# The Semblance Of Success In Nudging Consumers To Pay Down Credit Card Debt

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*Not necessarily reflecting positions of the Financial Conduct Authority (FCA), AFM or CMA.*

## Credit card experiment

Ex-ante test of potential regulation by UK Financial Conduct Authority (FCA) to reduce persistent credit card debt holding.

Pre-registered RCT with behaviorally-informed treatment.

Field experiment on 40.7k credit cards from large UK lender.

2nd UK lender stopped after one week of fieldwork.

# FIXING MONTHLY PAYMENTS ABOVE MINIMUM PRODUCES BIG SAVINGS

**Example: £1,000 debt** (18.9% APR, no further spending)

| Payment | Time to Repay Debt (years,months) | Interest Cost |
|---|---|---|
| **Minimum Payment** | 18,6 | £1,265 |
| **£25** | 5,1 | £509 |
| **£50** | 2,0 | £191 |

**MINIMUM PAYMENT CALCULATION**
*Minimum payment = max{£5, total interest + fees + 1% balance}*

Repeated minimum payers often enrolled in
**automatic minimum payments** (type of 'Autopay'/'Direct Debit')

Automatic minimum payments...

 'Good' - prevent forgetting to make payment
 'Bad' - little debt pay down

[Sakaguchi, Stewart, & Gathergood, 2018]

# DESIGN

## Automatic minimum, full + fixed payment options (or none)

### Pay your card bill

| Make a payment | Set up a Direct Debit |

To set up a Direct Debit you'll need to be the account holder and be able to authorise payments from the account.

Not the account holder or need joint signatures? Just download the Direct Debit instruction form fill it out and return it to us by post. If your joint account only needs one signature, just complete the form below.

### How much would you like to pay each month?

The amount will be reduced by any payments received since your last statement

**The minimum**

It will take longer and generally cost more to clear your balance this way. If you make extra payments, your direct debit will only collect the difference needed to reach the minimum

**Statement amount**

You will clear your balance this way. If you make extra payments your direct debit will only reduce the difference to your last statement

**This much**

£ _____

We'll collect your fixed amount or the minimum payment due, whichever is the greater. If you make extra payments, your direct debit will still collect the fixed amount or the remaining balance if this is lower

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# WHAT IS 'AUTOMATIC FIXED PAYMENT' OPTION?

*Automatic fixed payment taken = max{fixed £ amount, minimum payment}*
E.g. £50 automatic fixed payment



**Automatic Fixed Payment Taken (£)**
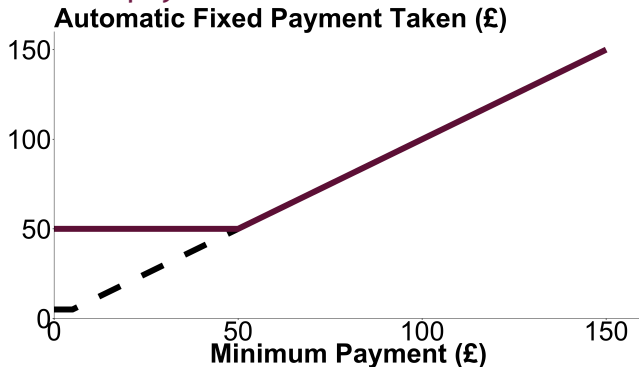
£5 automatic fixed payment ≡ automatic minimum payment
Why? *Minimum payment = max{£5, total interest + fees + 1% balance}*

## Automatic full + fixed payment options (or none)

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### How much would you like to pay each month?
The amount will be reduced by any payments received since your last statement

**Statement amount**
You will clear your balance this way. If you make extra payments your direct debit will only reduce the difference to your last statement

**This much**

£ [        ]

We'll collect your fixed amount or the minimum payment due, whichever is the greater. If you make extra payments, your direct debit will still collect the fixed amount or the remaining balance if this is lower

6

17

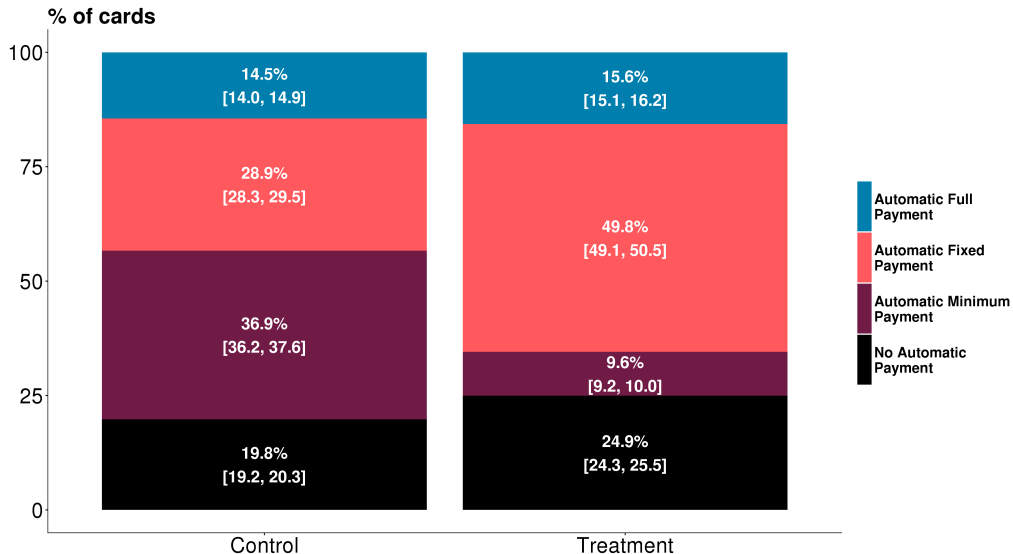Increase automatic fixed payment enrolment
⇓
Increase automatic payments
⇓
Increase payments above minimum
⇓
Decrease debt + interest costs

# RESULTS

**+21PP (+72%) AUTOMATIC FIXED PAYMENT ENROLMENT (STATEMENT 2)**

% of cards

**Control**
- No Automatic Payment: 19.8% [19.2, 20.3]
- Automatic Minimum Payment: 36.9% [36.2, 37.6]
- Automatic Fixed Payment: 28.9% [28.3, 29.5]
- Automatic Full Payment: 14.5% [14.0, 14.9]

**Treatment**
- No Automatic Payment: 24.9% [24.3, 25.5]
- Automatic Minimum Payment: 9.6% [9.2, 10.0]
- Automatic Fixed Payment: 49.8% [49.1, 50.5]
- Automatic Full Payment: 15.6% [15.1, 16.2]

Legend:
- Automatic Full Payment
- Automatic Fixed Payment
- Automatic Minimum Payment
- No Automatic Payment

**-7PP** (-24%) PAYING EXACTLY MINIMUM (AFTER 7 STATEMENTS)

Treatment Effect on
Statement Balance Net of Payments,
£

Panel Balanced

Panel Unbalanced

Statement Cycle
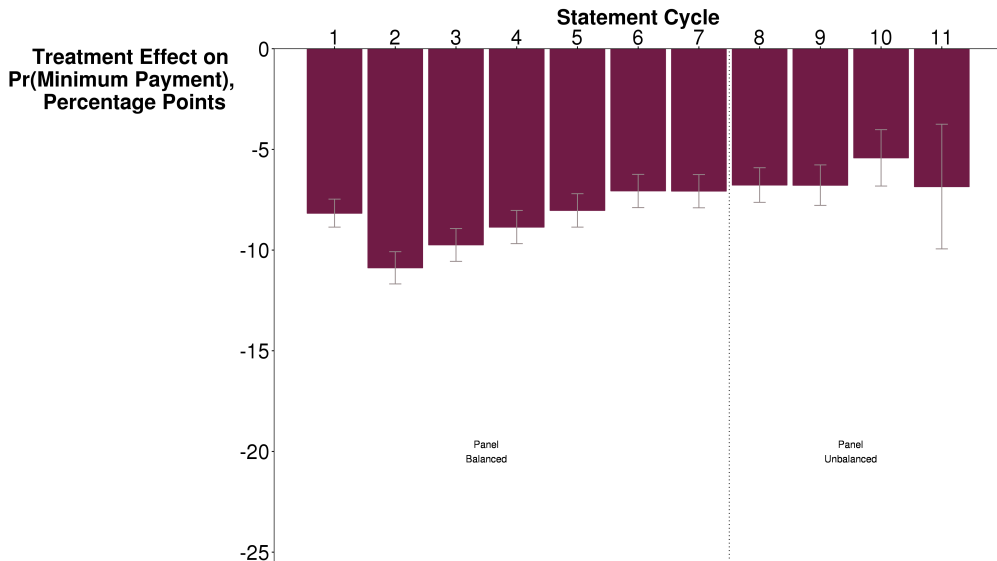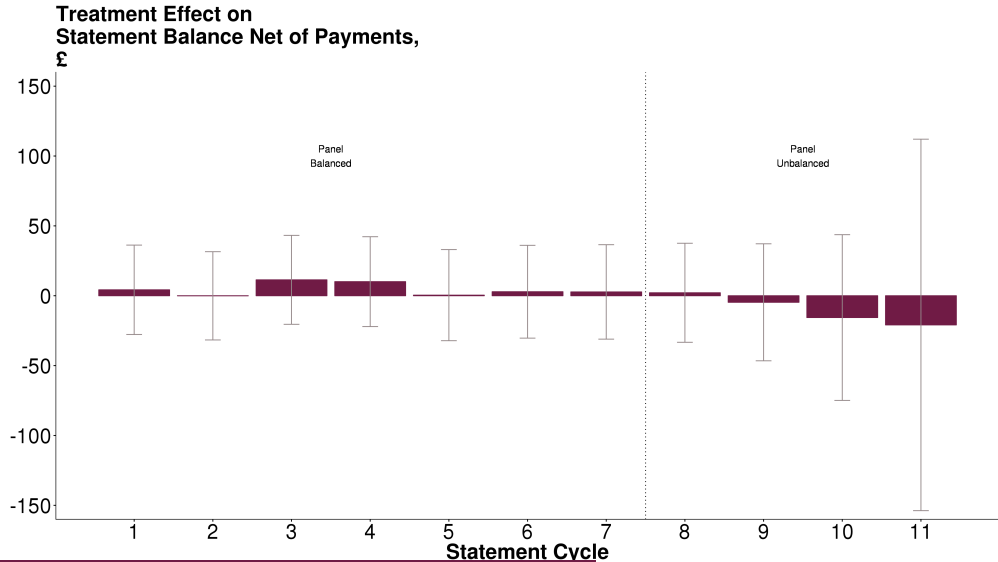
# PRECISE **ZERO AVERAGE TREATMENT EFFECTS** ON OTHER PRIMARY OUTCOMES (AFTER 7 STATEMENTS)

| Outcome | Estimate (S.E.) |
|---|---|
| Any minimum payment | -0.0707*** |
| | (0.0042) |
| Any full payment | 0.0044 |
| | (0.0037) |
| Any payment less than minimum payment | 0.0038* |
| | (0.0019) |
| Statement balance net of payments | -0.0055 |
| (% statement balance) | (0.0035) |
| Costs | -0.0003 |
| (% statement balance) | (0.0006) |
| Transactions | 0.0027 |
| (% statement balance) | (0.0031) |
| CRA share of credit cards only paying minimum | -0.0264*** |
| | (0.0027) |
| CRA share of credit cards making full payment | 0.0013 |
| | (0.0033) |
| CRA share of credit cards missing payment | -0.0001 |
| | (0.0013) |
| CRA total credit card statement balances | -0.0056 |
| net of payments (% statement balance) | (0.0031) |

# WHY NO DEBT REDUCTION?

**1. Automatic fixed payments set 'too low'**

**+17 pp** automatic fixed payment enrolment

but only...

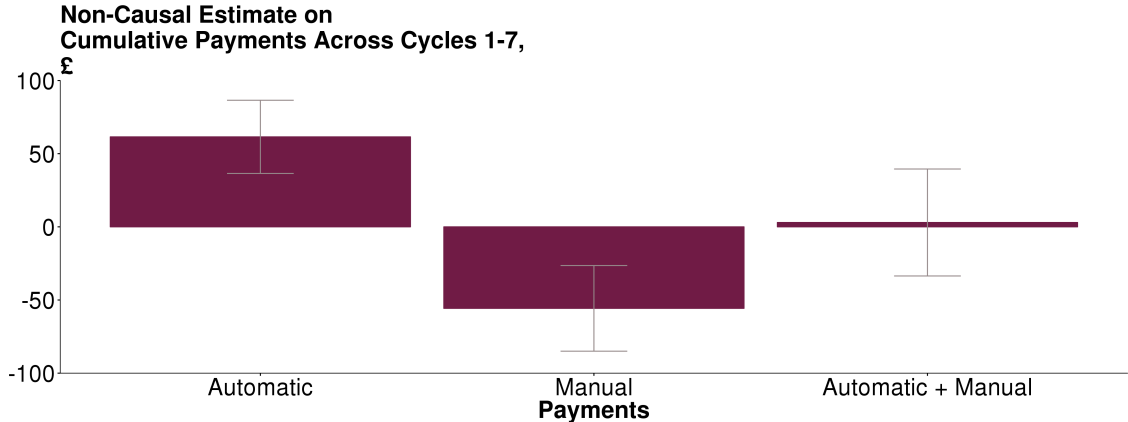**+8.7 pp** where fixed payment not binding at minimum

(after 7 statements)

1. Automatic fixed payments set 'too low'

**2. Manual payments decrease**

# DECOMPOSING FOR SUBSET **WITH** AUTOMATIC PAYMENTS (ENDOGENOUS, NON-CAUSAL ESTIMATE)

Automatic payments increase, manual payments decrease, zero net effect



**Non-Causal Estimate on Cumulative Payments Across Cycles 1-7, £**

**Of those with automatic payments set up...**
**..Manual payments are...**

 **INFREQUENT**: 8.5% make a manual payment

**Of those with automatic payments set up…**
**..Manual payments are…**

**INFREQUENT**: 8.5% make a manual payment

**LARGE:** 40% of total (automatic+manual) payment value

|  | Automatic Payment | Manual Payment |
|---|---|---|
| Mean Payment Value | £110 | £440 |
| Median Payment Value | £50 | £120 |

Note: Mean, median conditional on positive payment and rounded to nearest £10.

1. Automatic fixed payments set 'too low'
2. Manual payments decrease
**3. Enrolment in any automatic payment fell**

**-4.3 pp any** automatic payment enrolment

**+0.3 pp** missing (forgetting) a payment

**I. REGULATION IS HARD**
 Sometimes evidence-based policy to not make policy.
 Test big interventions. But which? How much evidence needed?

**II. CONSIDER OFFSETTING EFFECTS OF NUDGES**
 Offsetting effects can reduce effectiveness of nudges.
 Measure longer-term outcomes not just initial choices.

**III. MORE RESEARCH INTO CREDIT CARD BORROWING**
 Borrowers less inert than first appeared. Rational inattention?
 What motivates + constrains timing + amounts of manual payments?

# Extra Slides

# SUMMARY STATISTICS

| Outcome | Mean |
|---|---|
| Age (years) | 36.46 |
| Female (% cards) | 46.06 |
| Credit Limit (£) | 4312.49 |
| Credit Score (0-100) | 65.26 |
| Purchases Rate (%) | 22.85 |
| Balance Transfer (% cards) | 29.00 |
| Any Automatic Payment Set-up (% cards) | 78.33 |
| Any Automatic Full Payment Set-up (% cards) | 13.09 |
| Any Automatic Fixed Payment Set-up (% cards) | 29.77 |
| Any Automatic Minimum Payment Set-up (% cards) | 35.47 |
| Credit Card Statement Balance (£) | 2164.49 |
| Credit Card Statement Balance Net of Payments (£) | 1962.52 |
| Full Payment (% cards) | 23.97 |
| Between Full and Min Payment (% cards) | 42.22 |
| Minimum Payment (% cards) | 30.12 |
| Missed Payment (% cards) | 3.69 |
| Number of Full Payments Across Cycles 1-7 | 1.90 |
| Number of Minimum Payments Across Cycles 1-7 | 2.04 |
| Full Payments For 6+ Cycles (% cards) | 18.05 |
| Minimum Payments For 6+ Cycles (% cards) | 19.18 |
| Credit Card Statement Balance Net of Payments (% Statement Balance) | 69.36 |
| Payments Across Cycles 1-7 (£) | 1277.27 |
| Purchases Across Cycles 1-7 (£) | 350.92 |
| Costs Across Cycles 1-7 (£) | 76.02 |
| Interest Across Cycles 1-7 (£) | 19.77 |
| Fees Across Cycles 1-7 (£) | 56.26 |
| Total Credit Card Statement Balances (£) | 2364.92 |
| Total Credit Card Statement Balances Net of Payments (£) | 2001.35 |

# PRIMARY OUTCOMES POOLED OVER STATEMENTS

| Outcome | Estimate (S.E.) |
| --- | --- |
| Any minimum payment | -0.0809*** |
| | (0.0033) |
| Any full payment | 0.0044 |
| | (0.0028) |
| Any payment less than minimum payment | 0.004*** |
| | (0.0011) |
| Statement balance net of payments | -0.006* |
| (% statement balance) | (0.0027) |
| Costs | -0.0001 |
| (% statement balance) | (0.0002) |
| Transactions | 0.0015 |
| (% statement balance) | (0.002) |
| CRA share of credit cards only paying minimum | -0.0267*** |
| | (0.0017) |
| CRA share of credit cards making full payment | 0.0005 |
| | (0.0023) |
| CRA share of credit cards missing payment | 0.0004 |
| | (0.0007) |
| CRA total credit card statement balances | -0.0039 |
| net of payments (% statement balance) | (0.0022) |

| Outcome | Enrolled | Not Enrolled |
|---|---|---|
| Any minimum payment | -0.088*** | 0.0178** |
| | (0.005) | (0.0066) |
| Any full payment | 0.0078* | -0.0116 |
| | (0.0039) | (0.0088) |
| Any payment less than minimum payment | -0.0003 | -0.0088 |
| | (0.0007) | (0.007) |
| Statement balance net of payments | -0.0096** | 0.012 |
| (% statement balance) | (0.0037) | (0.0083) |
| Costs | -0.0007 | -0.0004 |
| (% statement balance) | (0.0006) | (0.0018) |
| Transactions | 0.0071* | -0.0049 |
| (% statement balance) | (0.0035) | (0.0067) |
| CRA share of credit cards only paying minimum | -0.0355*** | 0.0151*** |
| | (0.0032) | (0.0052) |
| CRA share of credit cards making full payment | 0.0048 | -0.004 |
| | (0.0036) | (0.0076) |
| CRA share of credit cards missing payment | -0.0009 | -0.0094* |
| | (0.0006) | (0.0047) |
| CRA total credit card statement balances | -0.0092** | 0.0046 |
| net of payments (% statement balance) | (0.0034) | (0.0075) |

# Secondary outcomes

| Outcome | All |
|---|---|
| Any automatic payment set-up | -0.0427*** |
| | (0.0041) |
| Any automatic minimum payment set-up | -0.2173*** |
| | (0.0041) |
| Any automatic fixed payment set-up | 0.1678*** |
| | (0.0045) |
| Any automatic fixed payment set-up exceeding contractual minimum payment | 0.0865*** |
| | (0.0043) |
| Any automatic full payment set-up | 0.0069* |
| | (0.0028) |
| Cumulative payments across statements | 7.0689 |
| | (16.219) |
| Cumulative automatic payments across statements | 27.7215** |
| | (10.364) |
| Cumulative manual payments across statements | -18.888 |
| | (13.9749) |
| Total payments (% statement balance) | 0.0064 |
| | (0.0034) |
| Automatic payments (% statement balance) | 0.0075** |
| | (0.0027) |
| Manual payments (% statement balance) | -0.0005 |
| | (0.003) |
| Payments via both automatic AND manual | 0.0131*** |
| | (0.0026) |
| Automatic payments as a % of total payments | -0.0061 |
| | (0.0051) |