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What Explains Aid Project Success in Post-Conflict Situations?

Lisa Chauvet
Paul Collier
Marguerite Duponchel

The World Bank
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Abstract

This paper investigates the effectiveness of post-conflict aid at the project level and aims to identify post-conflict situations as a window of opportunity for project success. The Independent Evaluation Group dataset provides extensive information on the characteristics of World Bank projects including an independent rating of their success, supervision and evaluation quality. The paper estimates the probability of success of aid projects depending on the characteristics of the intervention and looks for possible special patterns in post civil war situations. The results suggest that the probability of success of World Bank projects increases as peace lasts. Supervision appears to be a crucial determinant of the success of projects, especially during the first years of peace. Although the results of the sector-level analysis need to be taken with caution, the authors find that projects in the transport sector and in the urban development sector appear more successful in post-conflict environments. On the contrary, education projects seem less successful and therefore need to be highly supervised. Projects in the private sector should wait as they face a higher probability of failure in the first years of peace.

This paper—a product of the Agriculture and Rural Development Team, Development Research Group—is part of a larger effort in the department to understand how interventions can best contribute to poverty reduction. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mduponchel@worldbank.org.

What explains aid project success in post-conflict situations?

Lisa Chauvet[*], Paul Collier[†] and Marguerite Duponchel[‡§]

[*]IRD, DIAL

[†]University of Oxford, CSAE

[‡]The World Bank

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1 Introduction

This paper explores aid effectiveness in post-conflict situations using project-level data. Post-conflict situations are characterized by economic opportunities for recovery and political opportunities for reform and change (Collier and Hoeffler, 2004; Chauvet and Collier, 2006; Collier, 2007). The opportunities provided by the need to rebuild the economy in post-conflict situations should tend to make aid particularly effective in the first post-war decade. However, this may be offset by the limits to absorptive capacity due to particularly difficult economic and administrative environments. To date the limited quantitative evidence on aid effectiveness post-conflict has come from macroeconomic studies. These suggest that from the perspective of aid effectiveness, the former effect predominates. Collier and Hoeffler (2004) find that during the first few years of peace the absorptive capacity of aid is about double its usual level. Elbadawi et al. (2008) find that the appreciation of the real exchange rate induced by aid is much weaker in post-conflict situations, making aid more effective than normal. Adam et al. (2008) show that post-conflict aid is used to reduce inflation by reigning in the deficit financing typical during conflict. Duponchel (2008) finds that aid stabilizes the post-conflict environment, although she finds limits to absorption: the optimum amount of aid is around 4.8 percent of GDP, around double the average observed in her sample.

This is the first quantitative study of aid effectiveness post-conflict to use project-level data. We use information on the success or failure of World Bank projects and investigate whether performance is systematically different in post-conflict situations. We also investigate whether post-conflict situations need particular sector targeting, enhanced supervision effort or special sequencing of project launching.

World Bank projects are assessed by an independent institution, the IEG (*Independent Evaluation Group*). The IEG has provided the evaluation of all World Bank projects worldwide since the 1960s. Along with its assessment, this database provides information on the characteristics of each project (investment versus budget support; IDA or IBRD projects, financial conditions, NGOs involved, etc.) and on the supervision and preparation efforts of World Bank staff. Although it has not previously been used to investigate post-conflict situations, it is a standard database for the study of aid effectiveness. Using it, Isham and Kaufmann (1999), Dollar and Svensson (2000), Kilby (2000), Dollar and Levin (2005) and Chauvet et al. (2006) analyze the respective importance of donors' effort and recipients' macro-economic and institutional characteristics for the success of World Bank projects. From this literature no consensus has emerged as to whether the success or failure of World Bank projects primarily depends upon countries' political economy or on project characteristics, notably the supervision of projects. In a slightly different framework, Guillaumont and Laajaj (2006) also explore

the determinants of the success of World Bank projects. They find that the success rate of projects is negatively affected by external factors such as vulnerability to external shocks. They also show that aid dampens the negative impact of shocks on the probability of success of World Bank projects. With the exception of Guillaumont and Laajaj (2006) who find a negative impact of being at war during the project, none of the papers using the IEG database has taken into account the history of conflict as a factor for the success of a project.

In Sections 2 and 3, we present the data on World Bank projects and some descriptive statistics on aid projects in post-conflict situations as well as the econometric model. In Section 4, we explore whether projects in post-conflict countries are likely to be more or less successful than in other developing countries. We particularly investigate the timing of projects with respect to the end of wars, and try to identify when during post-conflict should projects be launched in order to maximize the chances that they succeed. We also explore whether post-conflict situations call for a special sectoral targeting of aid projects. Finally, our main results are summarized in Section 5.

2 Data

The World Bank undertakes development projects in most developing countries. It generally does not implement projects, relying on partners on the ground. The cycle of each project consists of several phases. First, the implementation phase is dedicated to reaching an agreement with the recipient government on both the content and the design of the project. Once approved by the Board, the project enters its implementation phase which is undertaken by the government. The implementation is itself divided into different funding phases, whose frequency and scale is determined during the preparation phase. Each tranche is released, aborted or scaled down by the World Bank depending on the conclusions of the supervision report. The effort put into supervision is decided by the World Bank management. Country Directors allocate funds, including for supervision, from an overall country budget dedicated to different activities. Once completed or aborted, the project is evaluated by the Independent Evaluation Group (IEG) after two years.

IEG was established in 1973 as an independent unit within the World Bank Group. Former President McNamara stated on the thirtieth birthday of IEG: 'We set up OED [now IEG] with professional people, well qualified to examine the activities of their peers and their colleagues at the World Bank, but with no line of authority from me or anyone under me to direct them in whatever they say' (OED, 2003). It was originally designed to assess the effectiveness of projects, how projects are run by bor-

rowers as well as the long term impact of projects on the country's development process. The IEG reports directly to the Board and, in principle, its staff are not permitted to move to positions in other parts of the Bank.

The IEG database covers projects started from 1961 to 2002. During this period, over 6,400 projects have been evaluated in all sectors and most countries. The outcomes of those projects are rated independently. Three factors are considered: (i) the relevance of the interventions objectives in regard of the country needs and institutional priorities; (ii) the extent to which the objectives have been achieved; and (iii) the efficiency of the project, which is the extent to which the objectives have been achieved without using more resources than necessary. Based on the scores, the outcome of the project is rated from 0 (*highly unsatisfactory*) to 5 (*highly satisfactory*).[1] As mentioned earlier we define success = 1 for projects rated as satisfactory or very satisfactory. Overall, 58 percent of the projects were considered successful and 3 percent very successful. IEG also separately evaluates the supervision effort by the World Bank and the preparation effort by the recipient government from highly unsatisfactory (1) to highly satisfactory (4).

We acknowledge that the quality of the data is not ideal and that working on project performance in post-conflict is difficult. There are known major weaknesses with World Bank project evaluation. Indeed, IEG evaluation are not randomized control experiments as evaluation would stand for in the economic literature but rather, evaluation is an internal process that consists in qualitative assessments relative to stated objectives. Consequently, it is likely that projects in post-conflict environment would imply lower expectations. The very same project implemented in Burundi may have lower objectives than when undertaken in Ghana. The data might well suffer from a potential bias that would affect the ratings of success but also of the quality of supervision and preparation. Having said that, the evaluation procedure is independent, staff are experienced, the process has been on-going for more than three decades, and a lot of resources are put into it. It is therefore unlikely that the data have no informative content whatsoever. In addition, the bias, at least for its larger part, seems to confirm the difficulties associated with implementing projects in post-confict environment. Indeed, results show that the coefficient for post-conflict projects is always significant and negative when it should be biased upwards, confirming that post-conflict makes indeed things harder. Regarding preparation and supervision, it is likely that the difficult environment of implementation calls for larger efforts. As a result, the same efforts of preparing and supervising might be less well rated in post-conflict than in a country at peace. If this is the reality, coefficients would be biased downwards. However the analysis

[1] Very unsuccessful: 0; unsuccessful: 1; moderately unsuccessful: 2; moderately successful: 3; successful: 4; highly successful: 5.

underlines a positive and significant association between preparation, supervision and post-conflict projects. Again, our analysis seems to be a lower bound.

The IEG data provide information on the outcome of the project, but also on the characteristics of the project. The characteristics of project j, P_j, do not vary overtime. They include the main sectors of intervention, whether the project is an IDA or an IBRD project, whether it is an investment project or not, as well as the quality of preparation and the supervision efforts assessed by IEG.[2] All projects considered in the analysis have been evaluated and therefore have been closed. We deliberately used the original closing date of the project to define its duration in order to avoid potential endogeneity linked to the revised closing date *vis-à-vis* the success of the project. Projects started during war are dropped from our sample. Indeed, we want to distinguish post-conflict projects from projects in countries at peace.

In order to define the civil war episodes, we used the PRIO version 4-2007 database and chose the high intensity criterion defined as at least 1,000 war related deaths per year.[3] This, of course, inevitably leads us to different results than if we used a lower level of casualties. Indeed, wars are shorter using this definition and our database includes more post-conflict episodes and relapses to civil war than if we used a total of 1,000 deaths for the conflict as a threshold. It also implies that the country reported as being in a post-conflict period or at peace, for example in the few years preceding the collapse into war, may have been considered at war using a lower intensity criteria, thus impacting on the results. However, the high intensity criterion allows defining clear episodes when a lower threshold could have led to unclear dating and would potentially be biased towards the level of information available on casualties.

Table 1 presents some basic descriptive statistics on the database of projects we used and the history of war of the countries.

Table 2 presents the evolution of the rate of success depending on time and the history of conflict (first column). The rate of success does not vary widely depending on the environment of implementation: projects in countries at war, in post-conflict and at peace seem to have around the same chance of being successful. Interestingly, we remark that the rate of success of projects did somewhat decrease over time: only 52 percent of the projects were rated as successful or very successful in the 1990s while 87 percent of the projects were rated as successful in the 1960s, 73 percent in the 1970s and 54 percent in the 1980s. This apparent drop in the rate of success in the 1980s and 1990s

[2]Variables are presented in detail in Table 5.
[3]The list of wars is presented in Table 6.

Table 1: Descriptive statistics on projects and conflict

Number of World Bank projects evaluated	6,404
Projects started in countries at peace	**79%**
The country was always at peace	65%
The project was implemented before the outbreak of the war or after the post conflict period	35%
Projects started in a country at war	**7%**
Peace is settled during the project	70%
War resumes during the project once peace is settled	3%
Projects started in a post-conflict country	**14%**
War resumes during the project	25%

Source: authors' calculations using PRIO database on conflicts and IEG database on WB projects.

might be linked to the gradual institutionalisation of evaluation started in the mid-1970s (OED, 2003).

3 Econometric model

We estimate the probability that World Bank projects will be successful depending on a set of projects (P_j) and country characteristics ($C_{j,i}$), but also on factors relating to the history of civil war of countries ($War_{j,i}$), where j (j = 1J) denotes projects and i (i = 1I) denotes countries.

We estimate the probability of success of World Bank projects and explore whether projects in post-conflict situations follow a different pattern. To do so, we estimate a model of the following form:

$$Success^*_{j,i} = \beta' P_j + \gamma' C_{j,i} + \theta' War_{j,i} + \varepsilon j, i \tag{1}$$

$$\text{where } Success_{j,i} = \begin{bmatrix} 1 & if & Success^*_{j,i} > 0 \\ 0 & if & Success^*_{j,i} \leq 0 \end{bmatrix}$$

We consider that $Success_{j,i}$ equals 1 whenever the outcome of World Bank projects is assessed by the IEG as successful or very successful.

$C_{j,i}$ is a set of characteristics of country i averaged over [t; t-3] where t is the starting date of project j. Hence, for a project that started in 2000, each country variable, $C_{j,i}$, is calculated over the period 1997-2000. This way of controlling for country characteristics means that for two projects occurring in the same country, $C_{j,i}$ may end up being very different according to the period when

Table 2: Temporal evolution of projects by sector, (in percentage of n).

	Success=1	Infrastructures	Social sectors	Rural sector	Others
1960s n=273	**87**	**34**	**11**	**24**	**31**
At peace (n=242)	87	36	10	24	30
Post-conflict (n=19)	100	21	11	26	42
At war (n=12)	67	33	25	8	34
1970s (n=1776)	**73**	**27**	**10**	**33**	**30**
At peace (n=1502)	74	28	10	31	31
Post-conflict (n=157)	67	22	8	43	27
At war (n=121)	75	21	12	43	24
1980s (n=2323)	**54**	**22**	**11**	**28**	**39**
At peace (n=1790)	54	23	11	32	34
Post-conflict (n=383)	59	20	11	28	41
At war (n=165)	49	22	13	27	38
1990s (n=1954)	**52**	**18**	**22**	**16**	**44**
At peace (n=1487)	52	18	22	17	43
Post-conflict (n=326)	54	20	20	17	43
At war (n=166)	53	17	21	13	49

Infrastructures refers to urban development, transport and water supply sectors; social sectors include education, health and social protection.
Source: authors' calculations using PRIO database on conflicts and IEG database on WB projects.

the project was launched. $C_{j,i}$ includes the growth rate, which is expected to positively influence the probability of success of the project, as well as per capita GDP level. We also control for the size of the country (population) and the political, financial and economic risk as measured by the International Country Risk Guide[4]; a project implemented in a more stable environment is expected to have more chance of being successful.

Finally, $War_{j,i}$, is a set of variables related to the history of the conflict in country i. Of course the history of conflict varies according to the time period and again, two projects occurring in the same country but in different decades may end up with quite different conflict history.

As the idea of the paper is to analyze the success of projects more specifically in post-conflict environment, it is all the more necessary to understand and best catch the history of the war *vis-à-vis* the project. Figure 1 illustrates the method of reasoning. From this tree we derived the set of $War_{j,i}$ variables.

The first step, at the country history level, was to distinguish between the countries that have always been at peace since 1945, like Ghana or Tunisia, and countries that have suffered from a civil war or multiple episodes of war such as Sierra Leone or the Democratic Republic of Congo. The dummy variable AT_PEACE is equal to one for the countries that never had a civil war.

The second step consists in focusing on the starting date of the project: Was the country at war or in post-conflict? This leads us to define two different variables: INIT_WAR is equal to one for countries that were at war when the project started. Symmetrically, INIT_PC is a dummy which is equal to one when the country was in post-conflict when the project started. We define post-conflict as the 15 years which follows the onset of peace.

The third step focuses on the project period. If the country was at war at the beginning of the project, it is necessary to indicate whether the war lasted for the duration of the project or whether peace was settled during the project. We create a dummy variable, WAR_PROJECT which is equal to one if the country was at war during the entire project. On the contrary, if war ended during the project, a dummy RETURN_PEACE is equal to one.

[4]The ICRG is a methodology developed by Political Risks Services. The rating comprises 22 variables in three categories: political, financial and economic each divided in series of risk components. The final composite index is a sum of all those risks that ranges from 0 to 100. This index was preferred to the Country Policy and Institutional Assessment which is computed by the World Bank and therefore might raise endogeneity issues.

Similarly, if the country was in a post-conflict phase at the beginning of the project and that the peace lasted during the whole project, a dummy PC_PROJECT is equal to one. If war resumed while the project had already started, a dummy RETURN_WAR is equal to one.

The final step investigates the timing of the project vis--vis the conflict or the peace. We generate a variable, PC_DURATION, which counts the number of years of post-conflict peace when the project started. This variable is central to the forthcoming analysis.

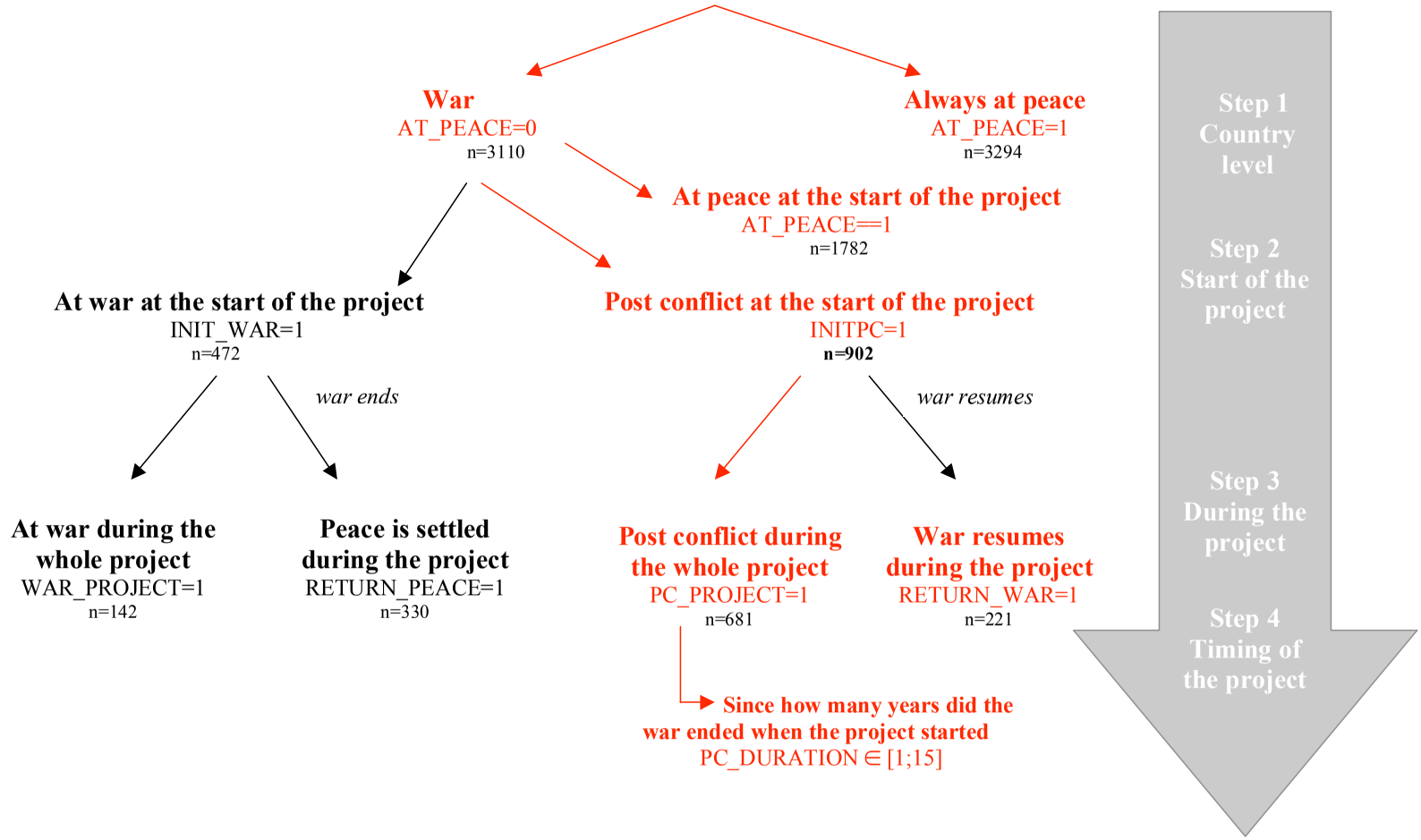
Interestingly, the sector repartition is relatively similar whether the country is at peace, at war or in post-conflict at the beginning of the project, with around a quarter of the projects implemented in the rural sector and around 10 to 15 percent in the energy and mining sector. Looking in more details at the evolution of projects overtime, differences in sectors of intervention depending on whether the country is at peace, in post-conflict or at war are not striking. Yet we observe a switch away from the rural sector in the 1990s.

4 Results

We estimate Equation (1) using a probit. We focus the analysis on projects in post-conflict and peace environments (highlighted in red in Figure 1). We drop the projects implemented in war zones (7 percent of the projects, cf. Table 1 and Figure 1). Our sample is reduced by the introduction of some of the control variables for country characteristics. From more than 6,000 projects, we end up with 2,394 projects, covering the period 1977-2002. Around 55 percent of these projects (1,324 projects) were implemented in countries always at peace, 26 percent (639 projects) in countries at peace at the start of the project, but which had at least one episode of civil war during 1977-2002. Finally, 18 percent of these projects (431 projects) were implemented in post-conflict environments.

Our empirical strategy is as follows. First, we explore whether the probability of success is different in post-conflict situations than in countries at peace. We then ask when during the post-conflict period projects should be started so that they have the greatest chance of success. We also explore whether post-conflict situations call for improved supervision and preparation. Finally, the sectoral sequence of post-conflict intervention is analyzed.

Figure 1: History of War and World Bank projects



4.1 Are post-conflict projects more successful than others?

The first column of Table 3 includes all our control variables and is run on the whole sample of World Bank projects, excluding projects in war-torn countries. We use an ordered probit model using the IEG success rating from 0 to 5. The use of an ordered probit enables to not lose the information contained in the discrete variable. However, interpretation of the results is a lot less intuitive than for a probit, which is therefore preferred. Table 10 reports the marginal effects from regression (1) for each outcome value. Coefficients change signs between the project being *moderately successful* and *successful* thus confirming the appropriateness of our binary variable definition. Column (2) shows the results of the probit model. The signs and the significance of the coefficients are not affected by the change of model. The sample includes projects started in a post-conflict environment and during which the war broke out again. Introducing a dummy variable for a potential return to war shows that these projects are not significantly different from the rest of the projects in the sample (Table 9, column (1)). Decade, region, as well as sector dummy variables are introduced in all the regressions of Table 3, their coefficients are not reported. The standard errors are also clustered by country.

Column (2) includes the ICRG index as a control. The coefficient is negative, as expected, but not significant. Nevertheless, the introduction of the ICRG in the regression leads to a significant loss of observations. Indeed, the ICRG is only available since 1984. For this reason, we decide to drop it from the regression. Column (3) reports the results of the basis analysis.

The results suggest that the longer the project, the smaller the chance of success. On the contrary, better preparation and supervision significantly increase the probability of success of World Bank projects. Yet the impact of the supervision quality is greater than the one of the preparation.[5] Investments are nine percent more likely to be successful while IDA projects have an eleven percent higher probability to be successful than IBRD projects.

Regarding country-level characteristics, income growth and GDP per capita scores are significantly different from zero. Both increase the chances that World Bank projects will succeed, suggesting that higher level of development, combined with economic growth are favorable to aid projects.[6]

In the fourth column of Table 3, we introduced interaction terms between INIT_PC and the project characteristics. This enables a first step of comparison between post-conflict and peace environments.

[5] We cannot reject the hypothesis that the coefficients of preparation and supervision are different (p-value = 0.016).

[6] We also introduced the ratio of aid over GDP as well as the dependency on fuel exports. Both had no impact on the probability of success of the project. We thus decided to drop them from the regression as they led to a loss of observations, see Table (9) column (2). Note that aid/GDP is significant but only at 10 percent

Unsurprisingly, the coefficient of INIT_PC is negative, large and significant, implying that projects started in a post-conflict environment have lower chances of success than projects implemented in countries at peace. The coefficients of the interaction terms are not significant, apart from preparation and supervision. Hence, the duration of the project, whether it is an investment and whether it is an IDA project all have a significant impact on the probability of success but this impact does not differ in post-conflict countries than in countries at peace. Nevertheless, the quality of both preparation and supervision have a positive and significant effect on the probability of success. In fact, good preparation and supervision can offset the negative effect of implementing a project in a post-conflict environment.

4.2 When during post-conflict is it best to start a project?

Columns (5) and (6) of Table 3 push further the analysis of post-conflict projects. They examine when, during the post-conflict period, aid projects have the highest chance of success. To do so, we include PC_DURATION, which measures the number of years, at the starting date of the project, since peace onset. We also include its square to capture possible non-linear relationships between the probability of success and the time elapsed since the onset of peace. Of course, we also need to distinguish between post-conflict countries and countries at peace: INIT_PC captures whether the project was started in a country at peace or in a post-conflict situation.

We also introduce the post-conflict variables interacted with the quality of supervision in order to capture a potential different effect of supervision on the success of post-conflict projects. Preparation does not have a special effect in post-conflict. Interaction terms of preparation with INIT_PC and PC_DURATION were also introduced in the regression but we dropped them as their coefficients were not significantly different from zero. Preparation is important for the success of projects. Whether it is set in a post-conflict environment however does not increase or decrease the benefits of good preparation, once we control for timing. The impact stays the same (Table 9, column (3)).

On the contrary, the quality of supervision has a distinctive impact on the success of projects in post-conflict countries. The coefficient of INIT_PC x supervision is large and positive. As mentioned above, good quality supervision which is a proxy for implementing capacity does quickly offset the direct negative impact of starting a project in post-conflict. Being in a post-conflict environment at the time when the project starts (INIT_PC) is significant at 1 percent, with a negative coefficient. This negative effect is compensated by the higher impact of the quality of supervision in post-conflict

Table 3: Success of project depending on post-conflict situations (marginal effects)

	Oprobit	Probit	Probit	Probit	Probit	Probit
Project characteristics						
Duration	-0.076	-0.028	-0.027	-0.026	-0.027	-0.027
	(0.022)***	(0.010)***	(0.009)***	(0.009)***	(0.008)***	(0.008)***
Investment=1	0.293	0.101	0.095	0.092	0.098	0.096
	(0.107)***	(0.055)*	(0.049)**	(0.054)*	(0.048)**	(0.048)**
IDA=1	0.241	0.136	0.114	0.110	0.120	0.121
	(0.068)***	(0.036)***	(0.034)***	(0.040)***	(0.036)***	(0.037)***
Preparation (1-4)	1.030	0.444	0.387	0.356	0.384	0.384
	(0.078)***	(0.041)***	(0.032)***	(0.032)***	(0.033)***	(0.033)***
Supervision (1-4)	1.007	0.462	0.477	0.464	0.467	0.460
	(0.058)***	(0.035)***	(0.031)***	(0.032)***	(0.034)***	(0.033)***
Country characteristics						
GDP Growth, (t-3;t)	0.036	0.013	0.008	0.007	0.008	0.008
	(0.012)***	(0.006)**	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Ln GDP per cap, (t-3;t)	0.129	0.089	0.063	0.069	0.069	0.069
	(0.048)***	(0.024)***	(0.021)***	(0.021)***	(0.022)***	(0.021)***
Ln population, (t-3;t)	0.015	0.015	0.006	0.007	0.005	0.005
	(0.026)	(0.013)	(0.010)	(0.010)	(0.010)	(0.010)
ICRG, (t-3;t)	-0.002	-0.002				
	(0.005)	(0.003)				
Conflict history						
INIT_PC				-0.665	-0.656	-0.798
				(0.082)***	(0.103)***	(0.190)***
INIT_PC x Duration				-0.004		
				(0.023)		
INIT_PC x Investment				0.034		
				(0.109)		
INIT_PC x IDA				0.079		
				(0.073)		
INIT_PC x Preparation				0.212		
				(0.069)***		
INIT_PC x Supervision				0.119	0.374	0.593
				(0.069)*	(0.105)***	(0.486)
PC Duration					0.226	0.284
					(0.095)**	(0.318)
PC Duration^2					-0.014	-0.012
					(0.008)*	(0.015)
PC Duration x Supervision					-0.088	-0.095
					(0.030)***	(0.106)
PC Duration^2 x Supervision					0.005	0.004
					(0.002)**	(0.005)
cut1	4.264					
cut2	6.100					
cut3	6.416					
cut4	7.186					
cut5	9.320					
Decade dummies	Yes	Yes	Yes	Yes	Yes	Yes
Region effects	Yes	Yes	Yes	Yes	Yes	Yes
Sector effects	Yes	Yes	Yes	Yes	Yes	Yes
Jointly significant test (Chi2)					0.000	0.191
Threshold in years (supervision=2.8)					11.5	
Pseudo R^2	0.22	0.31	0.29	0.30	0.30	0.30
ll	-2047.308	-866.636	-1202.669	-1196.901	-1197.236	-1199.259
Observations	1830	1828	2464	2464	2464	2464

Note: Robust standard errors in parentheses. Significant at (*) 10%, at (**) 5%, at (***) 1%

environment, as captured by the interaction term of INIT_PC and supervision. At the average supervision quality index (=2.8), a project started in post-conflict has a 39 percent higher chance of success than a project started in a peaceful country, without introducing the effect of time since peace onset.

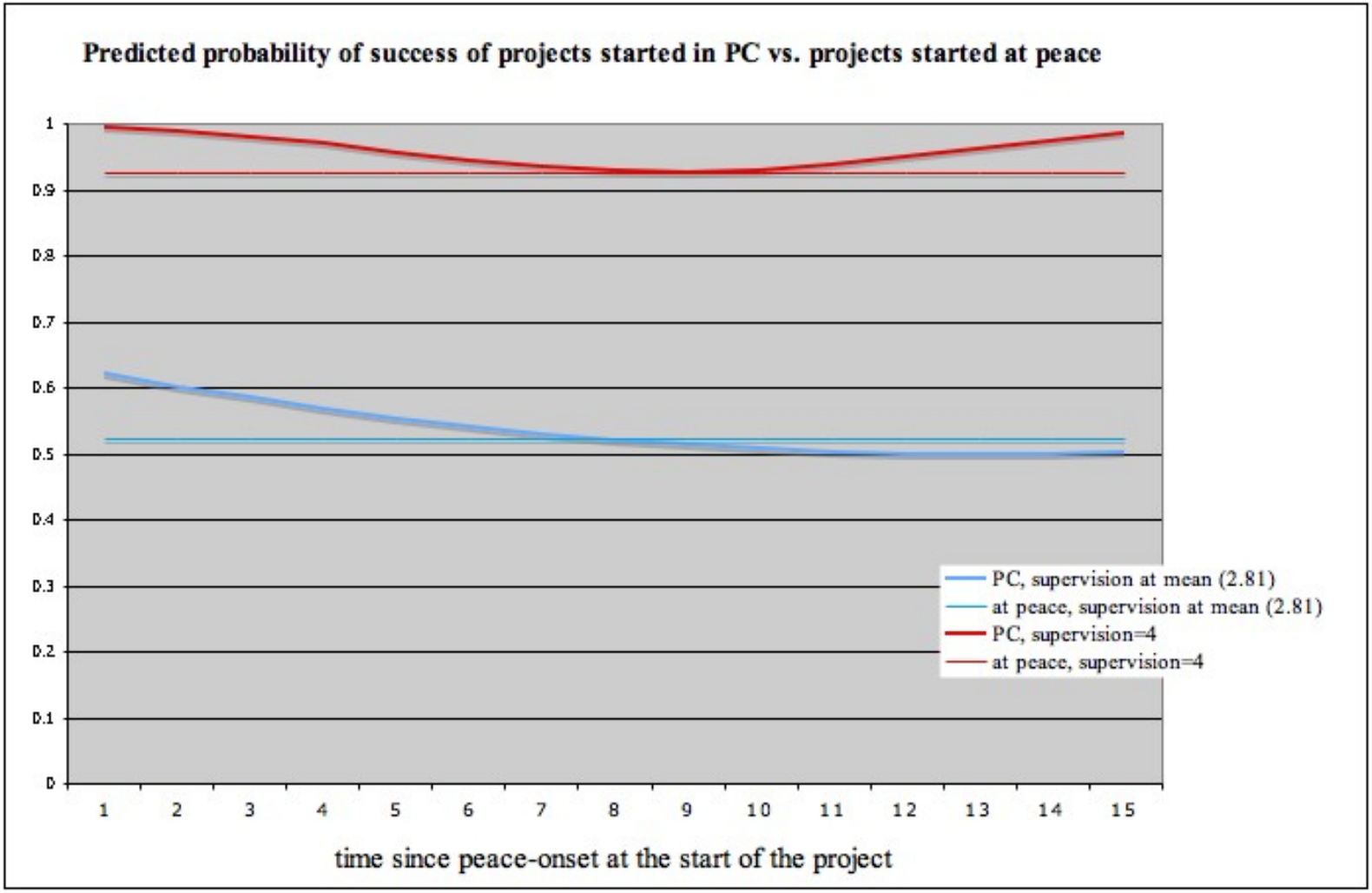
Column (5) of Table 3 also includes information as to when during the post-conflict period the projects have a higher chance of success. The variable PC_DURATION, its square, and their interactions with supervision suggest that the relationship between time since peace onset and the probability of success is non-linear and depends on the quality of supervision.

Taking supervision at its mean (=2.8), Figure 2 shows that the probability of success is higher in post-conflict environments than in peaceful environments during the first 4 to 5 years. The marginal impact of time since peace onset is negative, though, until the 12th year of peace (as suggested by the negative slope of the blue line until the 12th year). However, for very low values of supervision, projects in both peaceful and post-conflict situations have a very low probability of success. For very high values of supervision, the probability of success is very high, and there is almost no difference between post-conflict and peaceful countries, although again, the difference between the two red curves indicates a slightly higher probability of the project being successful in post-conflict environments.

The absorptive capacity in post-conflict seems to be conditional to the capacity to implement projects. Supervision is a good proxy for implementing capacity. It is implementation rather than design that matters for the success of projects in post-war environment. This conclusion is verified at the national level. Collier and Duponchel (2010) analyze the economic legacy of war on firms using data collected in Sierra Leone. They find that the main consequence of civil war on firms is a severe lack of skills. To increase the chances of success of projects this shortage needs to be filled. The effect of supervision decreases overtime following a U-shaped trend as illustrated by Figure 3. Arguably, national skills slowly recover a decent level as peace is maintained; hence, the additional benefits associated with the quality of supervision fade as time goes on and as peace lasts. According to Figure 3, by the 5th year since the peace-onset, the impact of supervision reaches the same level as in environments at peace. This could be explained by the supra-normal growth in the second phase of post-conflict (Collier and Hoeffler, 2004) that creates a more secure environment for projects. Thus supervision might be less important for success during this phase of boom in the post-conflict economy.

In column (6) we calculate the time since peace onset taking as a reference the middle date of the projects. In doing so, we give each year the same weight. Previously, while using the time since peace-onset at the starting date of the project, more weight is put on the beginning of the project.

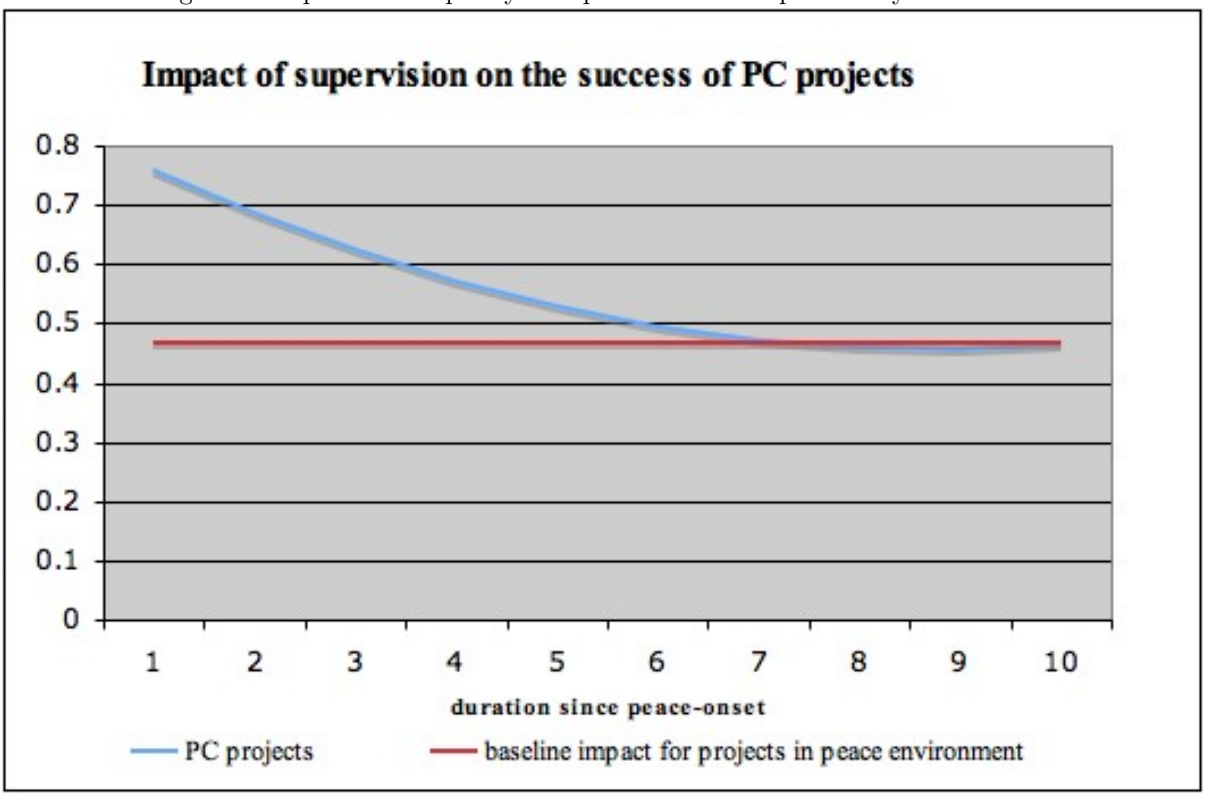
Figure 2: Impact on the probability of success of time since peace onset



Using regression 5 in Table 3.

The coefficients lose significance confirming that implementing capacity matters especially at the beginning of the project. For the projects started in the first few years of peace, it is essential to have an excellent supervision. The earlier the project starts, the higher the impact of the quality of supervision.

Figure 3: Impact of the quality of supervision on the probability of success



4.3 Are some sectors more promising in post-conflict?

Introducing sector dummies interacted with the post-conflict characteristics allows investigating whether the probability of the project being successful is peculiar in post-conflict environment depending on the sector of intervention. In other words, is there some kind of different sectoral targeting in post-conflict situations? In Table 4, we investigate whether projects are more likely to succeed in some sectors rather than in others in post-conflict situations. Table 9 reports the results when none of the sector variables are significant. As we only have access to cross-sectional information and not information generated by a sequence of things within a particular country, we purposely avoid making strong statements about sector sequence.

Starting from our baseline regression (regression (5) of Table 3), we introduce a dummy for each

Table 4: Probability of success in post-conflict by sector

	Educ.	Energy/Min.	Transport	Private	Urban dvpt	Soc. protec.
Project characteristics						
Duration	-0.030	-0.029	-0.028	-0.027	-0.028	-0.026
	(0.008)***	(0.008)***	(0.008)***	(0.008)***	(0.008)***	(0.008)***
Investment=1	0.137	0.145	0.122	0.133	0.134	0.127
	(0.043)***	(0.042)***	(0.044)***	(0.042)***	(0.043)***	(0.043)***
IDA=1	0.115	0.112	0.129	0.117	0.120	0.114
	(0.035)***	(0.035)***	(0.036)***	(0.034)***	(0.034)***	(0.035)***
Preparation (1-4)	0.384	0.383	0.379	0.384	0.383	0.383
	(0.033)***	(0.033)***	(0.032)***	(0.033)***	(0.033)***	(0.032)***
Supervision (1-4)	0.473	0.474	0.470	0.473	0.474	0.472
	(0.034)***	(0.033)***	(0.033)***	(0.033)***	(0.034)***	(0.033)***
Country characteristics						
GDP Growth, (t-3;t)	0.008	0.008	0.008	0.008	0.008	0.008
	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Ln GDP per cap, (t-3;t)	0.065	0.067	0.069	0.068	0.068	0.071
	(0.021)***	(0.021)***	(0.021)***	(0.021)***	(0.021)***	(0.021)***
Ln population, (t-3;t)	0.003	0.002	0.003	0.002	0.002	0.003
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Conflict history						
INIT_PC	-0.662	-0.663	-0.665	-0.682	-0.683	-0.668
	(0.109)***	(0.106)***	(0.104)***	(0.094)***	(0.075)***	(0.101)***
PC Duration	0.216	0.212	0.239	0.229	0.226	0.212
	(0.099)**	(0.103)**	(0.097)**	(0.097)**	(0.086)***	(0.093)**
PC Duration^2	-0.013	-0.013	-0.015	-0.014	-0.013	-0.013
	(0.008)*	(0.008)	(0.008)*	(0.008)*	(0.007)*	(0.007)*
INIT_PC x Supervision	0.380	0.389	0.381	0.394	0.393	0.384
	(0.114)***	(0.117)***	(0.114)***	(0.112)***	(0.093)***	(0.109)***
PC Duration x Supervision	-0.084	-0.084	-0.094	-0.087	-0.086	-0.084
	(0.031)***	(0.034)**	(0.032)***	(0.031)***	(0.028)***	(0.030)***
PC Duration^2 x Supervision	0.005	0.005	0.006	0.005	0.005	0.005
	(0.003)**	(0.003)*	(0.003)**	(0.002)**	(0.002)**	(0.002)**
Sector characteristics						
Sector	0.089	-0.025	0.098	0.083	0.005	0.149
	(0.050) *	(0.042)	(0.057)*	(0.077)	(0.069)	(0.077)*
INIT_PC x Sector	-0.037	-0.203	-0.038	0.474	0.265	-0.245
	(0.144)	(0.108)*	(0.196)	(0.014)***	(0.116)**	(0.408)
PC Duration x Sector	-0.038	0.012	0.079	-0.657	-0.035	0.121
	(0.049)	(0.037)	(0.096)	(0.211)***	(0.053)	(0.235)
PC Duration^2 x Sector	0.004	-0.000	-0.002	0.099	0.000	0.001
	(0.003)	(0.002)	(0.008)	(0.040)**	(0.004)	(0.022)
Decade dummies	Yes	Yes	Yes	Yes	Yes	Yes
Region effects	Yes	Yes	Yes	Yes	Yes	Yes
Jointly significant test, Chi2 (Conflict variables*Sector)	0.061	0.205	0.010	0.000	0.233	0.000
Pseudo R^2	0.29	0.29	0.29	0.29	0.29	0.29
ll	-1213.363	-1213.527	-1205.504	-1212.415	-1214.183	-1211.455
No. of firms in sector i	214	385	261	79	132	76
Observations	2466	2466	2466	2466	2466	2466

Note: Robust standard errors in parentheses. Significant at (*) 10%, at (**) 5%, at (***) 1%

sector, as well as a sector dummy interacted with INIT_PC and PC_DURATION. The results underline that projects in the education sector are always more successful than projects in other sectors (column 1). Nevertheless, they seem less likely to be successful compared to projects in other sectors in post-conflict settings. Yet the coefficient of the interacted terms INIT_PC x sector is only significant at 10 percent. Projects in the urban development sector (column 5) have a significantly lower probability to fail in post-conflict ceteris paribus. In fact, they have a 26.5 percent higher chance of being successful compared to projects in other sectors. This can be potentially explained by the fact that war lead to the destruction of infrastructure which needs to be rebuilt once peace has been restored. Moreover, war often induces massive movements of people, from rural areas to cities in the country, and outside of the countries. Refugees are potentially more inclined to move to cities upon return, consequently raising the needs for development in urban areas. The opposite applies for projects in the energy and mining sectors (column 2). Those projects are significantly less successful in post-conflict environments (by 10 percent) than projects in other sectors. One explanation might be that checks and balances need to be restored for projects in this sector to succeed fully.

Column (1) suggests that projects targeting education have a significantly higher probability to succeed *ceteris paribus*. Although the coefficients of the interacted terms are not significant individually, they are together. As a result, education projects have a higher probability to fail in post-conflict countries especially when peace was just settled (see Figure 4). Hence, if you look at the curve projects in education should wait a few years; however there is a clear need for knowledge to be rebuilt in immediate post-conflict environment. Indeed, as shown by Collier and Duponchel (2010)'s research on Sierra Leone, one of the persistent consequences of war at the firm level is the loss of skills. Moreover, war very often leads to the removal from school of a large number of children, either because classes are closed, they are required to work for the subsistence of the family as resources become scarce, they are forced to flee or in the extreme cases, children are enrolled to fight. In all cases, education of children suffers during war time. Education should therefore be among priorities. Extra supervision of the projects might be needed to increase the chances of success.

The probability of success in the transport sector is higher than in all sectors. In post-conflict environment, it however follows a U-inversed shaped path (column 3). Indeed, Figure 4 shows that the probability of success increases once peace is settled and then decreases after a few years. The reason behind can surely be linked, like projects in the urban development sector, to the destruction of infrastructure. Roads and transport systems are undeniably badly hit by warfare and should be rebuilt as soon as possible in order to restore exchanges. As the absorption capacity is greater in the sector, transport projects are more successful *ceteris paribus*.

On the contrary, projects targeting the private sector face a higher probability of failure than projects in other sectors in the first five years after the end of the civil war (column 4). It however follows a U shaped path and by the fifth year, private sector projects are more successful than others. The immediate aftermath of war is not the most favourable environment for business prosperity, which might well explain the lower probability of success. A good example is the destruction of transport infrastructure which are essential for business activities, especially those dealing with tradable goods.

Finally, the probability of success of a social protection project increases over time since the peace onset passes. Social protection is defined by the World Bank as policies to alleviate poverty and promote equitable growth via expending opportunities, providing security and enhancing equity.[7] As the situation in the country improves together with the quality of institutions, projects enhancing social protection become more likely than others to succeed, as rated by IEG. The complete breakdown of social services during conflict leads to a great need for intervention once peace is settled. As time goes on and the country gradually recovers, the conditions for the success of those projects ameliorate.

Figure 4 below illustrates the evolution of the probability of success of projects when it varies over time.

5 Conclusion

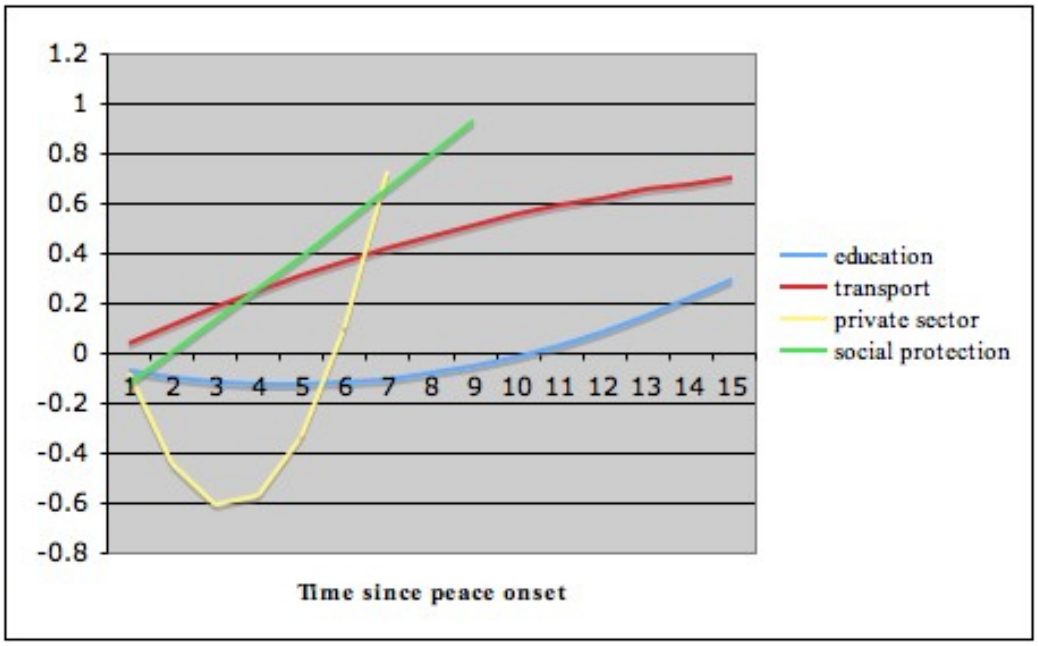
This paper investigates the determinants of the success of World Bank projects in post-conflict situations. Our econometric analysis suggests that being a post-conflict country at the time when the project starts increases the probability that the project will succeed. But gradually the positive impact of being in a post-conflict situation on the chance of success fades.

Supervision of projects seems to be crucial for their success, even more in post-conflict situations. If supervision is not satisfactory enough, being a post-conflict country may have an adverse impact on the success of projects, even in the first years of peace. A good implementation capacity is essential for the success of post-conflict projects. Indeed, war results in the destruction of skills. World Bank staff need to accompany their projects with the technical assistance required.

Post-conflict situations also call for a distinctive sectoral intervention. Projects targeting urban de-

[7] www.worldbank.org.

Figure 4: Impact on probability of success of time since peace onset: education, transport, private sector and social protection sector



velopment and in the transport sector seem to be more successful in post-conflict environments *ceteris paribus*. In fact, for transport projects, the probability of success significantly rises as time since peace onset increases. In both cases, this can be explained by the necessity to reconstruct destroyed infrastructure for the economy to recover. Projects in the private sector need to be implemented after the first five years of peace for the chances of success to be higher than projects targeting other sectors, underlining the potentially hostile environment for business in the early years of peace. Education projects face a higher probability of failure in post-conflict environments, but should however not be excluded from the recovery process. However, those should be closely supervised to offset the negative impact. Finally, we observe that the probability of success of social protection projects rises over time as peace is sustained.

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Table 5: Definition of variables

	Variable Name	Description
Project	Duration	Duration of the project (source: IEG)
	Investment	Binary variable equal to 1 if the project is an investment (source: IEG)
	IDA	Binary variable equal to 1 if the project is financed by IDA (source: IEG)
	Preparation	Quality of the preparation from WB staff as rated by IEG from 1 to 4 (source: IEG)
	Supervision	Quality of the supervision from WB staff as rated by IEG from 1 to 4 (source: IEG)
Environment	GDP Growth, t- t-3	Average growth rate of GDP during the 3 years preceding the implementation of the project
	Ln GDP per capita, t- t-3	Average of the logarithms of the level of GDP per capita during the 3 years preceding the implementation of the project (source: WDI)
	Ln population, t- t-3	Average of the logarithms of the size of the country population over the 3 years preceding the implementation of the project (source: WDI)
	ICRG, t- t-3	Average of the International Country Risk Guide over the 3 year preceding the implementation of the project (source: Political Risk Services)

Table 6: List of Civil Wars (Prio v04-2007)

Definition of civil war: high intensity, internal and internationalized internal conflict

Afghanistan: 1978-2001, 2005-2006	Laos: 1959-1961,1963-1973
Algeria: 1993-2001	Lebanon: 1958, 1976, 1980-1982
Morocco: 1975-1980	Liberia:1990, 1992, 2003
Angola: 1974-1994, 1998-2001	Mozambique: 1981-1992
Argentina: 1975	Myanmar: 1948-1953, 1961-1978, 1992, 1994
Azerbaijan: 1992-1994	Nepal: 2002-2005
Burundi: 1998, 2000-2002	Nicaragua: 1978-1979, 1983-1988
Cambodia: 1967,1970-1975,1978, 1989	Nigeria: 1967-1970
Cameroon: 1960	Pakistan: 1971, 1974
Chad: 1965-1988, 1990, 2006	Paraguay: 1947
China: 1946-1949,1956,1959	Peru 1981-1985, 1988-1993
Colombia: 2001-2002, 2004-2005	Philippines: 1946-1954, 1978, 1981-1986, 1989, 1991-1992, 2000
Congo: 1997-1998	Republic of Korea: 1948-1950
Costa Rica: 1948	Russia*: 1946-1948, 1995-1996, 1999-2001, 2004
Croatian Republic of Bosnia*: 1992-1993	Rwanda: 1991-1992, 1998, 2001
Cuba: 1958	Sierra Leone: 1998-1999
DRC: 1964-1965,1997-2000	Somalia: 1990-1992
El Salvador: 1981-1990	South Africa: 1980-1983, 1986-1988
Ethiopia: 1974-1991	Sri Lanka: 1971, 1989-2001, 2006
Georgia: 1993	Sudan: 1963-1972, 1983-1992, 1995-2004, 2006
Greece: 1946-1949	Syria: 1982
Guatemala: 1967-1981	Tajikistan: 1992-1993
Guinea Bissau: 1998	Turkey: 1992-1997
Hyberdad: 1947-1948*	Uganda: 1979, 1981-1989, 1991, 2002, 2004
India: 1948-1951,1988-1993, 1998-2005	Vietnam: 1955-1964
Indonesia: 1950, 1953, 1975-1978, 1990	Yemen (AR)*: 1948, 1962-1964, 1966-1967, 1994
Iran: 1980-1988	Yugoslavia (Serbia)*: 1991, 1998-1999
Iraq: 1961-1966, 1969, 1974-1975, 1988, 1991, 2004-2006	Zimbabwe: 1976-1979

*Hyberdad was not included in the dataset. The Balkan countries are dropped at a later stage due to matching problems with national information as a result of the numerous secessions. Russia is only included after the fall of the USSR. The Yemenite wars are only reported once the North and the South have reunified in order to match the macro-economic data.
The country is considered post conflict starting on the first year of full peace and exit on the 1st full year of war i.e. the year when war resumes is still considered as post conflict.

Table 7: Descriptive statistics of projects

Variable	**Nb of observations**	**Mean**	**Diff. between PC and peace projects**
Duration	6404	4.67	0.10*
Dummy Investment=1	6397	0.90	-0.01
Dummy IDA=1	6404	0.43	-0.00
Preparation	2853	2.85	-0.01
Supervision	3913	2.81	0.00

*: Difference significant at 10

Table 8: Probability of success in post-conflict by sector (2), marginal effects

	Econ Pol	Health	Financial	Rural	Govce	Water	Env.
Project characteristics							
Duration	-0.028	-0.027	-0.028	-0.026	-0.029	-0.029	-0.028
	(0.008)***	(0.009)***	(0.008)***	(0.008)***	(0.008)***	(0.008)***	(0.008)***
Investment=1	0.125	0.141	0.134	0.137	0.138	0.140	0.143
	(0.049)**	(0.043)***	(0.043)***	(0.043)***	(0.043)***	(0.043)***	(0.042)***
IDA=1	0.118	0.121	0.118	0.126	0.119	0.118	0.119
	(0.035)***	(0.036)***	(0.035)***	(0.034)***	(0.035)***	(0.035)***	(0.034)***
Preparation (1-4)	0.382	0.384	0.384	0.382	0.384	0.384	0.382
	(0.033)***	(0.033)***	(0.033)***	(0.033)***	(0.033)***	(0.034)***	(0.033)***
Supervision (1-4)	0.475	0.474	0.473	0.474	0.472	0.474	0.474
	(0.033)***	(0.034)***	(0.033)***	(0.034)***	(0.033)***	(0.033)***	(0.033)***
Environment characteristics							
GDP Growth, (t-3;t)	0.008	0.008	0.008	0.007	0.007	0.008	0.008
	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Ln GDP per cap, (t-3;t)	0.069	0.068	0.068	0.071	0.067	0.067	0.068
	(0.021)***	(0.021)***	(0.021)***	(0.021)***	(0.021)***	(0.021)***	(0.021)***
Ln population, (t-3;t)	0.002	0.002	0.002	0.004	0.001	0.002	0.002
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Conflict history							
INIT_PC	-0.662	-0.671	-0.667	-0.671	-0.671	-0.668	-0.663
	(0.101)***	(0.091)***	(0.102)***	(0.105)***	(0.097)***	(0.098)***	(0.101)***
PC Duration	0.217	0.248	0.217	0.243	0.220	0.213	0.212
	(0.092)**	(0.098)**	(0.096)**	(0.098)**	(0.092)**	(0.092)**	(0.092)**
PC Duration^2	-0.013	-0.016	-0.013	-0.015	-0.013	-0.013	-0.013
	(0.007)*	(0.008)**	(0.008)*	(0.008)**	(0.007)*	(0.008)*	(0.007)*
INIT_PC x Supervision	0.379	0.386	0.382	0.383	0.393	0.391	0.376
	(0.106)***	(0.103)***	(0.111)***	(0.110)***	(0.110)***	(0.107)***	(0.107)***
PC Duration x Supervision	-0.086	-0.093	-0.085	-0.090	-0.088	-0.084	-0.082
	(0.029)***	(0.031)***	(0.031)***	(0.030)***	(0.029)***	(0.029)***	(0.029)***
PC Duration^2 x Supervision	0.005	0.006	0.005	0.005	0.005	0.005	0.005
	(0.002)**	(0.003)**	(0.002)**	(0.002)**	(0.002)**	(0.002)**	(0.002)**
Sector characteristics							
Sector	-0.053	-0.075	-0.048	-0.047	-0.094	0.029	-0.074
	(0.065)	(0.066)	(0.066)	(0.033)	(0.050)*	(0.064)	(0.068)
INIT_PC x Sector	-0.027	0.057	0.127	0.121	-0.306	-0.385	0.016
	(0.229)	(0.249)	(0.197)	(0.169)	(0.205)	(0.174)**	(0.388)
PC Duration x Sector	0.034	-0.054	-0.004	-0.061	0.144	0.094	-0.043
	(0.106)	(0.071)	(0.064)	(0.059)	(0.114)	(0.102)	(0.054)
PC Duration^2 x Sector	-0.001	0.003	-0.001	0.003	-0.009	-0.004	0.003
	(0.008)	(0.005)	(0.004)	(0.004)	(0.007)	(0.005)	(0.004)
Decade dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.29	0.29	0.29	0.29	0.29	0.29	0.29
LL	-1214.274	-1213.201	-1214.882	-1212.531	-1213.387	-1214.405	-1214.753
No. of firms in sector i	171	137	139	507	129	125	70
Observations	2466	2466	2466	2466	2466	2466	2466

Note: Robust standard errors in parentheses. Significant at (*) 10%, at (**) 5%, at (***) 1%

Table 9: Probability of success in post-conflict (2), marginal effects

	(1)	(2)	(3)	(4)	(5)	(6)
Project characteristics						
Duration	-0.028	-0.030	-0.027	-0.017	-0.028	-0.077
	(0.009)***	(0.009)***	(0.009)***	(0.008)**	(0.009)***	(0.020)***
Investment=1	0.097	0.074	0.101	0.087	0.099	0.310
	(0.049)**	(0.058)	(0.049)**	(0.056)	(0.048)**	(0.091)***
IDA=1	0.117	0.138	0.118	0.072	0.120	0.151
	(0.035)***	(0.036)***	(0.036)***	(0.028)**	(0.036)***	(0.077)*
Preparation (1-4)	0.385	0.390	0.357	0.261	0.383	0.938
	(0.032)***	(0.037)***	(0.032)***	(0.025)***	(0.032)***	(0.068)***
Supervision (1-4)	0.478	0.468	0.480	0.293	0.467	0.980
	(0.031)***	(0.034)***	(0.030)***	(0.024)***	(0.034)***	(0.052)***
Environment characteristics						
GDP Growth, (t-3;t)	0.009	0.008	0.008	0.014	0.008	0.012
	(0.003)***	(0.005)*	(0.003)***	(0.005)***	(0.003)***	(0.006)**
Ln GDP per cap, (t-3;t)	0.064	0.044	0.071	0.039	0.069	0.100
	(0.021)***	(0.021)*	(0.022)***	(0.019)**	(0.022)***	(0.047)**
Ln population, (t-3;t)	0.005	0.001	0.007	0.001	0.005	0.010
	(0.010)	(0.011)	(0.010)	(0.011)	(0.010)	(0.022)
ICRG, (t-3;t)				-0.003		
				(0.002)		
Aid/GDP, (t-3;t)		-0.005				
		(0.003)*				
Fuel exports ratio, (t-3;t)		-0.001				
		(0.001)				
Conflict history						
INIT_PC			-0.559	-0.462	-0.664	-0.468
			(0.306)*	(0.221)**	(0.097)***	(0.467)
RETURN_WAR	0.065				0.045	
	(0.090)				(0.127)	
PC Duration			0.075	0.087	0.228	0.136
			(0.237)	(0.050)*	(0.096)**	(0.130)
PC Duration^2			-0.006	-0.005	-0.014	-0.010
			(0.014)	(0.004)	(0.008)*	(0.008)
INIT_PC x Preparation			0.278			
			(0.200)			
PC Duration x Preparation			-0.034			
			(0.077)			
PC Duration^2 x Preparation			0.002			
			(0.005)			
INIT_PC x Supervision				0.164	0.378	0.280
				(0.047)***	(0.106)***	(0.152)*
PC Duration x Supervision				-0.046	-0.089	-0.087
				(0.018)**	(0.031)***	(0.043)**
PC Duration^2 x Supervision				0.003	0.005	0.006
				(0.001)*	(0.002)**	(0.003)**
cut1						3.757
cut2						5.505
cut3						5.798
cut4						6.483
cut5						8.618
Decade dummies	Yes	Yes	Yes	Yes	Yes	Yes
Region effects	Yes	Yes	Yes	Yes	Yes	Yes
Sector effects	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.29	0.29	0.30	0.34	0.30	0.21
ll	-1202.024	-937.31	-1197.121	-705.238	-1197.007	-2817.873
Observations	2464	1918	2464	1828	2464	2467

Note: Robust standard errors in parentheses. Significant at (*) 10%, at (**) 5%, at (***) 1%

Table 10: Probability of success in post-conflict, marginal effects by outcome after ordered probit

	Success=0	Success=1	Success=2	Success=3	Success=4	Success=5
Project characteristics						
Duration	0.000	0.015	0.006	0.009	-0.026	-0.004
	(0.000)**	(0.004)***	(0.002)***	(0.003)***	(0.008)***	(0.001)***
Investment=1	-0.002	-0.065	-0.022	-0.028	0.105	0.012
	(0.001)	(0.027)**	(0.008)***	(0.008)***	(0.039)***	(0.004)***
IDA=1	-0.001	-0.046	-0.018	-0.030	0.083	0.013
	(0.000)**	(0.012)***	(0.006)***	(0.010)***	(0.023)***	(0.004)***
Preparation (1-4)	-0.004	-0.203	-0.078	-0.124	0.359	0.050
	(0.001)***	(0.019)***	(0.010)***	(0.014)***	(0.030)***	(0.007)***
Supervision (1-4)	-0.004	-0.198	-0.077	-0.121	0.351	0.049
	(0.001)***	(0.015)***	(0.009)***	(0.013)***	(0.023)***	(0.006)***
Environment characteristics						
GDP Growth, (t-3;t)	-0.000	-0.007	-0.003	-0.004	0.013	0.002
	(0.000)**	(0.002)***	(0.001)***	(0.001)***	(0.004)***	(0.001)***
Ln GDP per cap, (t-3;t)	-0.001	-0.025	-0.010	-0.016	0.045	0.006
	(0.000)**	(0.009)***	(0.004)**	(0.006)**	(0.017)***	(0.002)***
Ln population, (t-3;t)	-0.000	-0.003	-0.001	-0.002	0.005	0.001
	(0.000)	(0.005)	(0.002)	(0.003)	(0.009)	(0.001)
ICRG, (t-3;t)	0.000	0.000	0.000	0.000	-0.001	-0.000
	(0.000)	(0.001)	(0.000)	(0.001)	(0.002)	(0.000)
Pseudo R^2	0.22	0.22	0.22	0.22	0.22	0.22
ll	-2047.31	-2047.31	-2047.31	-2047.31	-2047.31	-2047.31
Observations	1830	1830	1830	1830	1830	1830

Note: Robust standard errors in parentheses. Significant at (*) 10%, at (**) 5%, at (***) 1%