we exclude it from the analysis.

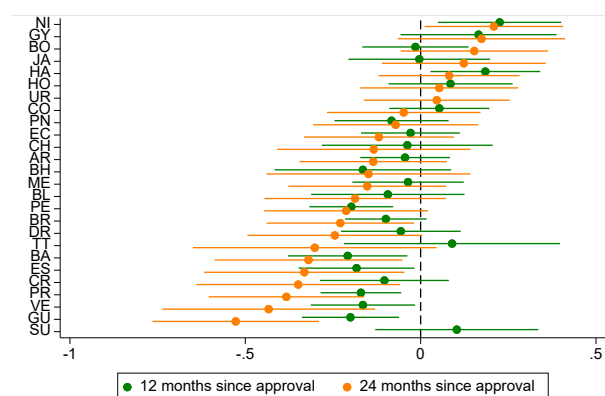
Country Fixed Effects. Figure 10, Panel A, reports the country fixed effects from estimating equation (1), where the omitted country is the median country in terms of percentage disbursed (that is, Uruguay in the 12 months since approval horizon, Suriname in the 24 months since approval). Nicaragua is the country with the greatest chances to disburse within the first 1 or 2 years, while Guatemala, Venezuela, Paraguay, Costa Rica, El Salvador, and Barbados are less likely to disburse compared to the median country.

For a project that disburses within 24 months, investment loans in Ecuador disburse the most quickly (Figure 10, Panel B).

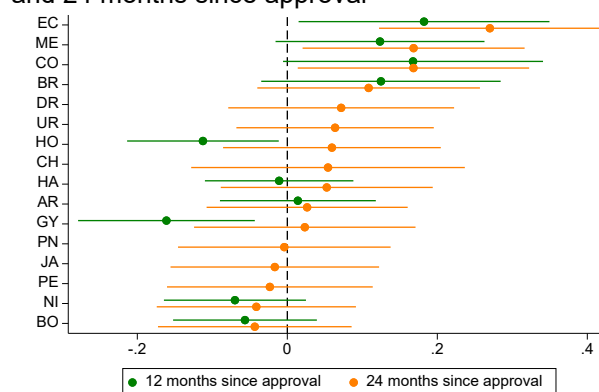
The fact that investment loans in some countries are obliged to undergo a ratification process before becoming eligible to disburse might cause delays, extending the period between approval and first eligibility. We then re-estimate equations (1) and (2) by considering the likelihood to disburse within the first 12/24 months since first eligibility and the percentage disbursed since first eligibility once investment loans disburse. In these estimations we also control for the time between approval and first eligibility.⁶ As can be seen in Figure 10, Panel C, Nicaragua is still a top performer within 12 months, but Costa Rica, Honduras, Bolivia, and Suriname also become more likely to be disbursing within 2 years since first eligibility. When we examine their performance in the 2 years following first eligibility rather than approval, Mexico and Ecuador are less likely to be disbursing than the median country, but once they do, they disburse more (Figure 10, Panel D).

Figure 10. Results with Country Fixed Effects

Panel A. Relative probability of disbursing within 12 and 24 months since approval

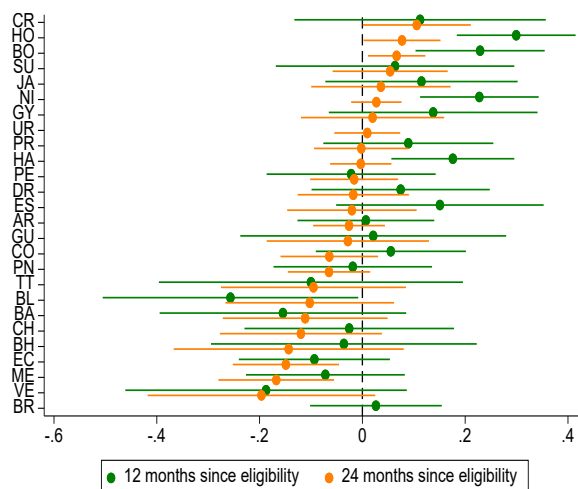


Panel B. Relative percentage disbursed within 12 and 24 months since approval

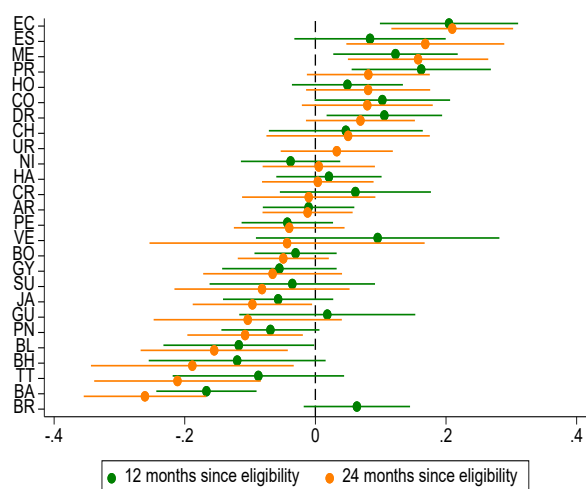


⁶ It is important to control for the time between approval and first eligibility because it has been found to be positively correlated with the probability of having problems in execution (Avellán, Cavalcanti, Lotti and Cossens, 2018).

Panel C. Relative probability of disbursing within 12 and 24 months since first eligibility



Panel D. Relative percentage disbursed within 12 and 24 months since first eligibility



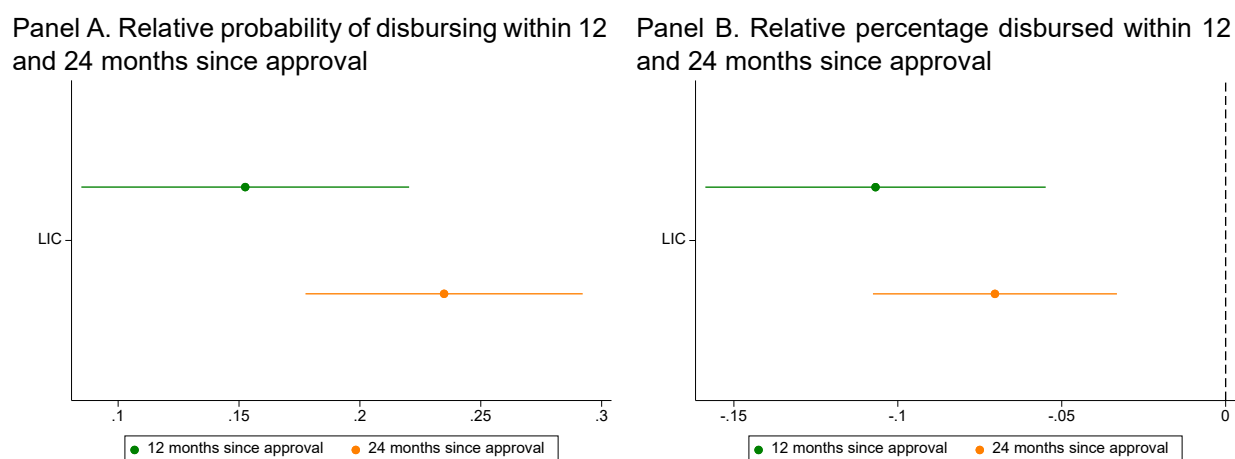
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure reports the coefficients of country fixed effects from estimating equations (1)-(2) since approval (Panels A and B) or since first eligibility while adding the time between approval and first eligibility as an additional control (Panels C and D). The median country in terms of percentage disbursed within 12 months since approval or first eligibility is Uruguay; within 24 since approval is Suriname; within 24 months since first eligibility is Brazil. Confidence intervals at the 95% significance level.

Country Income Level. When grouping countries by income levels,⁷ we find that, overall, projects in lower-income countries (LICs) (that is, low- and lower-middle-income countries) are more likely to disburse than higher-income countries (HICs) (that is, upper-middle- and high-income countries) (Figure 11, Panel A). Once they disburse, disbursements are also faster in lower-income countries than in higher-income countries (Figure 11, Panel B). This might be related to supply-side or demand-side factors. On the one hand, it could relate to the fact that governments in lower-income countries have a financial incentive to disburse faster as access to loans is more limited. On the other hand, it could be that the IDB puts extra effort to disburse faster in these countries as developments gaps tend to be bigger.

⁷ To divide countries by income group, we consider the 2020 income level from the World Bank World Development Indicators (WDI). We consider the following to be higher-income countries (HICs) Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay, Venezuela. We consider the following to be lower-income countries (LICs) Bolivia, El Salvador, Haiti, Honduras, Nicaragua.

Figure 11. Disbursements by Country Income Level



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019; income level from 2020 World Bank World Development Indicators.

Note: The figure reports the coefficients of income-level fixed effects of the recipient country from estimating equations (1)-(2) since approval (Panels A and B). The omitted income level is higher-income countries. Confidence intervals at the 95% significance level. HIC (higher-income countries): Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay, Venezuela. LIC (lower-income countries): Bolivia, El Salvador, Haiti, Honduras, Nicaragua.

Modality Fixed Effects. Loans Based on Results (LBRs) are more likely to disburse than loans in the median modality, and once disbursing, they are more likely to disburse higher percentages within the first 1 or 2 years since approval. Immediate Response Facility (IRF) loans are also more likely to be disbursing within the first 12 months and, once disbursing, to be disbursing higher amounts within the first 24 months (Figure 12).

IDB approved only 7 LBRs during the sample period: 4 in Uruguay, 1 in Argentina, 1 in Dominican Republic, and 1 in Brazil. A LBR is an investment loan that links disbursements to the achievement of predefined results (OVE, 2020). As can be seen in Appendix B, LBRs do not differ from other investment loans in terms of amounts approved or expected duration (Figure B1) and all the LBRs that disburse faster are concentrated in Uruguay (Figure B2). However, even within Uruguay, LBR disburse faster than projects with the same life expectancy (Figure B3).

If the probability of disbursing is measured since first eligibility (Figure B4, Panel A), LBRs and IRF continue to among the fastest disbursing. PFM are also more likely to disburse than the loan in the median modality. Once they disburse, CND loans disburse more, as do IRF, but only in a 12-month window (Figure B4, Panel B).

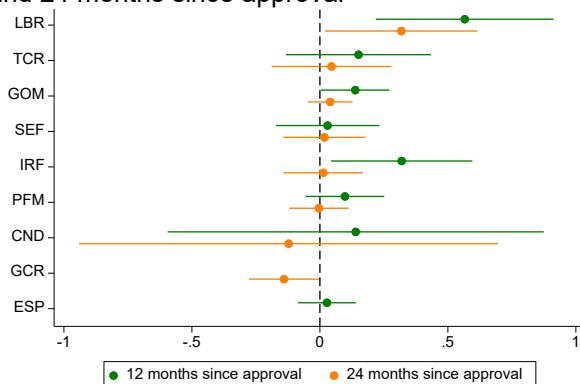
With the LBR, a country can request an initial disbursement of up to 15% and retroactive disbursement (up to 15%) for results achieved before the LBR reaches eligibility (between the approval of the project profile and the time of its eligibility). The combined amount of initial and retroactive payments cannot exceed 25% (OVE, 2020). To investigate whether this feature lies behind the higher probability of LBRs being disbursed, a dummy signaling loans that receive retroactive financing is included in the models. Once controlling for this, LBRs no longer show a higher probability of disbursing in the 2 years after approval and their amount disbursed when

disbursing is no longer different from the median modality (Figure B5). This suggests that retroactive financing is one of the mechanisms behind the stronger performance of LBRs.

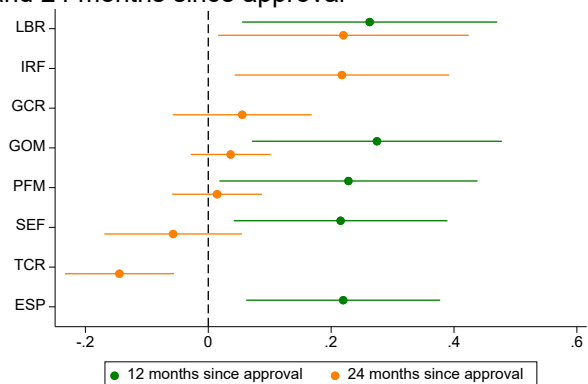
Since LBR and IRF are two instruments that by design are different from all the others, in a robustness check they are excluded from the analysis. Results do not differ (Figure B6).

Figure 12. Modality Fixed Effects

Panel A. Relative probability of disbursing within 12 and 24 months since approval



Panel B. Relative percentage disbursed within 12 and 24 months since approval



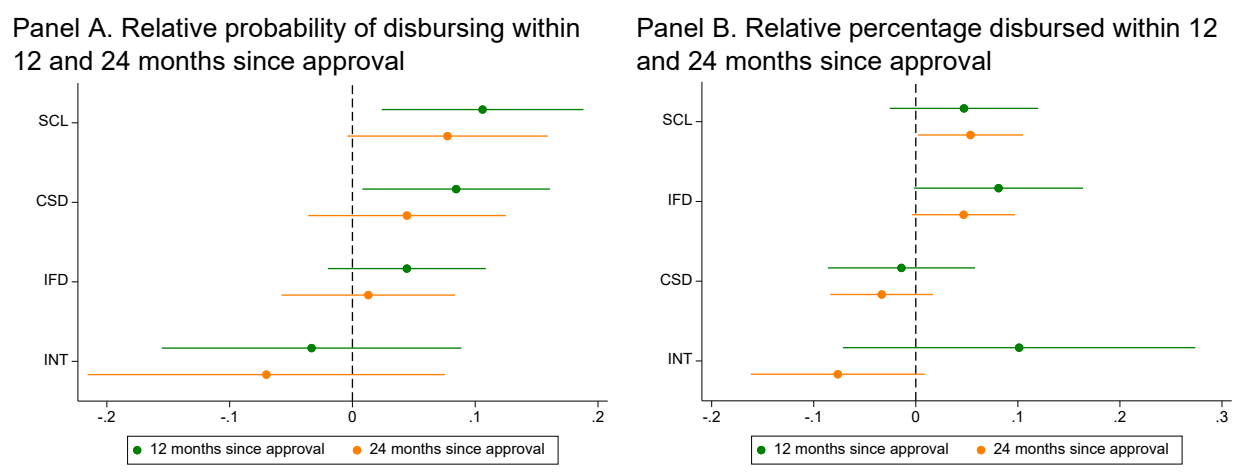
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure reports the coefficients of modality fixed effects from estimating equations (1)-(2) since approval (Panels A and B). The median modality in terms of percentage disbursed within 12 months since approval is GCR, and within 24 months is ESP. Confidence intervals at the 95% significance level. CND: Contingency for Natural Disasters; ESP: Specific Investment Operation; GCR: Global Credit Operation; GOM: Global of Multiple Works Operation; IRF: Immediate Response Facility; LBR: Loans Based on Results; PFM: Multi-Phase Lending Project; SEF: Sector Facility; TCR: Technical Cooperation Loan.

Department Fixed Effects. As can be seen in Figure 13, Panel A, investment loans in the Social Sector Department (SCL) are more likely to be disbursing within 12 months since approval, when compared to the median department, Infrastructure and Environment (INE). Once projects disburse, SCL projects disburse faster (Panel B).

There are no longer differences among sectors in the probability of disbursing if we consider a 12- or 24-months window since first eligibility (Figure B7, Panel A), but once disbursing, SCL projects disburse faster even when counting the period since first eligibility (Figure B7, Panel B).

Figure 13. Department Fixed Effects



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

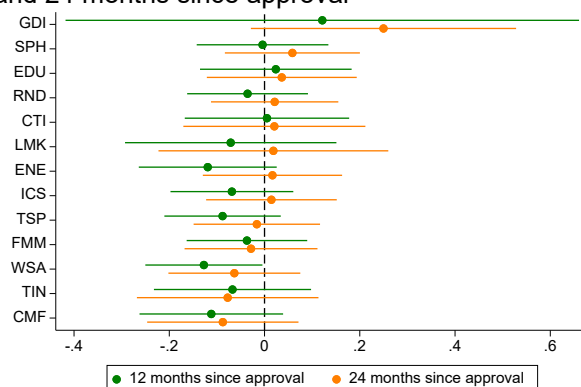
Note: The figure reports the coefficients of department fixed effects from estimating equations (1)-(2) since approval (Panels A and B). The median department in terms of percentage disbursed both within 12 and 24 months since approval is INE. Confidence intervals at the 95% significance level. CSD: Climate Change and Sustainable Development Sector; IFD: Institutions for Development Sector; INE: Infrastructure and Environment Sector; INT: Integration and Trade Sector SCL: Social Sector.

Division Fixed Effects. Departments at the IDB are divided by division.⁸ As can be seen in Figure 14, Panel A, projects in Water & Sanitation (WSA) are less likely to disburse than the median division within 12 months after approval, but after an initial delay are back on track: that is, after 24 months their disbursement profile is no longer different from that of projects in the median division. Once they disburse, loans in the Capital Markets and Financial Institutions Division (CMF) and Social Protection & Health (SPH) disburse faster (Figure 14, Panel B).

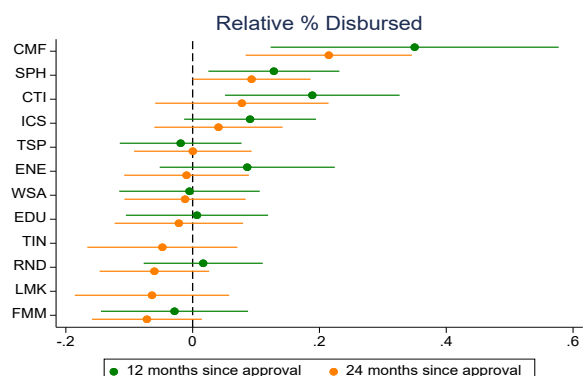
⁸ Climate Change Division (CCS); Capital Markets and Financial Institutions Division (CMF); Competitiveness Technology and Innovation (CTI); Education (EDU); Energy (ENE); Fiscal and Municipal Management (FMM); Housing and Urban Development (HUD); Institutional Capacity of State Division (ICS); Integration and Trade Sector (INT); Labor Markets (LMK); and the Trade and Investment Unit (TIU).

Figure 14. Division Fixed Effects

Panel A. Relative probability of disbursing within 12 and 24 months since approval



Panel B. Relative percentage disbursed within 12 and 24 months since approval



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

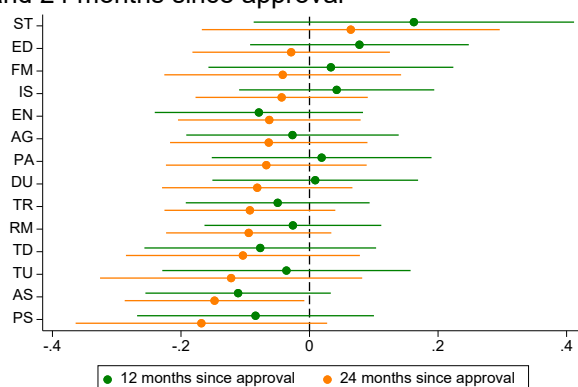
Note: The figure reports the coefficients of division fixed effects from estimating equations (1)-(2) since approval (Panels A and B). The median division in terms of percentage disbursed within both 12 and 24 months is Housing and Urban Development (HUD). Confidence intervals at the 95% significance level. CCS: Climate Change Division; CMF: Capital Markets and Financial Institutions Division; CTI: Competitiveness Technology and Innovation; EDU: Education; ENE: Energy; FMM: Fiscal and Municipal Management; GDI: Gender & Diversity; ICS: Institutional Capacity of State Division; LMK: Labor Markets; RND: Environment, Rural Development & Disaster Risk Management; SPH: Social Protection & Health; TIN: Integration and Trade Sector; TSP: Transport; WSA: Water & Sanitation.

Sector Fixed Effects. Projects can also be classified depending on their sector.⁹ Projects in Water & Sanitation (AS) are less likely to disburse within 24 months since approval compared to the loan in the median sector, health (SA) (Figure 15, Panel A). Once they disburse, Financial Markets (FM) loans disburse the fastest, and Agriculture & Development (AG), Climate Change & Environment (PA), and Trade & Integration (TD) loans the slowest (Figure 15, Panel B).

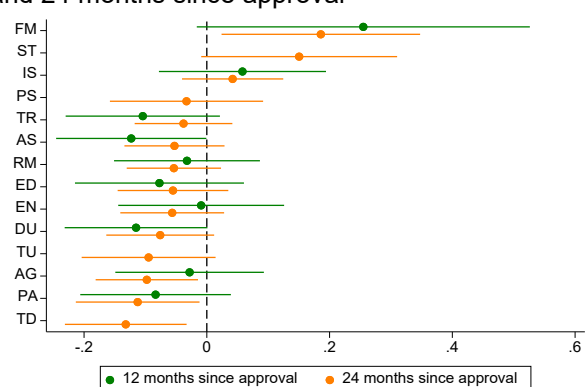
⁹ Agriculture & Development (AG); Water & Sanitation (AS); Urban Development & Housing (DU); Education (ED); Energy (EN); Financial Markets (FM); Social Investment (IS); Climate Change & Environment (PA); Private Firms (PS); Regional Integration (RI); Modernization of the State (RM); Health (SA); Innovation & Technology (ST); Trade & Integration (TD); Transportation (TR); Sustainable Tourism (TU),

Figure 15. Sector Fixed Effects

Panel A. Relative probability of disbursing within 12 and 24 months since approval



Panel B. Relative percentage disbursed within 12 and 24 months since approval



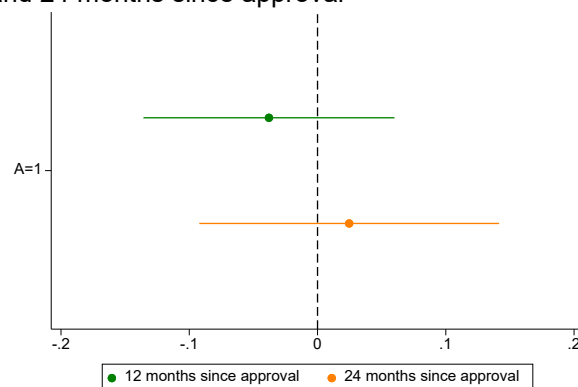
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure reports the coefficients of sector fixed effects from estimating equations (1)-(2) since approval (Panels A and B). The median sector in terms of percentage disbursed within both 12 and 24 months is SA. Confidence intervals at the 95% significance level. AG: Agriculture & Development; AS: Water & Sanitation; DU: Urban Development & Housing; ED: Education; EN: Energy; FM: Financial Markets; IS: Social Investment; PA: Climate Change & Environment; PS: Private Firms; RM: Modernization of the State; SA: Health; ST: Innovation & Technology; TD: Trade & Integration; TR: Transportation; TU: Sustainable Tourism. Regional Integration (RI) projects are not considered because there are not enough observations.

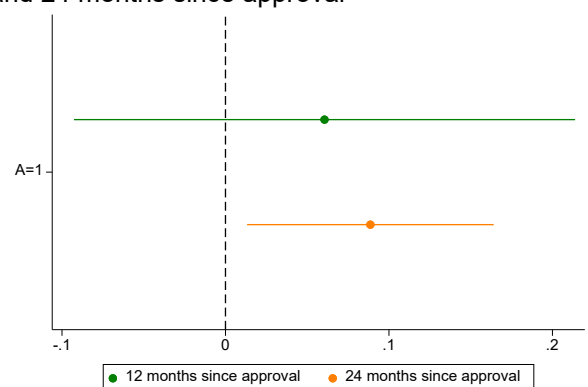
Environmental Classification. Being classified as high risk in terms of socioenvironmental risks does not seem to have significant effects in our variables of interest even though, once disbursing, “A” projects disburse faster (Figure 16). To test whether this is driven by more complex projects that are classified as “A” and take longer time to prepare but can later disburse faster, we add loan preparation time (measured as days between the loan start date and its approval date) as a control, but results are unchanged. The robustness of the result is in line with the results of Avellán, Cavalcanti, Leal and Lotti (2019) and Avellán, Cavalcanti, Lotti (2019), who find no correlations between preparation time and execution time of IDB-funded projects.

Figure 16. Environmental Classification

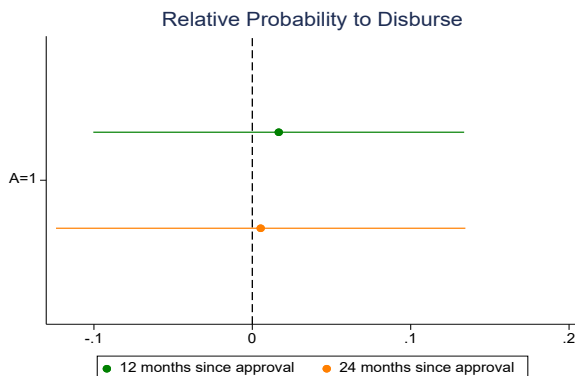
Panel A. Relative probability of disbursing within 12 and 24 months since approval



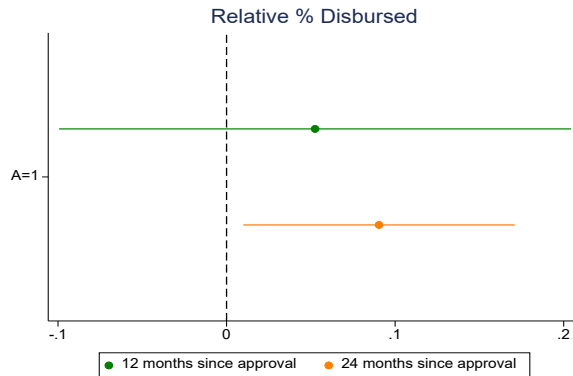
Panel B. Relative percentage disbursed within 12 and 24 months since approval



Panel C. Relative probability of disbursing within 12 and 24 months since approval, adding preparation time as a control



Panel D. Relative percentage disbursed within 12 and 24 months since approval, adding preparation time as a control



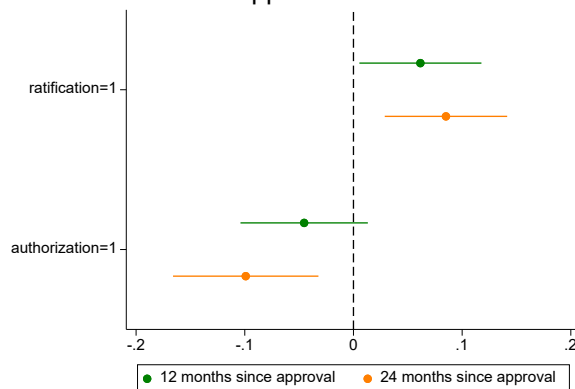
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure reports the coefficients of being classified as high risk (category A) in terms of socio-environmental risks from estimating equations (1)-(2) since approval (Panels A and B). In Panels C and D, preparation time (days between loan start date and approval date) is added as a control to equation (1)-(2), respectively.

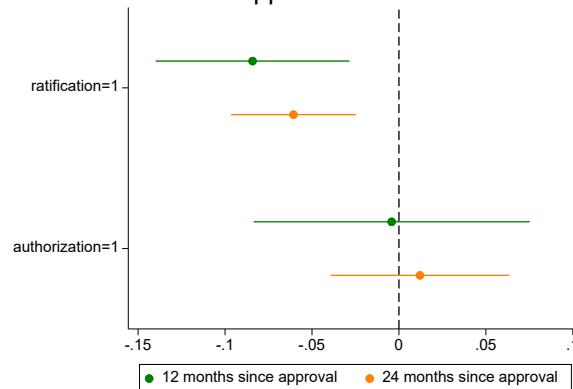
Ratification Process. Before disbursing, loans need to meet certain clauses to become eligible to disburse. Borrowing members differ in the requirements, with Bahamas, Belize (for loans greater than \$5 million), Brazil, El Salvador, Guatemala, Honduras, and Venezuela needing legislative approval, and Bolivia, Chile, Costa Rica, El Salvador, Haiti, Honduras, Nicaragua, Panama, Paraguay, and Dominican Republic needing legislative ratification. Figure 17 shows that loans are more likely to disburse within 12 or 24 months since approval in countries where ratification is needed, and less likely to disburse in countries where legislative authorization is needed (Panel A). However, once loans start disbursing, those in countries where a ratification process is required disburse more slowly (Panel B). The probability of disbursing in countries where ratification is needed becomes even greater in the 12 or 24 months since first eligibility: that is, once the loan has been ratified and has met all the requirements to start disbursing.

Figure 17. Ratification Process

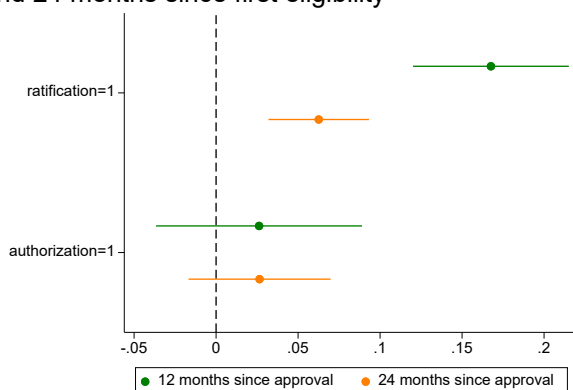
Panel A. Relative probability of disbursing within 12 and 24 months since approval



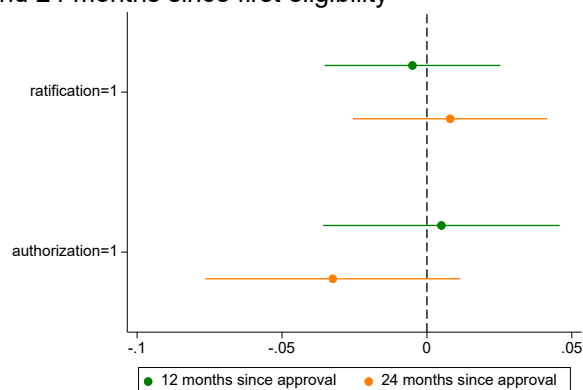
Panel B. Relative percentage disbursed within 12 and 24 months since approval



Panel C. Relative probability of disbursing within 12 and 24 months since first eligibility



Panel D. Relative percentage disbursed within 12 and 24 months since first eligibility



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure reports the coefficients of needing ratification after signature or previous legislative authorization from estimating equations (1)-(2) since approval (Panels A and B) or from estimating equations (1)-(2) since first eligibility (Panels C and D) while adding the time between approval and first eligibility as an additional control. Countries needing previous legislative authorization are: Bahamas; Belize (for loans greater than \$5 million); Brazil; El Salvador; Guatemala; Honduras; Venezuela. Countries needing ratification after signature are: Bolivia; Chile; Costa Rica; Dominican Republic; El Salvador; Haiti; Honduras; Nicaragua; Panama; Paraguay.

Other Robustness Checks. Because it seems that more complicated projects are approved in the fourth quarter of the year, we add as a control in equations (1)-(2) a dummy indicating loans approved in that quarter. Results are consistent with our baseline (Figure B8). The only difference concerns countries requiring legislative authorization. These countries are now less likely to be disbursing and once disbursing, disburse lower percentages.

So far, we have modeled the probability of disbursing and the amount disbursed separately, treating the two equations as independent. As a robustness check, we fit a Heckman selection model for mixed discrete-continuous outcomes, which allows for the errors in equations (1) and (2) to be correlated. In the second step of the model, the dependent variable is the logarithmic transformation of the percentage amount disbursed (missing when loans are not disbursing). The fitted value of the inverse Mills ratio estimated from the first step is included (for more details on the methodology see Heckman 1976, 1979; Cameron and Trivedi, 2005). As the exclusion restriction, we assume that the need for a ratification process or legislative authorization can determine the probability of a loan to be disbursing but not the amount disbursed. Hence, dummies indicating whether a loan needs a ratification process or legislative authorization enter the first part of the model (the decision to disburse equation) but not the second (the level of disbursement equation). As can be seen in Figure B9, results are consistent with those presented so far.

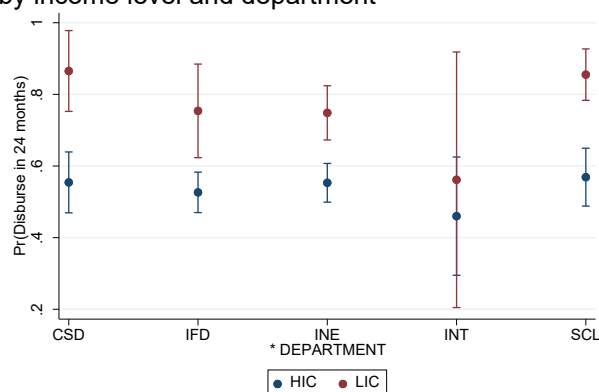
Operational Takeaways. To provide more tailored insights, equations (1) and (2) are estimated by including interactions between country-variables and sector-variables: specifically, interactions between income-levels of recipient countries and the loan department. For any given department, the average project is more likely to disburse within 24 months when lending to lower-income countries, except for the Integration and Trade Sector (INT) department (Figure 18, Panel A).

Once projects disburse, the average Infrastructure and Environment Sector (INE) project will disburse faster for higher-income countries (Figure 18, Panel B).

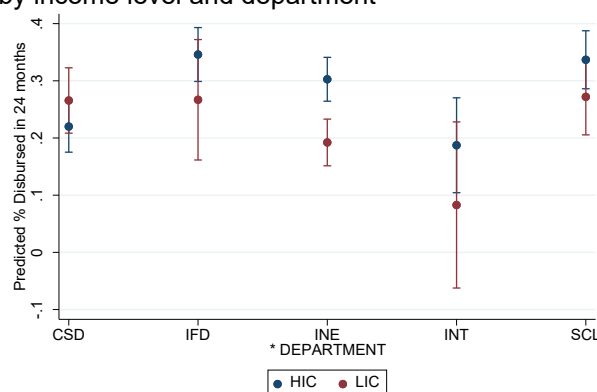
The number of observations is too low to draw conclusions about modality and department.

Figure 18. Adjusted Predictions by Income Level and Loan Department

Panel A. Adjusted predictions of probability of disbursing within 12 and 24 months since approval, by income level and department



Panel B. Adjusted predictions of percentage disbursed within 12 and 24 months since approval, by income level and department



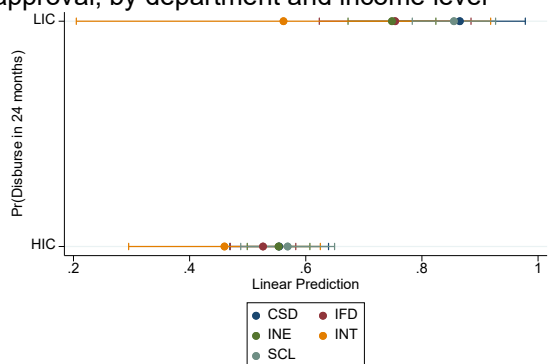
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019; income level from 2020 World Bank World Development Indicators.

Note: Predicted probabilities of disbursing depending on department and income level of recipient country, keeping all other covariates at mean values. Confidence intervals at 95% significance level. HIC (higher-income countries): Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay, Venezuela. LIC (lower-income countries): Bolivia, El Salvador, Haiti, Honduras, Nicaragua. CSD: Climate Change and Sustainable Development Sector; IFD: Institutions for Development Sector; INE: Infrastructure and Environment Sector; INT: Integration and Trade Sector; SCL: Social Sector

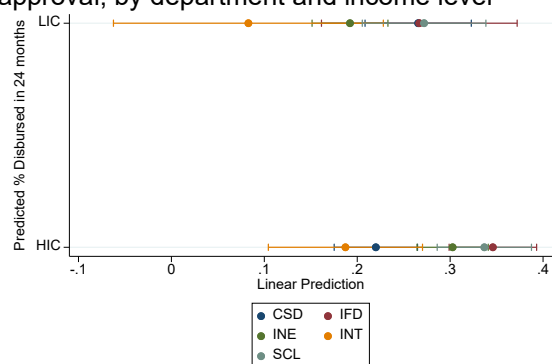
No significant differences among departments emerge as to the probability of disbursing (Figure 19, Panel A). Once projects disburse, for staff working with higher-income countries, projects in SCL and IFD are more likely to disburse faster than in CSD or INT (Figure 19, Panel B).

Figure 19. Adjusted Predictions by Department and Income Level

Panel A. Adjusted predictions of probability of disbursing within 12 and 24 months since approval, by department and income level



Panel B. Adjusted predictions of percentage disbursed within 12 and 24 months since approval, by department and income level



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019; income level from 2020 World Bank World Development Indicators.

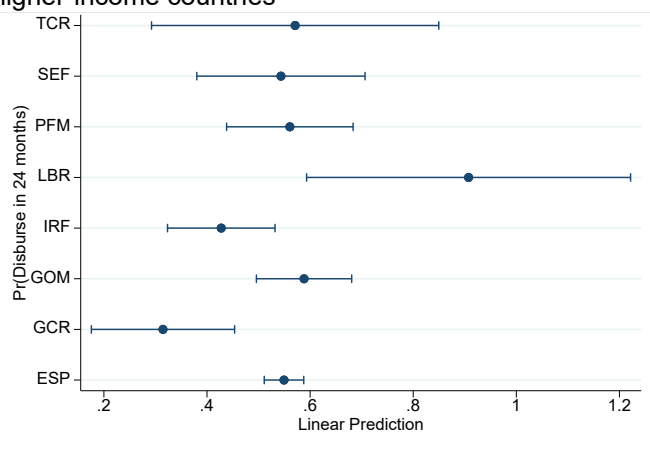
Note: Predicted probabilities of disbursing depending on department and income level of recipient country, keeping all other covariates at mean values. Confidence intervals at 95% significance level. HIC (higher-income countries): Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay, Venezuela. LIC (lower-income countries): Bolivia, El Salvador, Haiti, Honduras, Nicaragua. Sectors are as follows: CSD: Climate Change and Sustainable Development Sector; IFD: Institutions for Development Sector; INE: Infrastructure and Environment Sector; INT: Integration and Trade Sector; SCL: Social Sector.

For higher-income countries, LBR will be more likely to be disbursing within 24 months compared to IRF and GCR (Figure 20, Panel A). For lower-income countries, there are too few observations to draw conclusions.

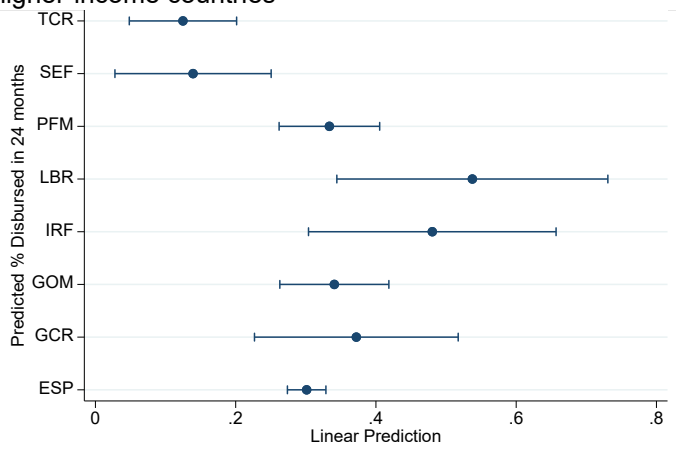
Once disbursing, the average LBR projects will disburse faster for higher-income countries, while the average TCR and SEF projects will disburse more slowly (Figure 20, Panel B).

Figure 20. Adjusted Predictions by Modality in Higher-Income Countries

Panel A. Adjusted predictions of probability of disbursing within 12 and 24 months since approval by modality in higher-income countries



Panel B. Adjusted predictions of percentage disbursed within 12 and 24 months since approval by modality in higher-income countries



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019; income level from 2020 World Bank World Development Indicators.

Note: Predicted probabilities of disbursing depending on modality in higher-income level countries, keeping all other covariates at mean values. Confidence intervals at 95% significance level. Modalities are as follows: TCR: Technical Cooperation Loan; SEF: Sector Facility; PFM: Multi-Phase Lending Project; LBR: Loan Based on Results; IRF: Immediate Response Facility; GOM: Global of Multiple Works Operation; GCR: Global Credit Operation; ESP: Specific Investment Operation. CND (Contingency for Natural Disasters) is excluded because there are not enough observations. HIC (higher-income countries): Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Guyana, Jamaica, Mexico, Panama, Paraguay, Peru, Suriname, Trinidad & Tobago, Uruguay, Venezuela. LIC (lower-income countries): Bolivia, El Salvador, Haiti, Honduras, Nicaragua.

Finally, an examination of the additional value of country fixed effects and department fixed effects in accounting for the probability of disbursing within 24 months since approval is provided. Following Denizer, Kaufmann, and Kraay (2013), the variation in the probability of disbursing is decomposed into variation due to country fixed effects and variation due to department fixed

effects through a standard two-way Analysis of Variance (ANOVA) table (Table 1). Both country fixed effects and department fixed effects are significant (as can be seen by the p-values), but in terms of magnitudes, the mean squared variation of country fixed effects (which adjusts for the fact that there are more country fixed effects than department fixed effects) is higher, suggesting that the role of country fixed effects is more important than the role of department fixed effects.¹⁰

This result has implications for the design of operations. On the one hand, it is important to consider that recipient countries will have an important role in determining the loan disbursement profile, and these restrictions need to be internalized when planning the execution of a project. On the other hand, a more thorough analysis should be conducted within countries to identify which bottlenecks slow down disbursements, for example to reach first eligibility, and to evaluate what can be done to overcome them.

Table 1. Country and Department Fixed Effects: Analysis of Variance of Probability to Disburse within 24 Months since Approval

	Partial sum of squares	Degrees of freedom	Mean sum of squares	F-statistic	Prob > F
Department fixed effects	2.63	4	0.66	3.19	0.013
Country fixed effects	47.47	25	1.90	9.24	0.000
Residual	230.50	1,122	0.21		
Total	282.72	1,151	0.25		

Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: This table reports a standard two-way ANOVA where the variation in the probability of disbursing within 24 months since approval is decomposed into variation attributable to country fixed effects, department fixed effects, and residual variation.

Conclusion

During the COVID-19 pandemic, multilateral development banks have increased their support to developing and emerging countries by approving loans specifically aimed at the pandemic and recovery, and by increasing the speed of disbursements of existing loans to give as much liquidity as possible to struggling borrowing members. Thus, it is very important to know which types of investments loans have disbursed faster, historically.

Our analysis shows that only 57% of investment loans approved start disbursing in the 24 months following their approval. Through a cluster analysis, we find six subgroups of investments projects in our dataset that disburse at different speeds, with one cluster reaching nearly 70% of disbursements more than 2 years since approval, on average. Two other clusters reach 40% of disbursements after 2 years, on average. The remaining clusters have made no disbursements at all or have disbursed less than 10 percent, on average. At the cluster level, IRFs and LBRs are among the fastest loans to disburse. In addition, projects that are slow to meet first eligibility do

¹⁰ These results are robust to the inclusion of approval year fixed effects in the analysis. When comparing country fixed effects and division fixed effects, we also find that country fixed effects play a more relevant role in accounting for the probability of disbursing within 2 years since approval.

not succeed in catching up to faster disbursements speeds. Projects that are expected to take longer to execute disburse at lower speeds.

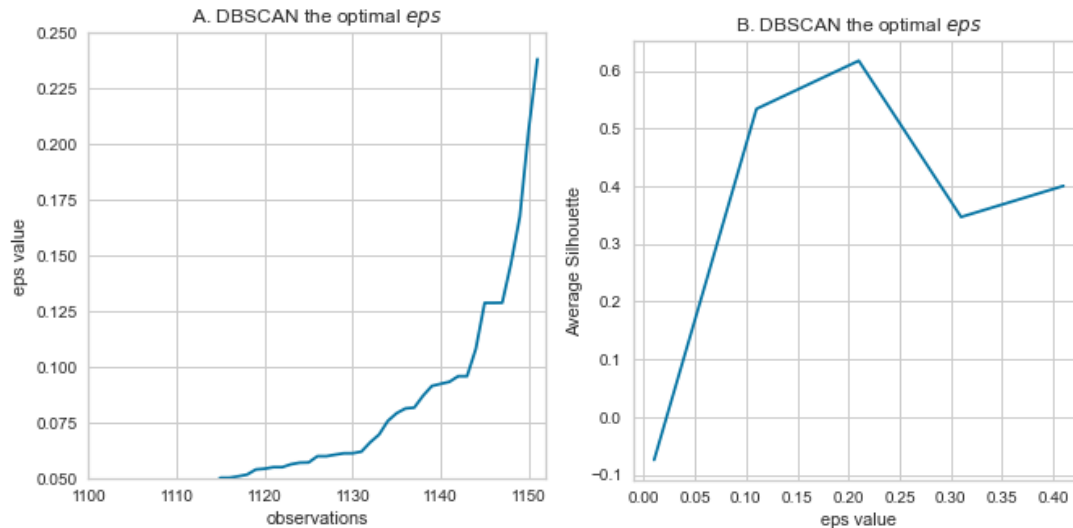
The analysis also finds that the probability of disbursing and the percentage disbursed are associated with observable characteristics of the loans, such as recipient country, department, and modality. All else constant, LBRs are more likely to be disbursing in the first 2 years following approval, and loans in the social sector, the climate change and sustainable development sector are more likely to be disbursing within 1 year when compared to loans in the infrastructure and environment sector. As for countries, investment loans in Nicaragua are more likely to be disbursing in the 24 months following approval than investment loans in the median country, whereas projects in Guatemala, Venezuela, Paraguay, Costa Rica, El Salvador, and Barbados are less likely to be disbursing in the same timeframe. However, countries have different requirements for meeting eligibility and being ready to disburse. Some require legislative approval or ratification, which can increase the time it takes for investment loans to reach eligibility after approval and slow down disbursements. Indeed, if we take this characteristic into account and consider the probability of disbursing within 2 years following eligibility, the picture changes. Overall, country heterogeneity seems to matter even more than department heterogeneity for the probability of disbursing. This characteristic needs to be considered in the preparation phase of a loan. Further research should focus on unveiling which factors drive country heterogeneity and how to solve identified bottlenecks at the country level to shorten the execution phase.

Appendix A. DBSCAN Methodology

For a datapoint to be considered close to another point, the Density-Based Spatial Clustering of Applications with Noise (DBSCAN) algorithm uses a predefined distance measure, ϵ (epsilon, or eps). Points within that distance will be considered close. The cluster also requires a parameter of the minimum number of datapoints to be considered within a cluster. We define 20 projects as the minimum observations to be identified as a cluster. DBSCAN can find clusters of different sizes and shapes within the dataset and can identify noise observations or outliers of detected clusters. This characteristic can be useful because some projects disburse very differently than similar ones, letting us distinguish those that behave more like an exception and less like the rule.

DBSCAN computes the distances between points and identifies data points that are core points, border points, or noise. Core points within the space are surrounded by a minimum of m points (20 minimum points in our exercise) within a distance n (0.20 epsilon). Border points lie at a distance n to a core point. Noise observations are neither border points nor core points. To assign the distance parameter between data points (epsilon), we use the value of 20 projects as the minimum number of projects within a cluster and calculate the average distance of each point to the nearest 20 neighbors. We then plot the results in ascending order.¹¹ Optimal values of eps will be around the maximum curvature, around 0.175 eps. (Figure A1, Panel A) We plot values around those eps and estimate the silhouette score. A higher value of the score indicates better separability between clusters. We choose eps of 0.20 with a silhouette score among the highest (Figure A1, Panel B).

Figure A1. Finding the Optimal Value of Epsilon (eps)



¹¹ We followed Rahman and Sitanggang (2016) to estimate the optimal value, employing that paper's application using the python and sklearn libraries.

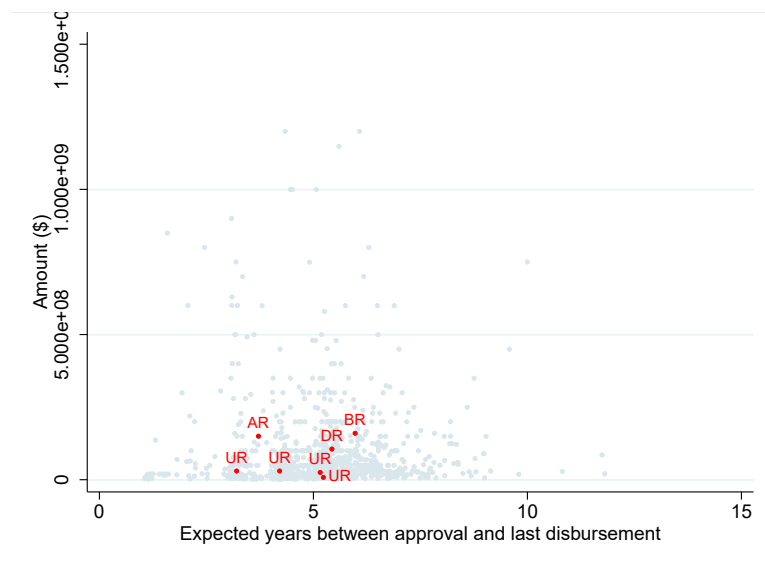
Appendix B. Loans Based on Results (LBR)

IDB approved only 7 LBR investment loans during the sample period: 4 in Uruguay; 1 in Argentina; 1 in Brazil; and 1 in Dominican Republic (Figure B1). They do not differ from other investment loans in terms of amounts approved or expected duration.

Once we plot investment loans by amount and percentage disbursed within 1 or 2 years since approval, we see that the LBR that disburse the fastest are all in Uruguay (Figure B2).

We then explore whether all investment loans disburse faster in Uruguay (Figure B3). We find that LBR are expected to have a shorter life than other projects, but nonetheless disburse faster than projects with same life expectancy.

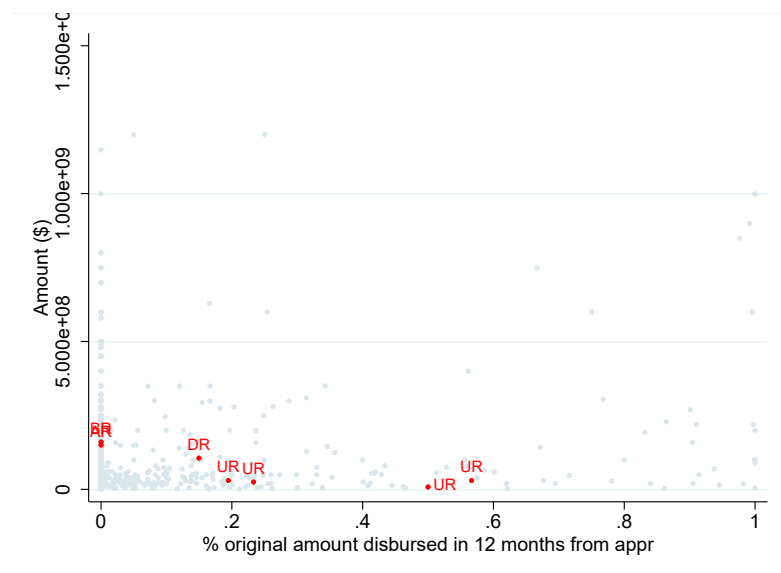
Figure B1. LBR and Other Investment Loans by Amount and Expected Years between Approval and Last Disbursement



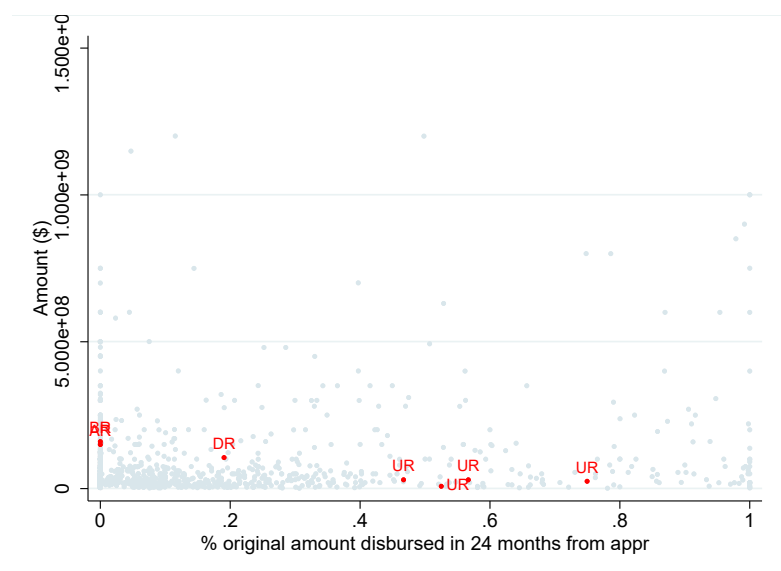
Note: The figure shows all investment loans approved between 2005 and 2019 by amount (y-axis) and expected years between approval and last disbursement (x-axis). Loans Based on Results (LBR) are highlighted in red, and the name of the recipient country is shown.

Figure B2. LBR and Other Investment Loans by Amount and Percentage Disbursed within 12 or 24 Months since Approval

Panel A. LBR and Other Investment Loans by Amount and Percentage Disbursed within 12 Months since Approval



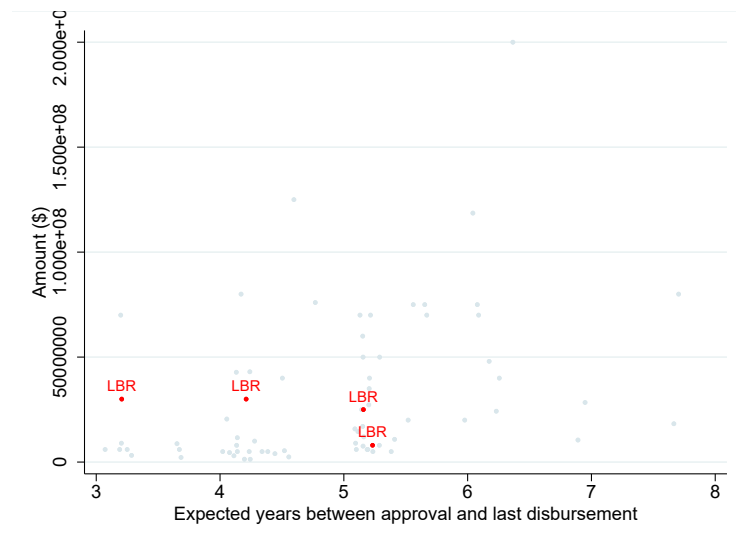
Panel B. LBR and Other Investment Loans by Amount and Percentage Disbursed within 24 Months since Approval



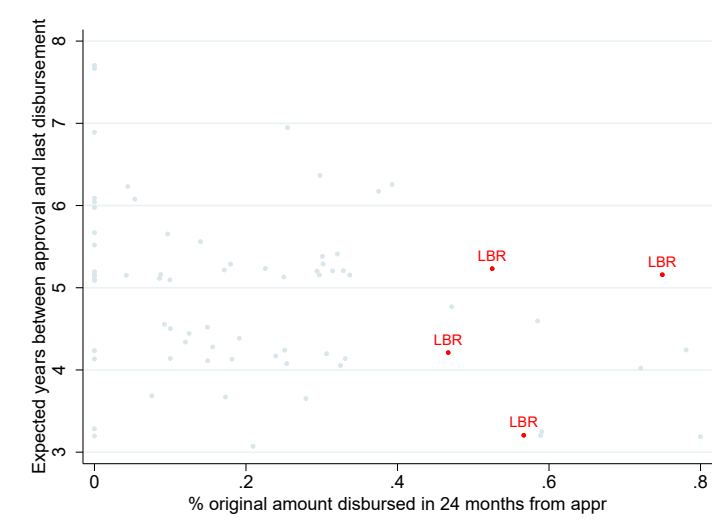
Note: The figures depict all investment loans approved between 2005 and 2019 by amount (y-axis) and percentage disbursed amount within 12 or 24 months since approval (x-axis). Loans Based on Results (LBR) are highlighted in red, and the name of the recipient country is shown.

Figure B3. Loans Based on Results Compared to Other Investment Loans in Uruguay

Panel A. Loans Based on Results Compared to Other Investment Loans in Uruguay by Amount and Expected Years between Approval and Last Disbursement



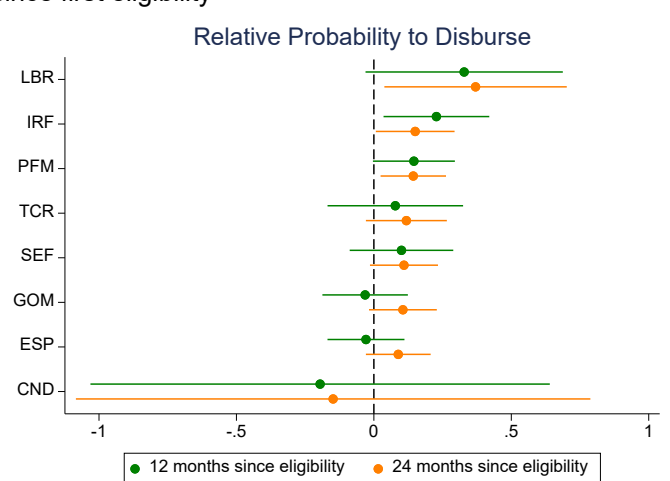
Panel B. Loans Based on Results Compared to Other Investment Loans in Uruguay by Expected Years between Approval and Last Disbursement and Percent Disbursed within 24 months since Approval



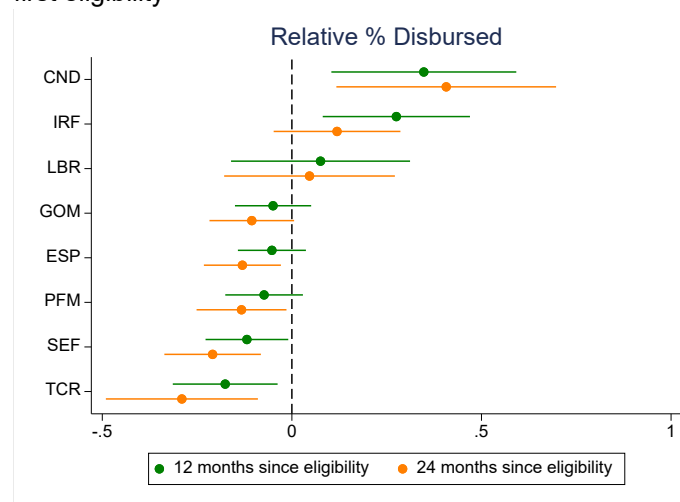
Note: The figures depict all investment loans approved between 2005 and 2019 in Uruguay. Loans Based on Results (LBR) are highlighted in red. In Panel A, investment loans are shown by amount (y-axis) and expected years between approval and last disbursement (x-axis). In Panel B, investment loans are shown by expected years between approval and last disbursement (y-axis) and percentage disbursed amount within 12 or 24 months since approval (x-axis).

Figure B4. Modality Fixed Effects, since First Eligibility

Panel A. Relative probability of disbursing within 12 and 24 months since first eligibility



Panel B. Relative percentage disbursed within 12 and 24 months since first eligibility

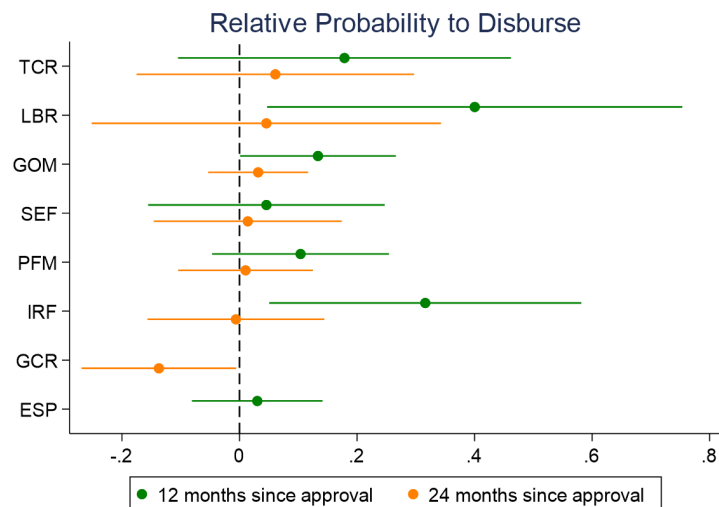


Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

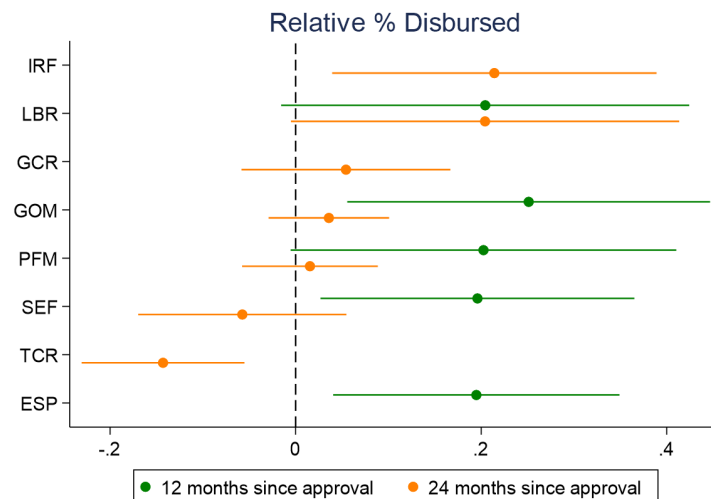
Note: The figure reports the coefficients of modality fixed effects from estimating equations (1)-(2) since first eligibility (Panels A and B), adding the time between approval and first eligibility as an additional control. The median modality in terms of percentage disbursed within 12 months since approval is GCR, and in terms of percentage disbursed within 24 months is ESP. Confidence intervals at the 95% significance level. CND: Contingency for Natural Disasters; ESP: Specific Investment Operation; GCR: Global Credit Operation; GOM: Global of Multiple Works Operation; IRF: Immediate Response Facility; LBR: Loan Based on Results; PFM: Multi-Phase Lending Project; SEF: Sector Facility; TCR: Technical Cooperation Loan.

Figure B5. Modality Fixed Effects, Controlling for Retroactive Financing

Panel A. Relative probability of disbursing within 12 and 24 months since approval



Panel B. Relative percentage disbursed within 12 and 24 months since approval

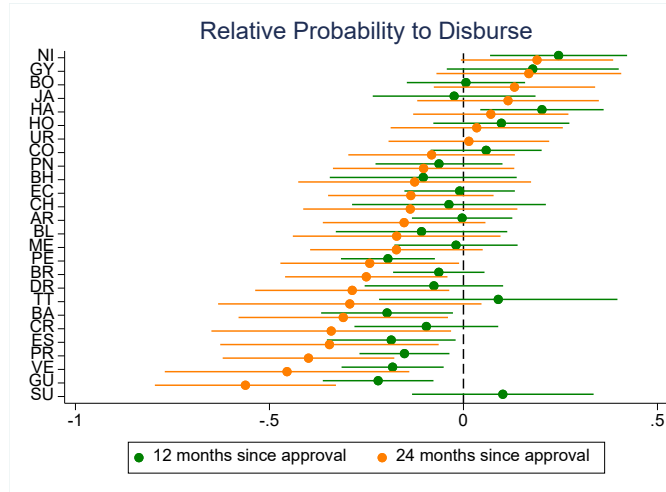


Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

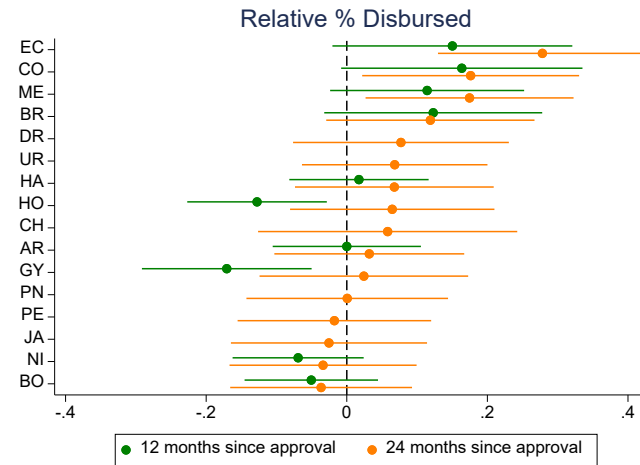
Note: The figure reports the coefficients of modality fixed effects from estimating equations (1)-(2) since approval (Panels A and B), when a dummy controlling for retroactive financing is included in both equations. The median modality in terms of percentage disbursed within 12 months since approval is GCR, and within 24 months is ESP. Confidence intervals at the 95% significance level. ESP: Specific Investment Operation; GCR: Global Credit Operation; GOM: Global of Multiple Works Operation; IRF: Immediate Response Facility; LBR: Loan Based on Results; PFM: Multi-Phase Lending Project; SEF: Sector Facility; TCR: Technical Cooperation Loan.

Figure B6. Fixed Effects by Country, Modality, Department, Division, Sector, Environmental & Social Risk, and Legal Requirements, Excluding IRF and LBR

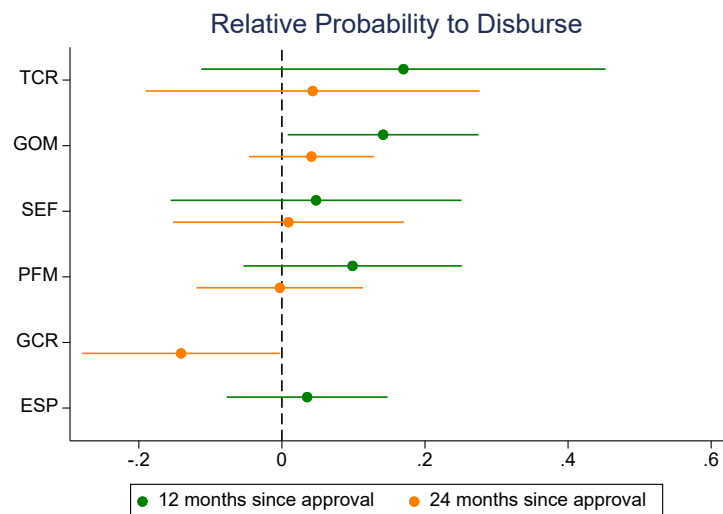
Panel A. Relative probability of disbursing within 12 and 24 months since approval, by country^a



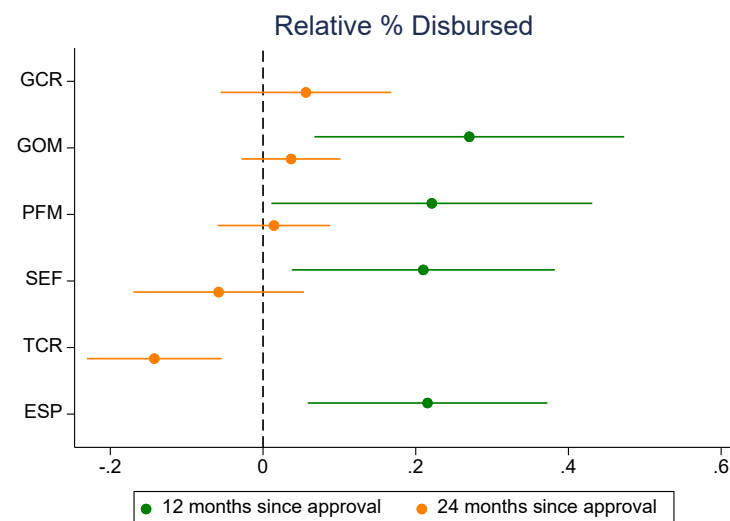
Panel B. Relative percentage disbursed within 12 and 24 months since approval, by country^a



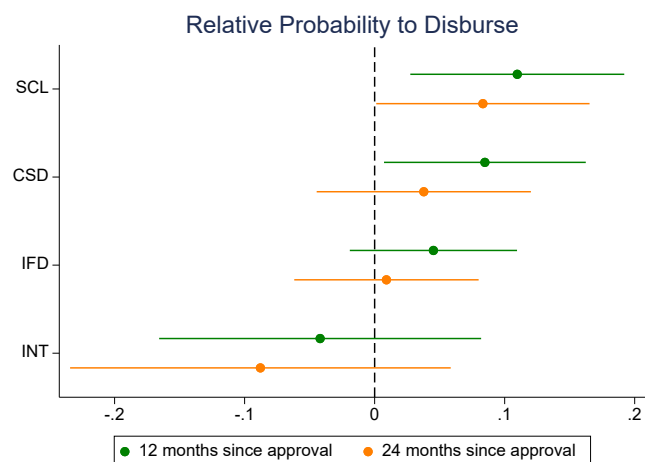
Panel C. Relative probability of disbursing within 12 and 24 months since approval, by modality^b



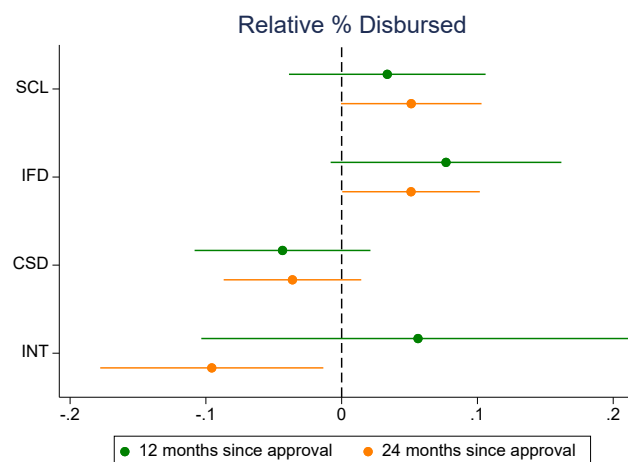
Panel D. Relative percentage disbursed within 12 and 24 months since approval, by modality^b



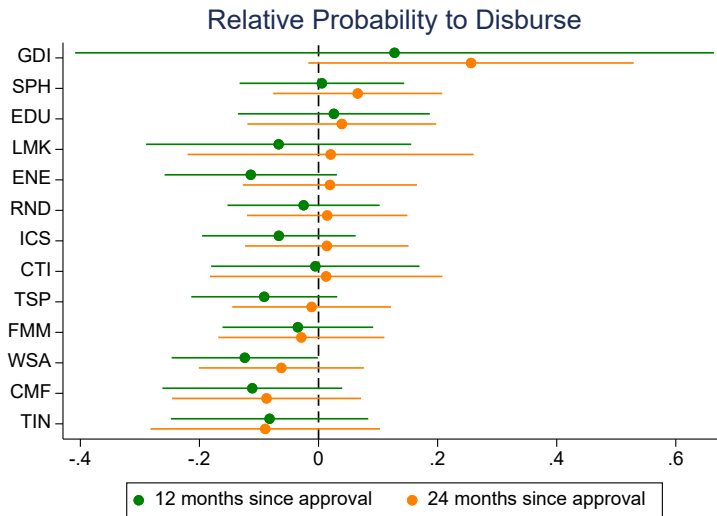
Panel E. Relative probability of disbursing within 12 and 24 months since approval by IDB loan department^c



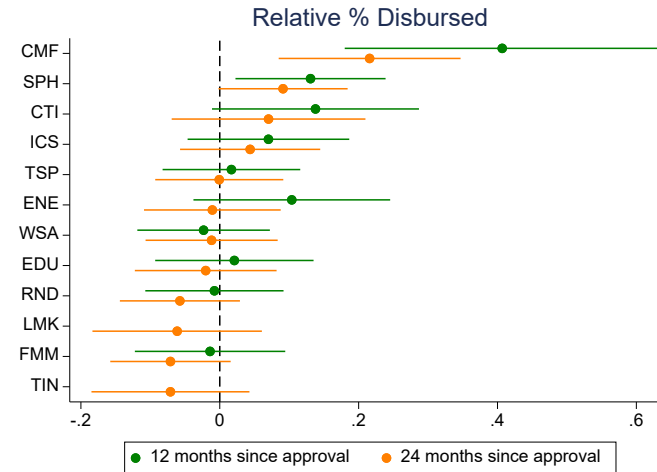
Panel F. Relative percentage disbursed within 12 and 24 months since approval, by IDB loan department^c



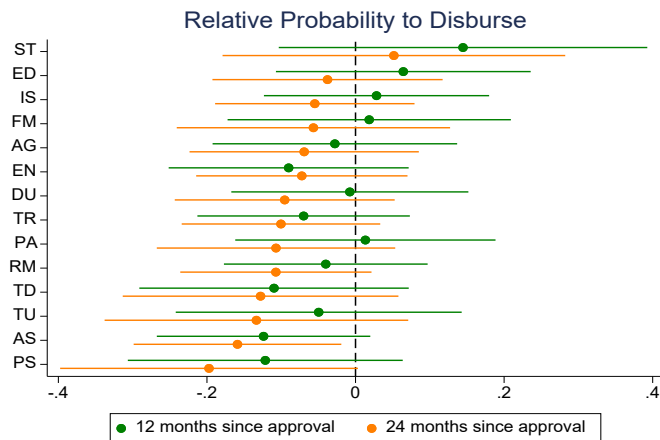
Panel G. Relative probability of disbursing within 12 and 24 months since approval, by division^d



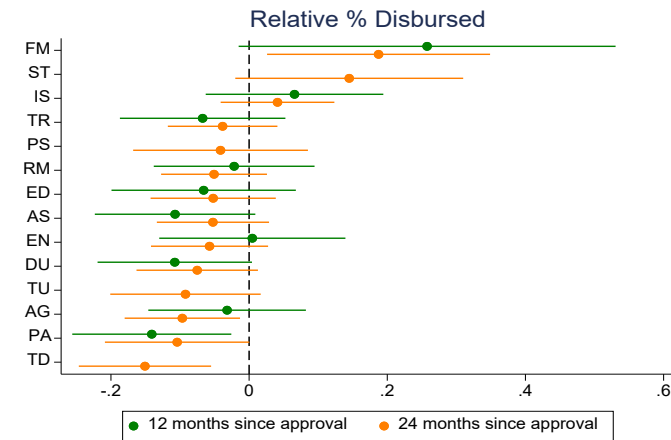
Panel H. Relative percentage disbursed within 12 and 24 months since approval, by division^d



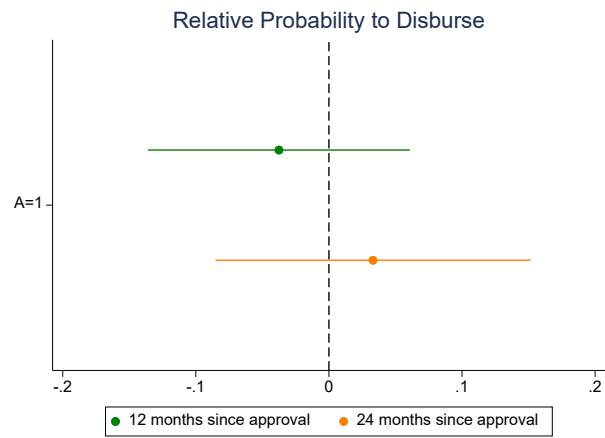
Panel I. Relative probability of disbursing within 12 and 24 months since approval, by sector^e



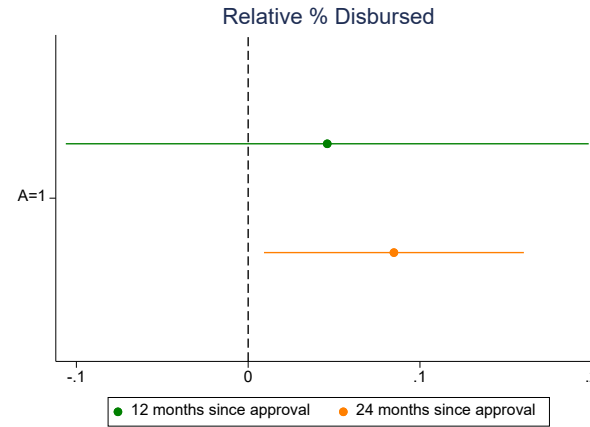
Panel J. Relative percentage disbursed within 12 and 24 months since approval by sector^e



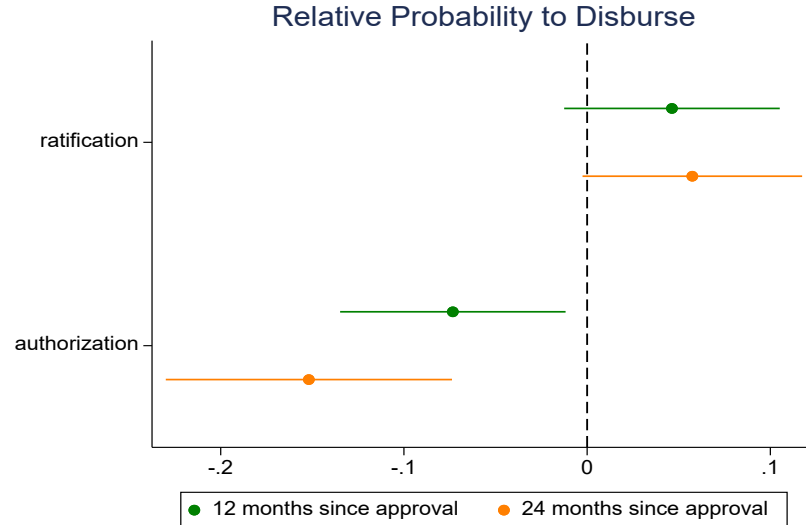
Panel K. Relative probability of disbursing within 12 and 24 months since approval, by environmental and social risk



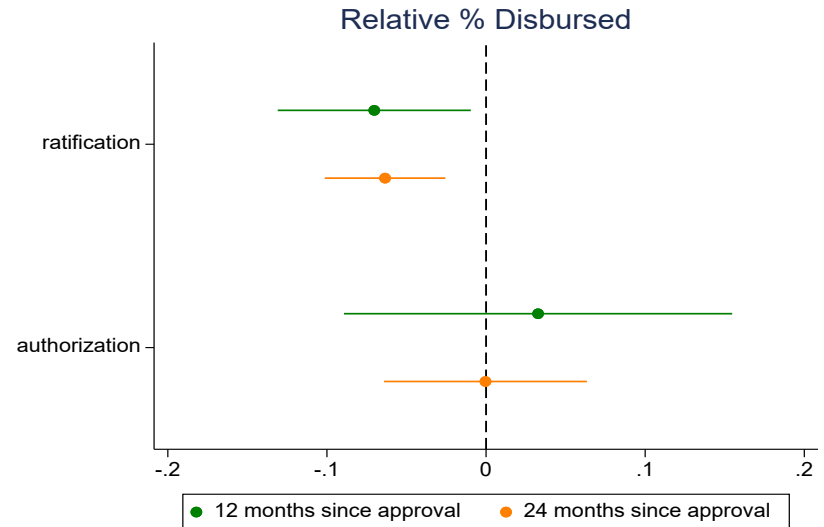
Panel L. Relative percentage disbursed within 12 and 24 months since approval, by environmental and social risk



Panel M. Relative probability of disbursing within 12 and 24 months since approval, by legal requirements



Panel N. Relative percentage disbursed within 12 and 24 months since approval, by legal requirements



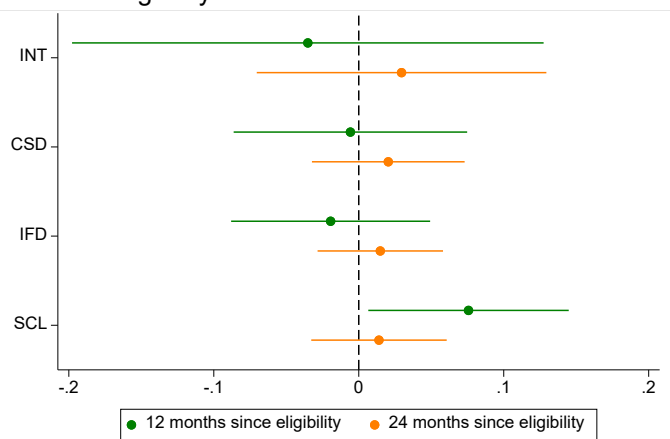
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019, excluding IRF (Immediate Response Facility) and LBR (Loan Based on Results).

Note: The figure reports the coefficients of fixed effects from estimating equations (1)-(2) since approval (left- and right-hand side, respectively).

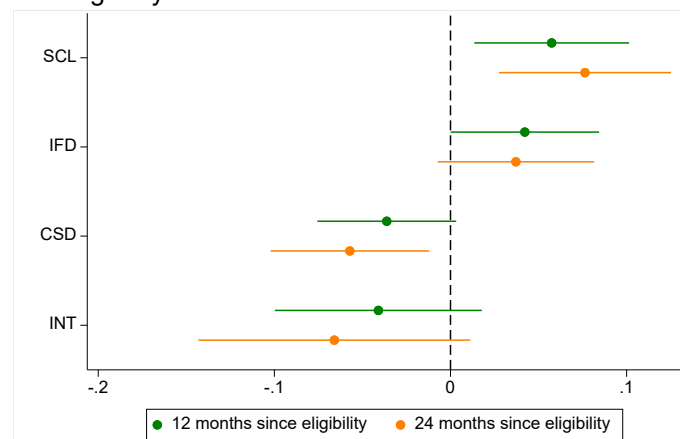
- a. For Panels A and B: Country codes are Argentina (AR), Bahamas (BH), Barbados (BA), Belize (BL), Bolivia (BO), Brazil (BR), Chile (CH), Colombia (CO), Costa Rica (CR), Dominican Republic (DR), Ecuador (EC), El Salvador (ES), Guatemala (GU), Guyana (GY), Haiti (HA), Honduras (HO), Jamaica (JA), Mexico (ME), Nicaragua (NI), Panama (PN), Paraguay (PR), Peru (PE), Suriname (SU), Trinidad & Tobago (TT), Uruguay (UR), Venezuela (VE).
- b. For Panels C and D: The median modality in terms of percentage disbursed within 12 months since approval is GCR, and within 24 months is ESP. CND: Contingency for Natural Disasters; ESP: Specific Investment Operation; GCR: Global Credit Operation; GOM: Global of Multiple Works Operation; PFM: Multi-Phase Lending Project; SEF: Sector Facility; TCR: Technical Cooperation Loan. CND is excluded because there are too few observations.
- c. For Panel E & F: The median department in terms of percentage disbursed both within 12 and 24 months since approval is INE. Confidence intervals at the 95% significance level. CSD: Climate Change and Sustainable Development Sector; IFD: Institutions for Development Sector; INE: Infrastructure and Environment Sector; INT: Integration and Trade Sector; SCL: Social Sector.
- d. For Panels G & H: The median division in terms of percentage disbursed within both 12 and 24 months is Housing and Urban Development (HUD). CCS: Climate Change Division; CMF: Capital Markets and Financial Institutions Division; CTI: Competitiveness Technology and Innovation; EDU: Education; ENE: Energy; FMM: Fiscal and Municipal Management; GDI: Gender & Diversity; ICS: Institutional Capacity of State Division; LMK: Labor Markets; RND: Environment, Rural Development & Disaster Risk Management; SPH: Social Protection & Health; TIN: Integration and Trade Sector; TSP: Transport; WSA: Water & Sanitation.
- e. For Panels I and J: The median sector in terms of percentage disbursed within both 12 and 24 months is SA (Health). AG: Agriculture & Development; AS: Water & Sanitation; DU: Urban Development & Housing; ED: Education; EN: Energy; FM: Financial Markets; IS: Social Investment; PA: Climate Change & Environment; PS: Private Firms; RM: Modernization of the State; SA: Health; TD: Trade & Integration; TR: Transportation; TU: Sustainable Tourism.

Figure B7. Department Fixed Effects, since First Eligibility

Panel A. Relative probability of disbursing within 12 and 24 months since first eligibility



Panel B. Relative percentage disbursed within 12 and 24 months since first eligibility

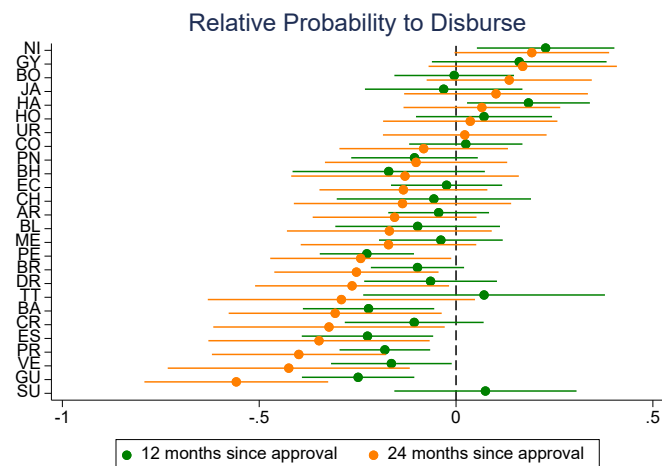


Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

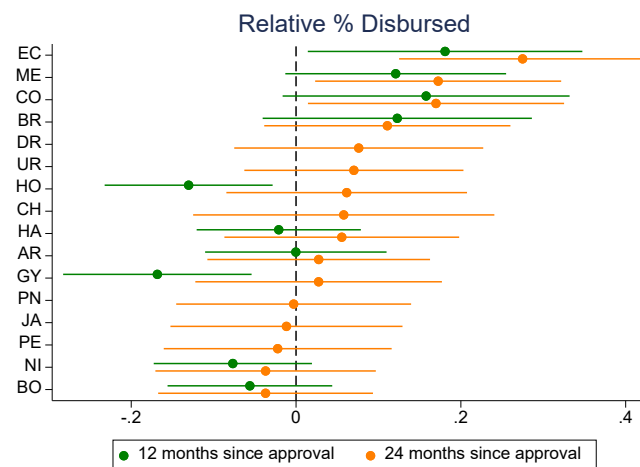
Note: The figure reports the coefficients of department fixed effects from estimating equations (1)-(2) since first eligibility (Panels A and B), adding the time between approval and first eligibility as an additional control. The median department in terms of percentage disbursed both within 12 and 24 months since approval is INE (Infrastructure and Environment Sector). Confidence intervals at the 95% significance level. SCL: Social Sector; CSD: Climate Change and Sustainable Development Sector; IFD: Institutions for Development Sector; INT: Integration and Trade Sector; SCL: Social Sector.

Figure B8. Fixed Effects, Controlling for Loans Approved in Q4

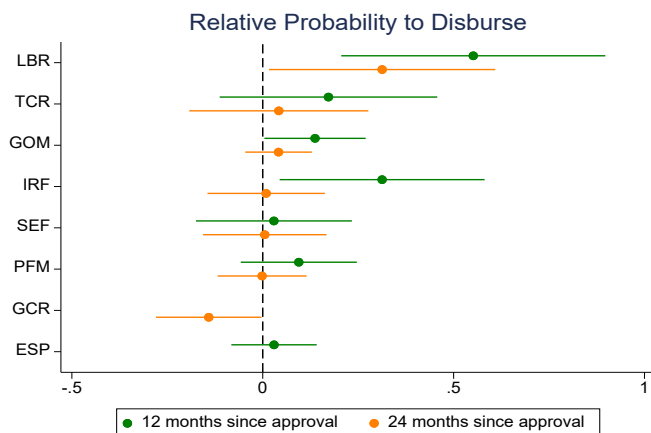
Panel A. Relative probability of disbursing within 12 and 24 months since approval, by country^a



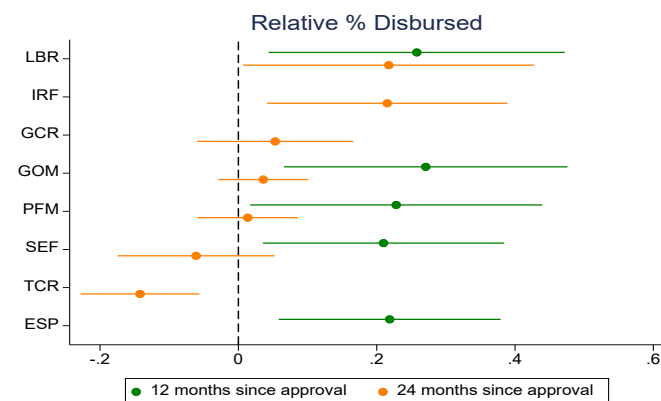
Panel B. Relative percentage disbursed within 12 and 24 months since approval, by country^a



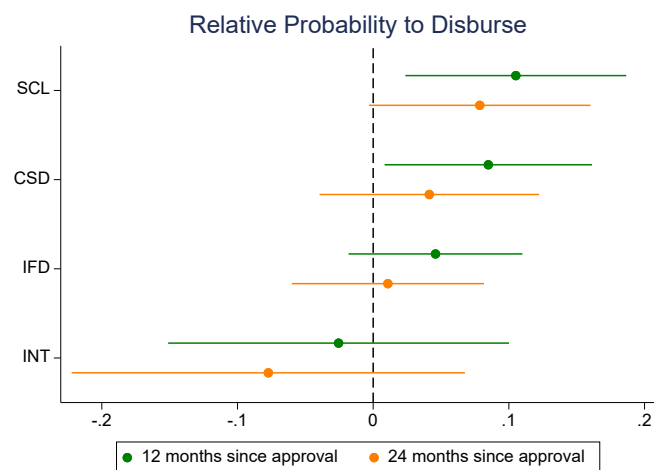
Panel C. Relative probability of disbursing within 12 and 24 months since approval by modality^b



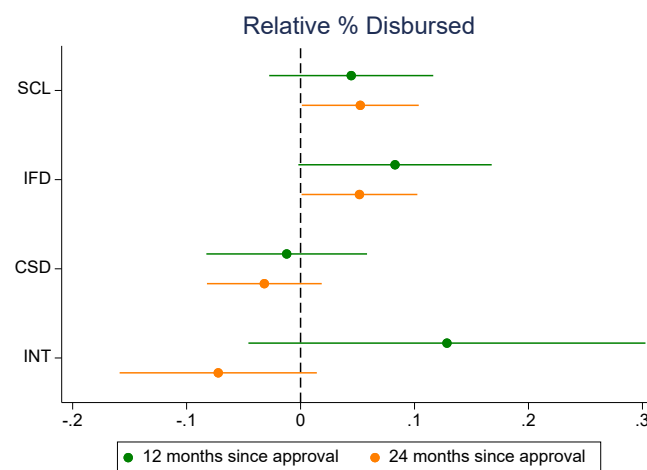
Panel D. Relative percentage disbursed within 12 and 24 months since approval by modality^b



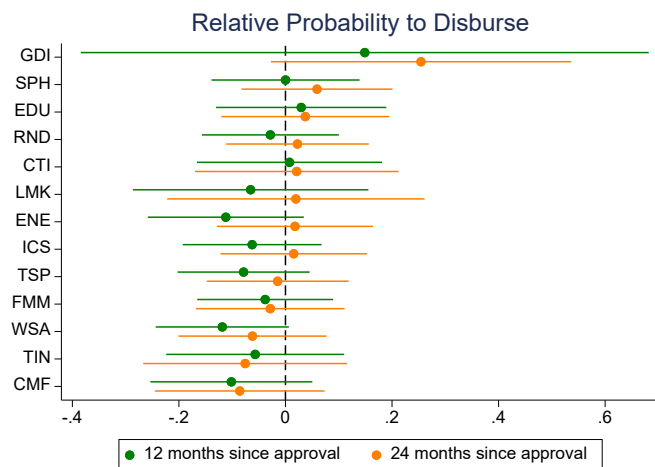
Panel E. Relative probability of disbursing within 12 and 24 months since approval by IDB loan department^c



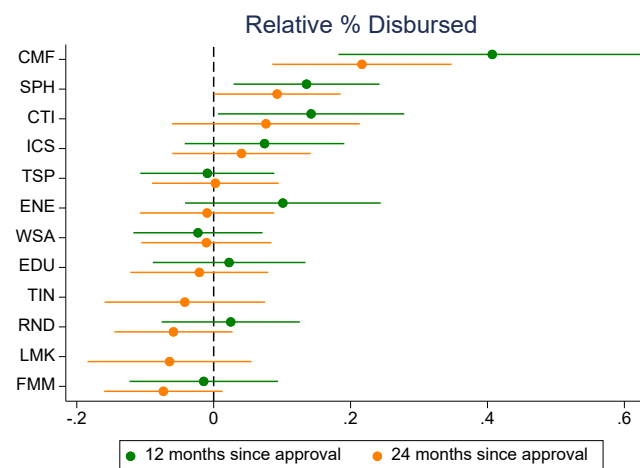
Panel F. Relative percentage disbursed within 12 and 24 months since approval, by IDB loan department^c



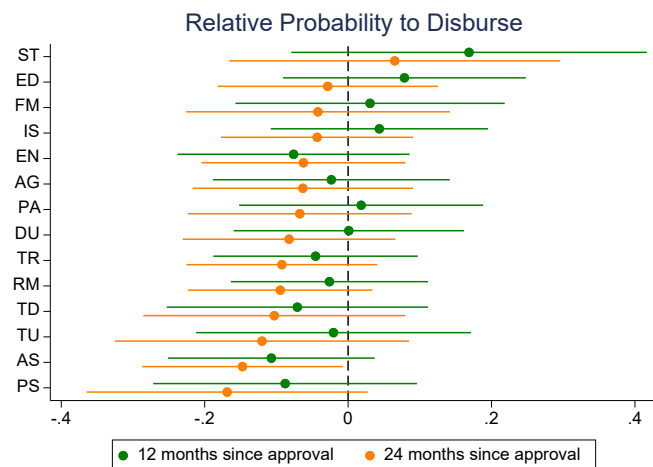
Panel G. Relative probability of disbursing within 12 and 24 months since approval, by division^d



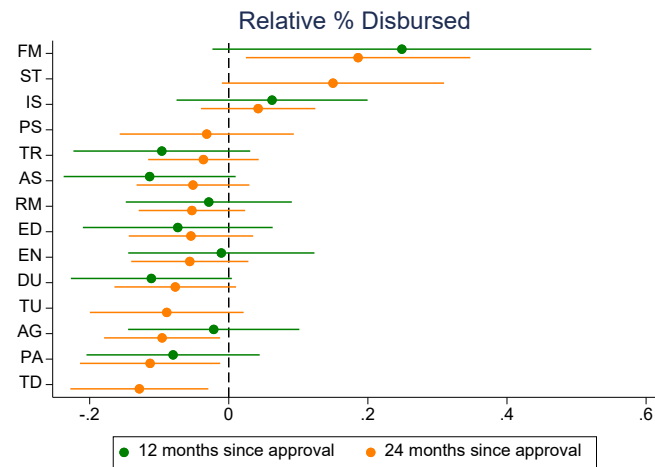
Panel H. Relative percentage disbursed within 12 and 24 months since approval, by division^d



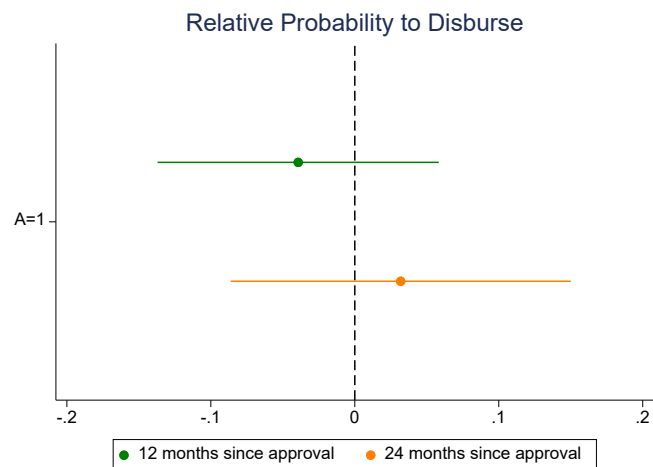
Panel I. Relative probability of disbursing within 12 and 24 months since approval, by sector^e



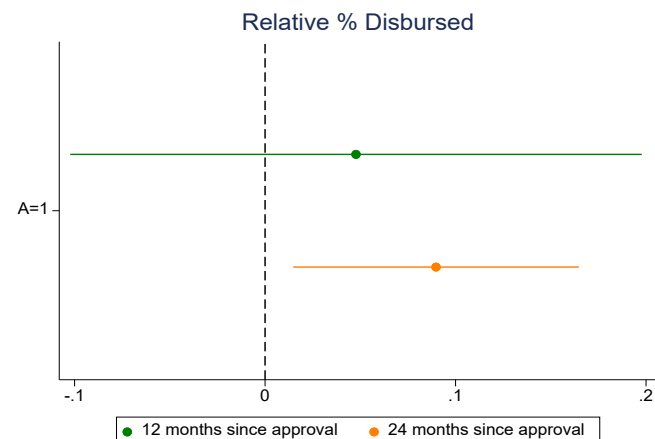
Panel J. Relative percentage disbursed within 12 and 24 months since approval, by sector^e



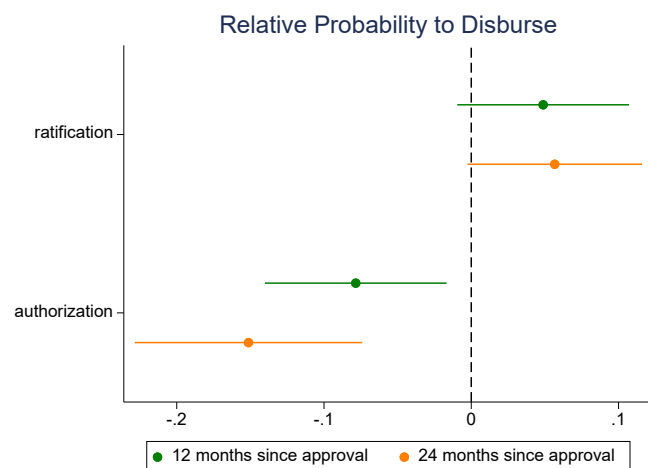
Panel K. Relative probability of disbursing within 12 and 24 months since approval, by environmental and social risk



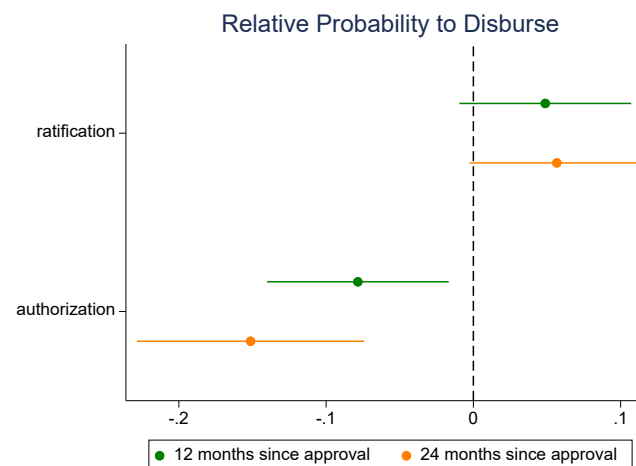
Panel L. Relative percentage disbursed within 12 and 24 months since approval by environmental and social risk



Panel M. Relative probability of disbursing within 12 and 24 months since approval, by legislative requirements



Panel N. Relative percentage disbursed within 12 and 24 months since approval, by legislative requirements



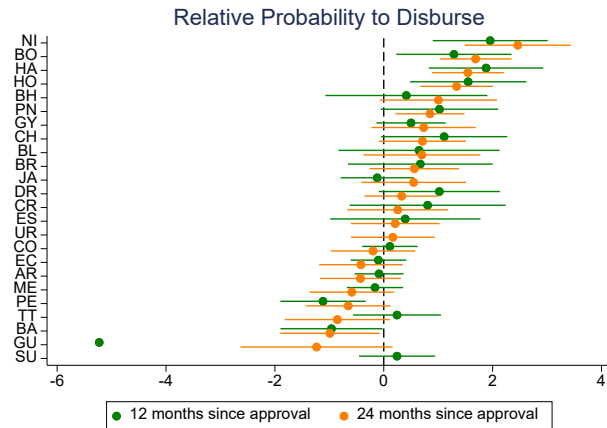
Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure reports the coefficients of fixed effects from estimating equations (1)-(2) since approval (left- and right-hand side, respectively), when a dummy signaling loans approved in quarter 4 (Q4) is added as a control.

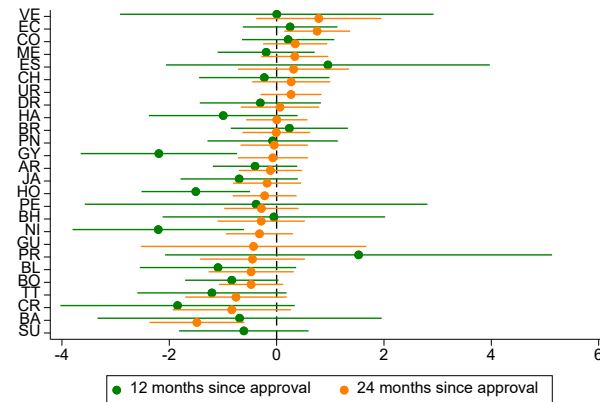
- For Panels A and B: Country codes are Argentina (AR), Bahamas (BH), Barbados (BA), Belize (BL), Bolivia (BO), Brazil (BR), Chile (CH), Colombia (CO), Costa Rica (CR), Dominican Republic (DR), Ecuador (EC), El Salvador (ES), Guatemala (GU), Guyana (GY), Haiti (HA), Honduras (HO), Jamaica (JA), Mexico (ME), Nicaragua (NI), Panama (PN), Paraguay (PR), Peru (PE), Suriname (SU), Trinidad & Tobago (TT), Uruguay (UR), Venezuela (VE).
- For Panels C and D: The median modality in terms of percentage disbursed within 12 months since approval is GCR, and within 24 months is ESP. CND: Contingency for Natural Disasters; ESP: Specific Investment Operation; GCR: Global Credit Operation; GOM: Global of Multiple Works Operation; PFM: Multi-Phase Lending Project; SEF: Sector Facility; TCR: Technical Cooperation Loan. CND is excluded because there are too few observations.
- For Panel E & F: The median department in terms of percentage disbursed both within 12 and 24 months since approval is INE. Confidence intervals at 95% significance level. CSD: Climate Change and Sustainable Development Sector; IFD: Institutions for Development Sector; INE: Infrastructure and Environment Sector; INT: Integration and Trade Sector; SCL: Social Sector.
- For Panels G & H: The median division in terms of percentage disbursed within both 12 and 24 months is Housing and Urban Development (HUD). CCS: Climate Change Division; CMF: Capital Markets and Financial Institutions Division; CTI: Competitiveness Technology and Innovation; EDU: Education; ENE: Energy; FMM: Fiscal and Municipal Management; GDI: Gender & Diversity; ICS: Institutional Capacity of State Division; LMK: Labor Markets; RND: Environment, Rural Development & Disaster Risk Management; SPH: Social Protection & Health; TIN: Integration and Trade Sector; TSP: Transport; WSA: Water & Sanitation.
- For Panels I and J: The median sector in terms of percentage disbursed within both 12 and 24 months is SA (Health). AG: Agriculture & Development; AS: Water & Sanitation; DU: Urban Development & Housing; ED: Education; EN: Energy; FM: Financial Markets; IS: Social Investment; PA: Climate Change & Environment; PS: Private Firms; RM: Modernization of the State; TD: Trade & Integration; TR: Transportation; TU: Sustainable Tourism.

Figure B9. Fixed Effects, Heckman Selection Model

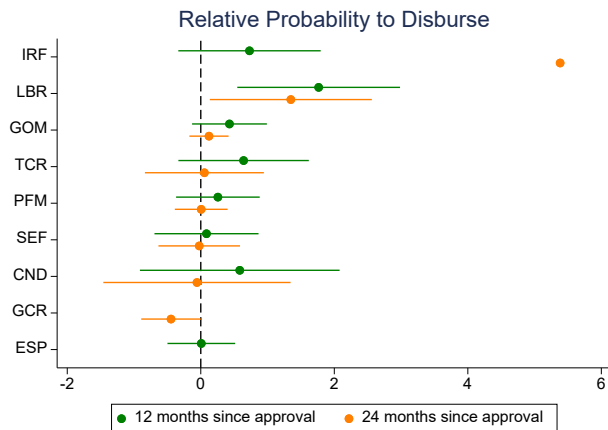
Panel A. Relative probability of disbursing within 12 and 24 months since approval, by country^a



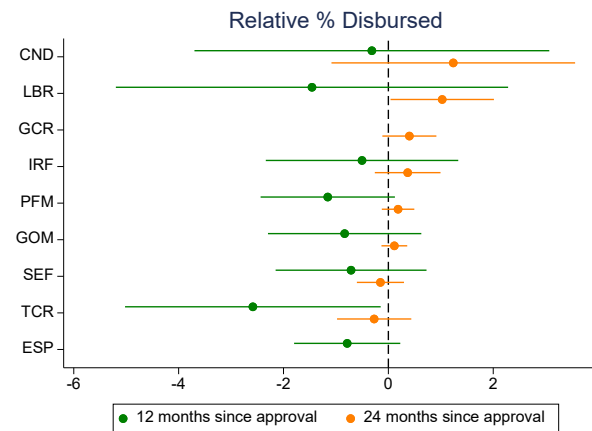
Panel B. Relative percentage disbursed within 12 and 24 months since approval, by country^a



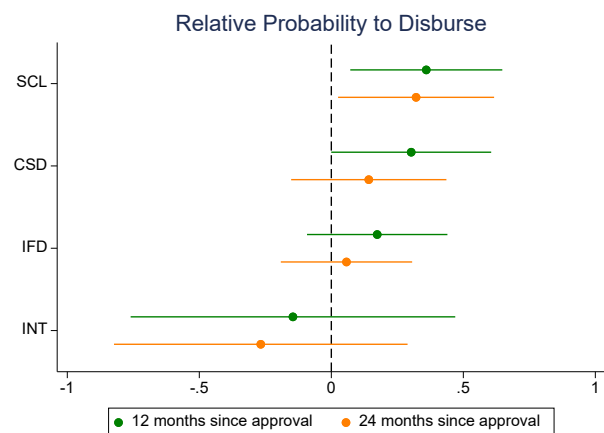
Panel C. Relative probability of disbursing within 12 and 24 months since approval, by modality^b



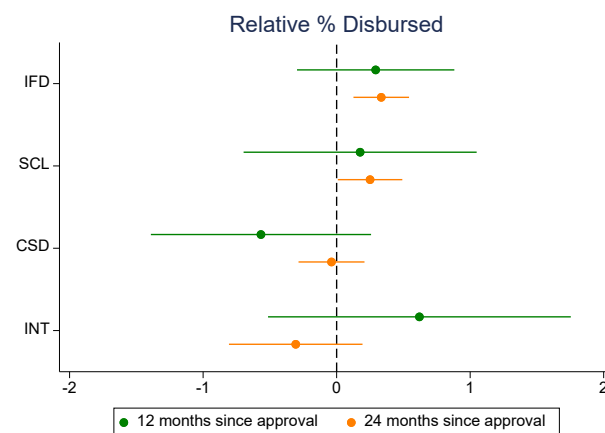
Panel D. Relative percentage disbursed within 12 and 24 months since approval, by modality^b



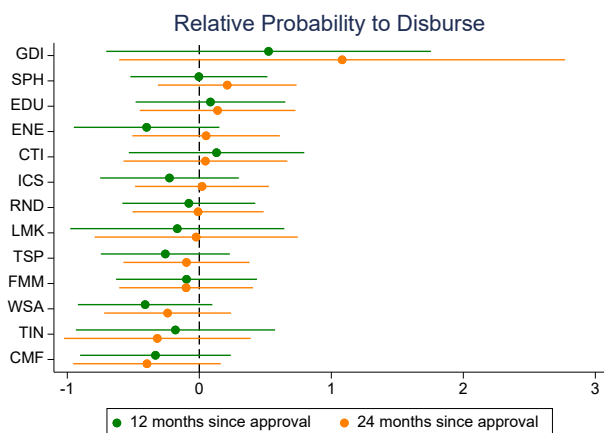
Panel E. Relative probability of disbursing within 12 and 24 months since approval, by IDB loan department^c



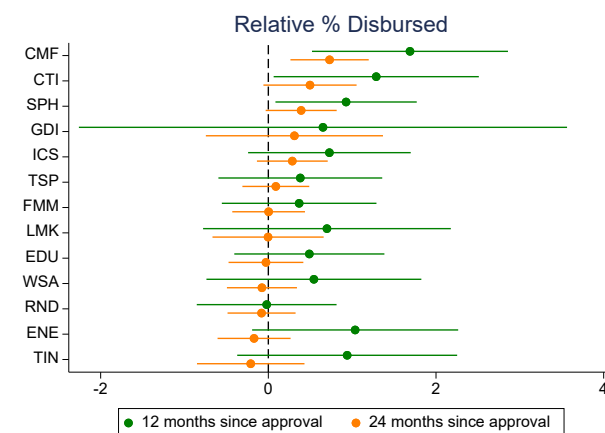
Panel F. Relative percentage disbursed within 12 and 24 months since approval, by IDB loan department^c



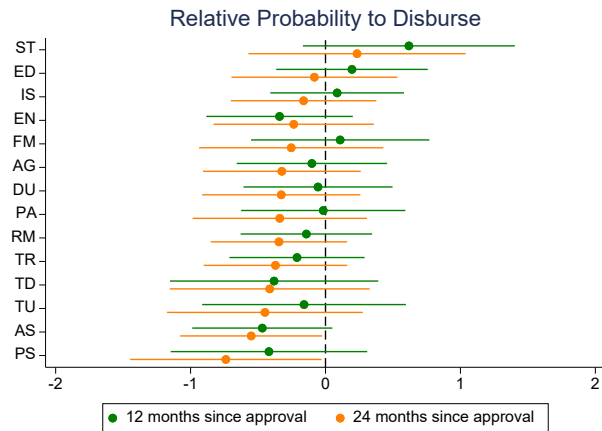
Panel G. Relative probability of disbursing within 12 and 24 months since approval, by division^d



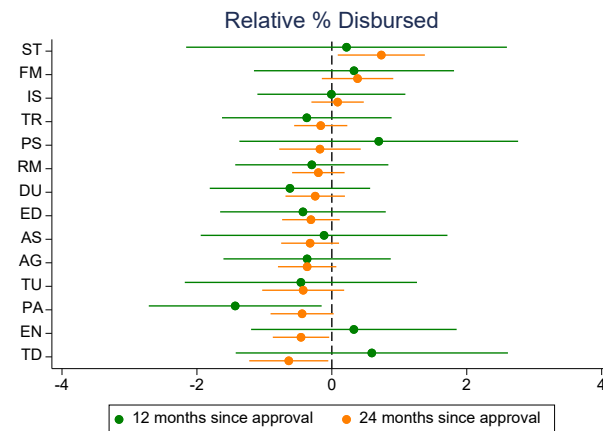
Panel H. Relative percentage disbursed within 12 and 24 months since approval, by division^d



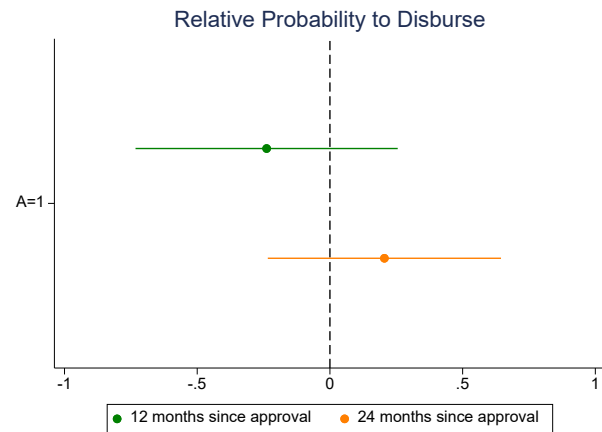
Panel I. Relative probability of disbursing within 12 and 24 months since approval, by sector^e



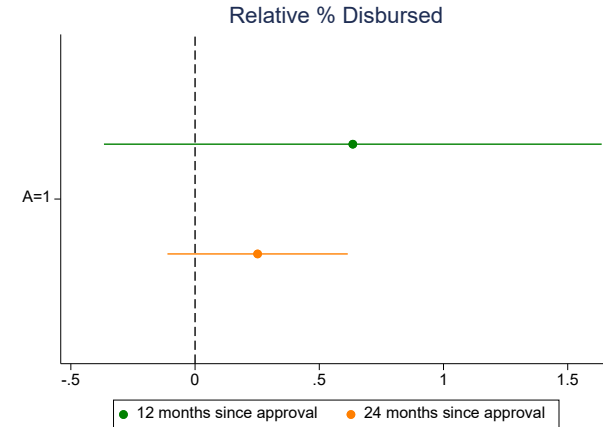
Panel J. Relative percentage disbursed within 12 and 24 months since approval, by sector^e



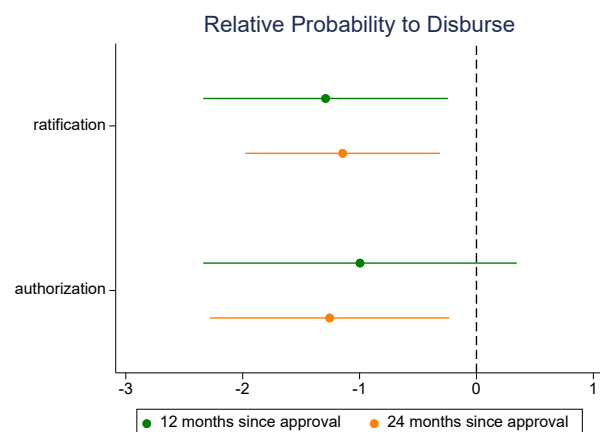
Panel K. Relative probability of disbursing within 12 and 24 months since approval, by environmental and social risk



Panel L. Relative percentage disbursed within 12 and 24 months since approval, by environmental and social risk



Panel M. Relative probability of disbursing within 12 and 24 months since approval, by legislative requirements



Source: Authors' calculations based on sovereign-guaranteed (SG) investment loans approved between 2005 and 2019.

Note: The figure reports the coefficients of a Heckman selection model. Standard errors clustered at the country level. Confidence intervals at 95%

- For Panels A and B: Country codes are Argentina (AR), Bahamas (BH), Barbados (BA), Belize (BL), Bolivia (BO), Brazil (BR), Chile (CH), Colombia (CO), Costa Rica (CR), Dominican Republic (DR), Ecuador (EC), El Salvador (ES), Guatemala (GU), Guyana (GY), Haiti (HA), Honduras (HO), Jamaica (JA), Mexico (ME), Nicaragua (NI), Panama (PN), Paraguay (PR), Peru (PE), Suriname (SU), Trinidad & Tobago (TT), Uruguay (UR), Venezuela (VE).
- For Panels C and D: The median modality in terms of percentage disbursed within 12 months since approval is GCR, and within 24 months is ESP. CDN: Contingency for Natural Disasters; ESP: Specific Investment Operation; GCR: Global Credit Operation; GOM: Global of Multiple Works Operation; PFM: Multi-Phase Lending Project; SEF: Sector Facility; TCR: Technical Cooperation Loan.
- For Panel E & F: The median department in terms of percentage disbursed both within 12 and 24 months since approval is INE. Standard errors are clustered at the country level. CSD: Climate Change and Sustainable Development Sector; IFD: Institutions for Development Sector; INE: Infrastructure and Environment Sector; INT: Integration and Trade Sector; SCL: Social Sector.
- For Panels G & H: The median division in terms of percentage disbursed within both 12 and 24 months is Housing and Urban Development (HUD). CMF: Capital Markets and Financial Institutions Division; CTI: Competitiveness Technology and Innovation; EDU: Education; ENE: Energy; FMM: Fiscal and Municipal Management; GDI: Gender & Diversity; ICS: Institutional Capacity of State Division; LMK: Labor Markets; RND: Environment, Rural Development & Disaster Risk Management; SPH: Social Protection & Health; TIN: Integration and Trade Sector; TSP: Transport; WSA: Water & Sanitation. Divisions with too few observations are not considered: CCS (Climate Change Division); TIU (Trade and Investment Unit).
- For Panels I and J: The median sector in terms of percentage disbursed within both 12 and 24 months is SA (Health). AG: Agriculture & Development; AS: Water & Sanitation; DU: Urban Development & Housing; ED: Education; EN: Energy; FM: Financial Markets; IS: Social Investment; PA: Climate Change & Environment; PS: Private Firms; RM: Modernization of the State; TD: Trade & Integration; TR: Transportation; TU: Sustainable Tourism. RI (Regional Integration) is not considered because there are too few observations.

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