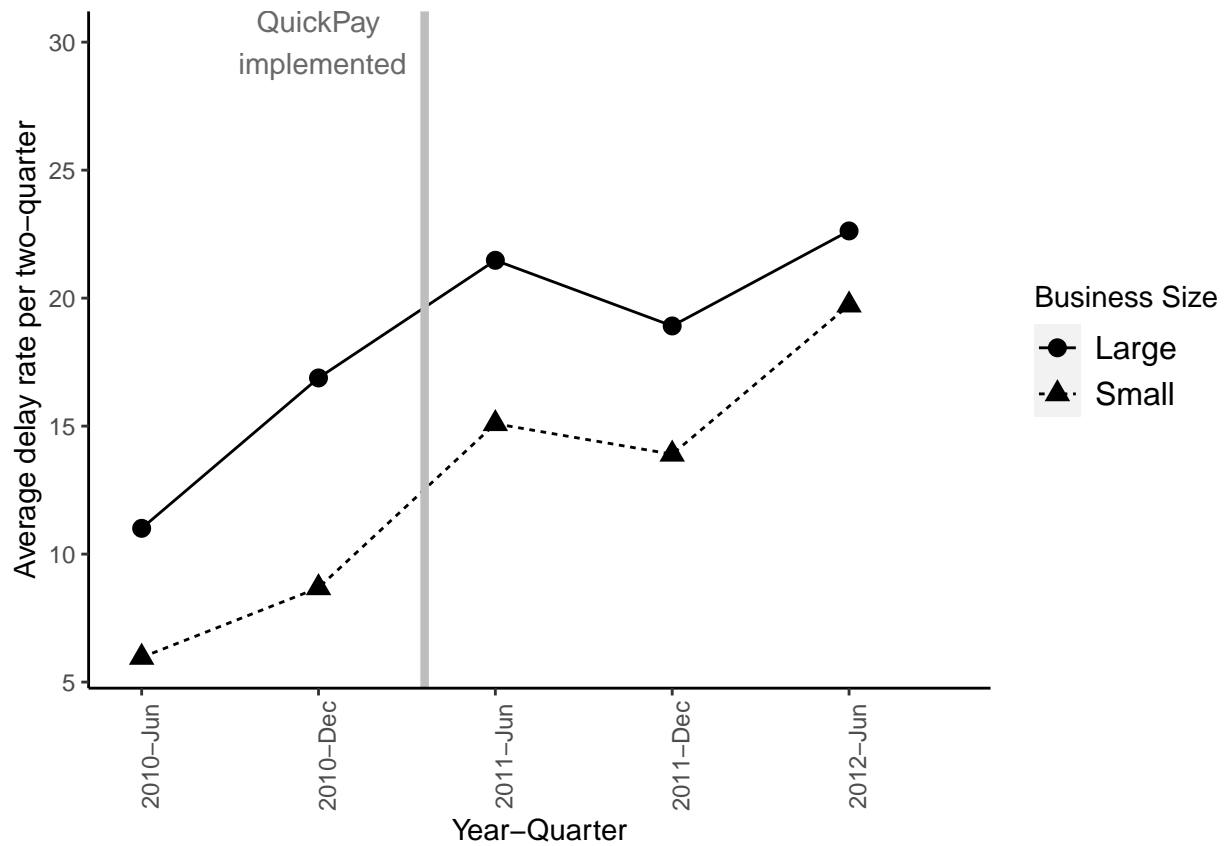# Percentage Delay Rate (Two Quarters): QuickPay (2009-2012)
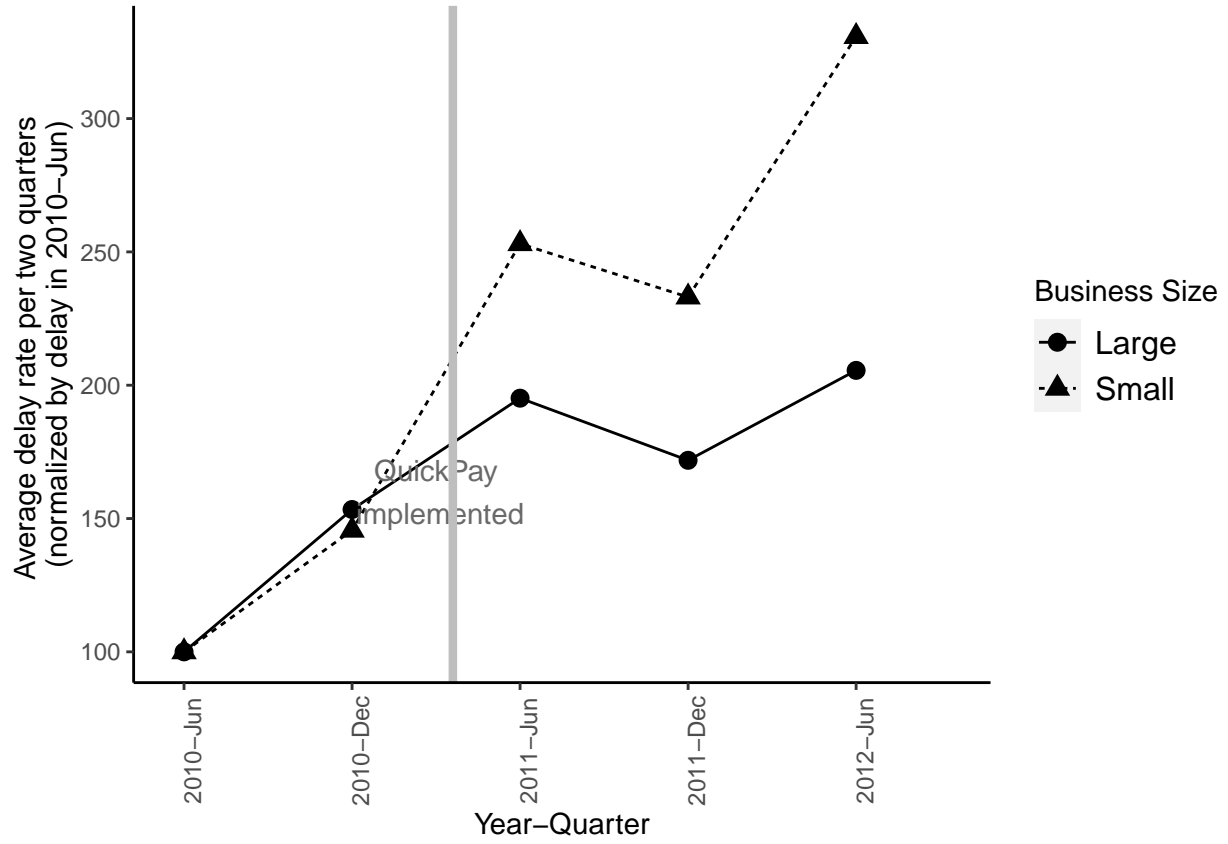
Nov 11, 2021

1 Delays over time

- Sample restricted to projects for which start dates matches the one in API
  - This is done by using first reported "action_date" and "date_signed"
- $PercentDelay_{it} = 100 \times Delay_{it}/Duration_{i,t-1}$
  - $Duration_{i,t-1} = Deadline_{i,t-1} - StartDate_i$

1.1 Normalized delay rate

2 Full Sample Regressions

$$PercentDelay_{it} = \beta_0 + \beta_1 Treat_i + \beta_2 Post_t + \beta_3(Treat_i \times Post_t) + e_{it}$$

$$\begin{aligned} PercentDelay_{it} = \quad & \alpha + \beta_0 Treat_i + \beta_1 Post_t + \beta_2(Treat_i \times Post_t) \\ + \quad & X_i + (Post_t \times X_i) + \mu_t + \theta_{firm} + \lambda_{task} + \epsilon_{it} \end{aligned}$$

2.1 One Quarter

Table 1: Effect of QuickPay on project delay rates

| | $PercentDelay_{it}$ | | | | |
	(1)	(2)	(3)	(4)	(5)
$Treat_i$	−3.34***	−2.72***	−2.70***	−2.07***	−1.81***
	(0.15)	(0.15)	(0.15)	(0.15)	(0.35)
$Post_t$	1.02***	−1.01***			
	(0.15)	(0.31)			
$Treat_i \times Post_t$	1.34***	1.62***	1.62***	1.33***	1.51***
	(0.19)	(0.20)	(0.20)	(0.19)	(0.21)
Constant	8.35***	16.93***			
	(0.12)	(0.24)			
Duration, Budget, Bids	No	Yes	Yes	Yes	Yes
$Post_t \times$ (Duration, Budget, Bids)	No	Yes	Yes	Yes	Yes
Year-Quarter fixed effects	No	No	Yes	Yes	Yes
Task fixed effects	No	No	No	Yes	Yes
Contractor fixed effects	No	No	No	No	Yes
Observations	287,530	263,488	263,488	263,488	263,488
R^2	0.004	0.05	0.06	0.09	0.17
Adjusted R^2	0.004	0.05	0.06	0.09	0.12

Note: *p<0.1; **p<0.05; ***p<0.01
Each observation is a project-quarter.
SEs are robust and clustered at the project level.

2.2 Two-Quarters

Table 2: Effect of QuickPay on project delay rates

| | $PercentDelay_{it}$ | | | | |
	(1)	(2)	(3)	(4)	(5)
$Treat_i$	-7.07^{***}	-6.05^{***}	-6.18^{***}	-4.55^{***}	-3.40^{***}
	(0.37)	(0.39)	(0.39)	(0.39)	(0.94)
$Post_t$	6.03^{***}	2.03^{***}			
	(0.38)	(0.75)			
$Treat_i \times Post_t$	2.36^{***}	3.78^{***}	3.95^{***}	3.18^{***}	3.62^{***}
	(0.47)	(0.50)	(0.50)	(0.50)	(0.56)
Constant	14.88^{***}	26.97^{***}			
	(0.31)	(0.59)			
Duration, Budget, Bids	No	Yes	Yes	Yes	Yes
$Post_t \times$ (Duration, Budget, Bids)	No	Yes	Yes	Yes	Yes
Year-Quarter fixed effects	No	No	Yes	Yes	Yes
Task fixed effects	No	No	No	Yes	Yes
Contractor fixed effects	No	No	No	No	Yes
Observations	156,511	143,340	143,340	143,340	143,340
R^2	0.01	0.05	0.06	0.11	0.22
Adjusted R^2	0.01	0.05	0.06	0.10	0.14

Note: *p<0.1; **p<0.05; ***p<0.01
Each observation is a project-quarter.
SEs are robust and clustered at the project level.

3 Truncated Sample with Positive Delays

$$PercentDelay_{it} = \beta_0 + \beta_1 Treat_i + \beta_2 Post_t + \beta_3(Treat_i \times Post_t) + e_{it}$$

$$\begin{aligned} PercentDelay_{it} = \ & \alpha + \beta_0 Treat_i + \beta_1 Post_t + \beta_2(Treat_i \times Post_t) \\ & + \quad X_i + (Post_t \times X_i) + \mu_t + \theta_{firm} + \lambda_{task} + \epsilon_{it} \end{aligned}$$

3.1 One Quarter

Table 3: Effect of QuickPay on project delay rates

	$PercentDelay_{it}$				
	(1)	(2)	(3)	(4)	(5)
$Treat_i$	−9.22***	−9.34***	−9.38***	−7.62***	−5.47***
	(0.69)	(0.69)	(0.68)	(0.70)	(2.11)
$Post_t$	2.29***	−0.51			
	(0.54)	(0.78)			
$Treat_i \times Post_t$	6.78***	6.62***	6.67***	6.25***	4.84***
	(0.82)	(0.82)	(0.81)	(0.80)	(0.99)
Constant	73.51***	73.36***			
	(0.45)	(0.61)			
Duration, Budget, Bids	No	Yes	Yes	Yes	Yes
$Post_t \times$ (Duration, Budget, Bids)	No	Yes	Yes	Yes	Yes
Year-Quarter fixed effects	No	No	Yes	Yes	Yes
Task fixed effects	No	No	No	Yes	Yes
Contractor fixed effects	No	No	No	No	Yes
Observations	30,138	30,130	30,130	30,130	30,130
R^2	0.01	0.02	0.03	0.14	0.39
Adjusted R^2	0.01	0.02	0.03	0.11	0.21

Note: *p<0.1; **p<0.05; ***p<0.01
Each observation is a project-quarter.
SEs are robust and clustered at the project level.

3.2 Two Quarters

Table 4: Effect of QuickPay on project delay rates

	$PercentDelay_{it}$				
	(1)	(2)	(3)	(4)	(5)
$Treat_i$	−18.52***	−18.84***	−18.88***	−12.47***	−8.50*
	(1.84)	(1.85)	(1.84)	(1.86)	(5.16)
$Post_t$	14.70***	10.87***			
	(1.36)	(1.98)			
$Treat_i \times Post_t$	14.58***	14.33***	14.27***	11.11***	8.67***
	(2.06)	(2.07)	(2.07)	(2.04)	(2.64)
Constant	108.88***	104.90***			
	(1.21)	(1.69)			
Duration, Budget, Bids	No	Yes	Yes	Yes	Yes
$Post_t\times$ (Duration, Budget, Bids)	No	Yes	Yes	Yes	Yes
Year-Quarter fixed effects	No	No	Yes	Yes	Yes
Task fixed effects	No	No	No	Yes	Yes
Contractor fixed effects	No	No	No	No	Yes
Observations	21,702	21,698	21,698	21,698	21,698
R^2	0.02	0.04	0.04	0.18	0.47
Adjusted R^2	0.02	0.03	0.04	0.15	0.26

Note: *p<0.1; **p<0.05; ***p<0.01

Each observation is a project-quarter.

SEs are robust and clustered at the project level.