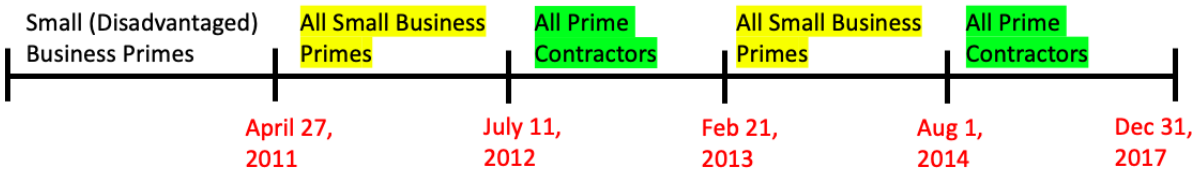
Second Implementation of QuickPay (2013-2016)

Nov 17, 2020

1 Background

Timeline of when different groups started receiving accelerated payments from the Department of Defense.



2 Sample Selection

- Only contracts that were signed on/after March 2013
- Delays measured for quarters March 2013 - March 2016
- Small businesses were receiving faster payments throughout this period
- Payment accelerated to Large Businesses on Aug 1, 2014 (Quarter end Sept 30, 2014)
- 20 four-digit Naics codes most likely to be treated (per Table A.6 in Barrot/Nanda paper)

  > This table presents the top 20 and bottom 20 4-digit NAICS industries based on treatment, measured as the average quarterly amount of eligible government contracts to be performed in a given industry between 2009Q1-2011Q1, normalized by quarterly payroll in 2011Q1. – Barrot and Nanda 2018

- Firm fixed price (type of contract pricing = J)
- Exclude disadvantaged small businesses
- Exclude bundled contracts
- Defense contracts only (agency code = 97)
- Filters applied on DoD data from Fiscal Years 2010-2018 (using award-data-archive)

3 Notation

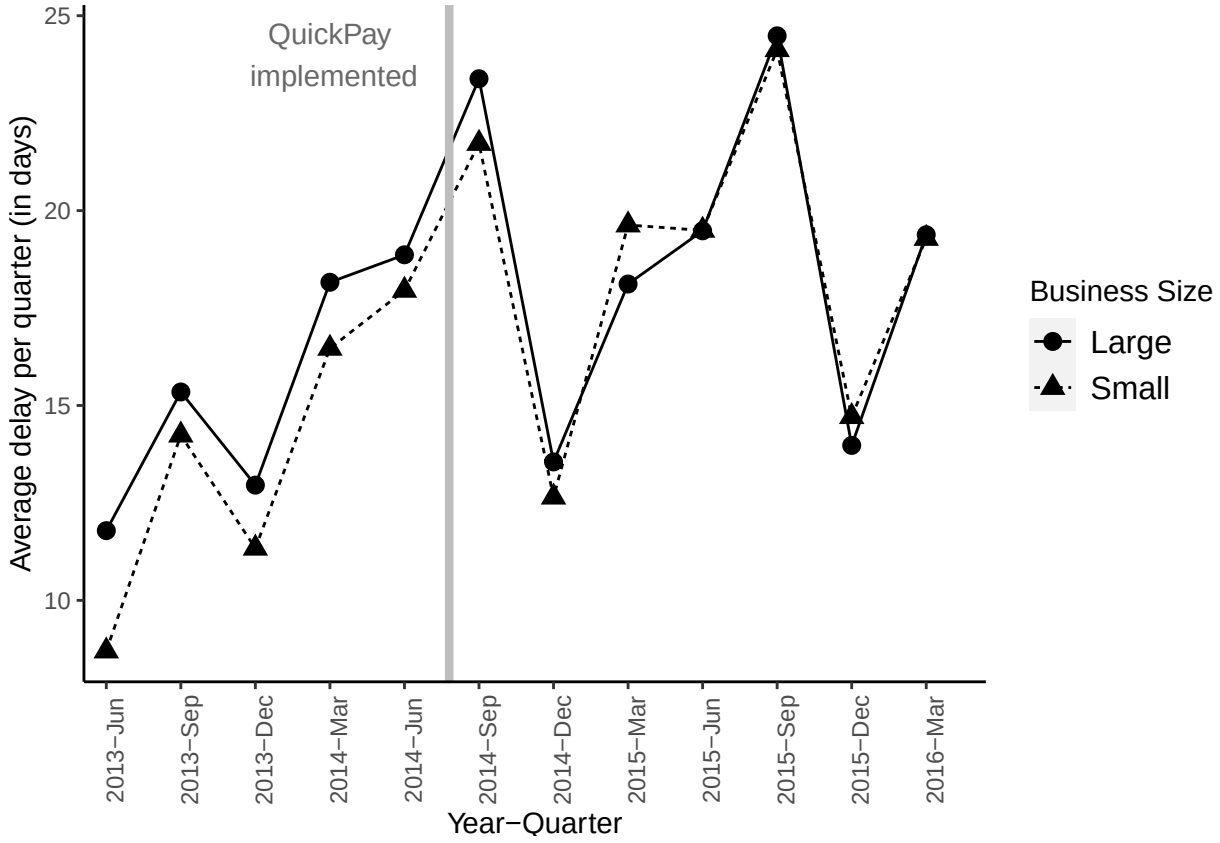
- Project i, Year-Quarter t

- X_i denotes project level controls: initial duration, initial budget, number of offers received
- $\mu_t, \theta_{firm}, \lambda_{task}$: Year-Quarter, Firm, and Product/Service code Fixed effects
- All continuous variables are winsorized at the 5% level

$$Treat_i = \begin{cases} 1, & \text{if project } i \text{ is a large business} \\ 0, & \text{otherwise} \end{cases}$$

$$Pre_t = \begin{cases} 1, & \text{if year-quarter } t < \text{ Aug 01, 2014} \\ 0, & \text{otherwise} \end{cases}$$

4 Delays over Time



5 Parallel Trends Test

6 Baseline Regressions

$$Delay_{it} = \alpha + \beta_0 Treat_i + \beta_1 Pre_t + \beta_2 (Treat_i \times Pre_t) + \epsilon_{it}$$

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

Table 1: Quickpay 2013-2016

	$Delay_{it}$ (in days)		
	(1)	(2)	(3)
$Treat_i$	0.10	−0.32	−0.44
	(0.25)	(1.00)	(1.02)
Pre_t	−3.86***		
	(0.26)		
$Treat_i$xPre_t	1.43***	2.54***	2.16***
	(0.42)	(0.51)	(0.51)
Constant	18.58***		
	(0.15)		
Year-Quarter Fixed Effects	No	Yes	Yes
Firm Fixed Effects	No	Yes	Yes
Task Fixed Effects	No	No	Yes
Duration, Budget, Bids	No	Yes	Yes
Pre_t x (Duration, Budget, Bids)	No	Yes	Yes
Observations	233,433	210,597	210,597
R^2	0.001	0.10	0.11
Adjusted R^2	0.001	0.05	0.05

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.

7 Contract Financing

$$CF_i = \begin{cases} 1, & \text{if project } i \text{ receives contract financing} \\ 0, & \text{otherwise} \end{cases}$$

$$\begin{aligned} Delay_{it} = & \quad \alpha + \beta_0 Treat_i + \beta_1 Pre_t + \beta_2 (Treat_i \times Pre_t) \\ + & \quad \beta_3 CF_i + \beta_4 (CF_i \times Pre_t) + \beta_5 (Treat_i \times Pre_t \times CF_i) \\ + & \quad X_i + (Pre_t \times X_i) + \mu_t + \theta_{firm} + \lambda_{task} + \epsilon_{it} \end{aligned}$$

Table 2: Effect of Contract Financing: Quickpay 2013-2016

	$Delay_{it}$ (in days)		
	(1)	(2)	(3)
$Treat_i$	0.12	−0.28	−0.39
	(0.24)	(1.00)	(1.02)
Pre_t	-3.40^{***}		
	(0.28)		
$Treat_i$xPre_t	1.55^{***}	2.26^{***}	1.78^{***}
	(0.44)	(0.55)	(0.55)
CF_i	6.24^{***}	0.71	0.70
	(0.35)	(0.46)	(0.46)
Pre_t x CF_i	-3.01^{***}	-2.57^{***}	-2.48^{***}
	(0.75)	(0.86)	(0.86)
Pre_t x CF_i x $Treat_i$	−1.20	1.68	2.42^{*}
	(1.10)	(1.25)	(1.26)
Constant	17.70^{***}		
	(0.15)		
Year-Quarter Fixed Effects	No	Yes	Yes
Firm Fixed Effects	No	Yes	Yes
Task Fixed Effects	No	No	Yes
Duration, Budget, Bids	No	Yes	Yes
Pre_t x (Duration, Budget, Bids)	No	Yes	Yes
Observations	233,433	210,597	210,597
R^2	0.003	0.10	0.11
Adjusted R^2	0.003	0.05	0.05

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.

8 Contract Financing: Two Indicators

$$CF_i = \begin{cases} 1, & \text{if project } i \text{ receives contract financing} \\ 0, & \text{otherwise} \end{cases}$$

$$NCF_i = \begin{cases} 1, & \text{if project } i \text{ does not receive contract financing} \\ 0, & \text{otherwise} \end{cases}$$

$$\begin{aligned} Delay_{it} = \quad & \alpha + \beta_0 Treat_i + \beta_1 Pre_t + \beta_2 (Treat_i \times Pre_t \times NCF_i) \\ + \quad & \beta_3 CF_i + \beta_4 (CF_i \times Pre_t) + \beta_5 (Treat_i \times Pre_t \times CF_i) \\ + \quad & X_i + (Pre_t \times X_i) + \mu_t + \theta_{firm} + \lambda_{task} + \epsilon_{it} \end{aligned}$$

Table 3: Effect of Contract Financing: Quickpay 2013-2016

	$Delay_{it}$ (in days)		
	(1)	(2)	(3)
$Treat_i$	0.12	−0.28	−0.39
	(0.24)	(1.00)	(1.02)
Pre_t	−3.40***		
	(0.28)		
$Treat_i$xPre_txNCF_i	1.55***	2.26***	1.78***
	(0.44)	(0.55)	(0.55)
CF_i	6.24***	0.71	0.70
	(0.35)	(0.46)	(0.46)
Pre_t x CF_i	−3.01***	−2.57***	−2.48***
	(0.75)	(0.86)	(0.86)
Pre_t x CF_i x $Treat_i$	0.36	3.94***	4.20***
	(1.05)	(1.17)	(1.18)
Constant	17.70***		
	(0.15)		
Year-Quarter Fixed Effects	No	Yes	Yes
Firm Fixed Effects	No	Yes	Yes
Task Fixed Effects	No	No	Yes
Duration, Budget, Bids	No	Yes	Yes
Pre_t x (Duration, Budget, Bids)	No	Yes	Yes
Observations	233,433	210,597	210,597
R^2	0.003	0.10	0.11
Adjusted R^2	0.003	0.05	0.05

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.

9 Receives Financial Aid

$$FinancialAid = \begin{cases} 1, \text{ if firm receives grants or is a c8A participant} \\ 0, \text{ otherwise} \end{cases}$$

$$\begin{aligned} Delay_{it} = \quad & \alpha + \beta_0 Treat_i + \beta_1 Pre_t + \beta_2 (Treat_i \times Pre_t) + \beta_3 FinancialAid \\ + \quad & \beta_4 (FinancialAid \times Pre_t) + \beta_5 (Treat_i \times Pre_t \times FinancialAid) \\ + \quad & X_i + (Pre_t \times X_i) + \mu_t + \theta_{firm} + \lambda_{task} + \epsilon_{it} \end{aligned}$$

Table 4: Effect of Grants or C8A Participant: Quickpay 2013-2016

	$Delay_{it}$ (in days)		
	(1)	(2)	(3)
$Treat_i$	0.30	−0.57	−0.67
	(0.25)	(1.01)	(1.02)
Pre_t	−4.08***		
	(0.33)		
$Treat_i$xPre_t	1.94***	2.99***	2.83***
	(0.51)	(0.61)	(0.62)
$FinancialAid$	2.20***	5.64***	5.74***
	(0.26)	(0.40)	(0.39)
Pre_t x $FinancialAid$	0.06	−2.64***	−2.78***
	(0.51)	(0.65)	(0.65)
Pre_t x $FinancialAid$ x $Treat_i$	−1.53**	−1.22	−1.88**
	(0.73)	(0.93)	(0.94)
Constant	17.80***		
	(0.17)		
Year-Quarter Fixed Effects	No	Yes	Yes
Firm Fixed Effects	No	Yes	Yes
Task Fixed Effects	No	No	Yes
Duration, Budget, Bids	No	Yes	Yes
Pre_t x (Duration, Budget, Bids)	No	Yes	Yes
Observations	233,433	210,597	210,597
R^2	0.001	0.10	0.11
Adjusted R^2	0.001	0.05	0.05

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.

10 Receives Contracts and Financial Aid

$$CFA = \begin{cases} 1, \text{ if firm receives "contracts and grants"} \\ \text{or grants or is a c8A participant} \\ 0, \text{ otherwise} \end{cases}$$

$$\begin{aligned} Delay_{it} = \quad & \alpha + \beta_0 Treat_i + \beta_1 Pre_t + \beta_2 (Treat_i \times Pre_t) + \beta_3 CFA \\ + \quad & \beta_4 (CFA \times Pre_t) + \beta_5 (Treat_i \times Pre_t \times CFA) \\ + \quad & X_i + (Pre_t \times X_i) + \mu_t + \theta_{firm} + \lambda_{task} + \epsilon_{it} \end{aligned}$$

Table 5: Effect of Contracts, Grants, or C8A Participant: Quickpay 2013-2016

	$Delay_{it}$ (in days)		
	(1)	(2)	(3)
$Treat_i$	−0.24	−0.05	−0.14
	(0.25)	(1.00)	(1.02)
Pre_t	−6.31***		
	(0.54)		
$Treat_i$xPre_t	0.69	3.27***	2.99***
	(0.71)	(0.84)	(0.84)
CFA	−5.51***	−3.27***	−3.64***
	(0.30)	(0.54)	(0.55)
Pre_t x CFA	2.80***	1.00	0.87
	(0.60)	(0.71)	(0.72)
Pre_t x CFA x $Treat_i$	1.28	−1.37	−1.57
	(0.80)	(1.02)	(1.03)
Constant	23.06***		
	(0.30)		
Year-Quarter Fixed Effects	No	Yes	Yes
Firm Fixed Effects	No	Yes	Yes
Task Fixed Effects	No	No	Yes
Duration, Budget, Bids	No	Yes	Yes
Pre_t x (Duration, Budget, Bids)	No	Yes	Yes
Observations	233,433	210,597	210,597
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Note: *p<0.1; **p<0.05; ***p<0.01
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