# What Do Market-Access Subsidies Do? Experimental Evidence from Tunisia

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# Results

# Export Outcomes

Table 3. **Exports, Two-Part ANCOVA and PPML**

| | Dependent variable: | |
|---|---|---|
| | exporter (0/1) | exports |
| | (1) | (2) |
| **A. ANCOVA (exports in logs)** | | |
| Treated | 0.05 | 0.39** |
| | (0.04) | (0.19) |
| Dep. var., refyear | 0.61*** | 0.63*** |
| | (0.05) | (0.05) |
| R2 | 0.46 | 0.65 |
| N | 377 | 244 |
| Strata dummies | Y | Y |
| Round dummies | Y | Y |
| Mean of dep. var. (level) | 0.66 | 3.92 |
| **B. PPML (exports in levels)** | | |
| Treated × Post | 0.09 | 0.24* |
| | (0.06) | (0.15) |
| Proportional effect: $\exp(\hat{\beta}) - 1$ | 0.10 | 0.27 |
| | (0.07) | (0.19) |
| Pseudo R2 | 0.18 | 0.82 |
| N | 754 | 754 |
| Clusters | 377 | 377 |
| Firm FE | Y | Y |
| Year FE | Y | Y |
| Mean of dep. var. (level) | 0.66 | 2.47 |

| | Dependent variable: |
|---|---|
| | exporter (0/1) |
| | (1) |
| **A. ANCOVA (exports in logs)** | |
| Treated | 0.05 |
| | (0.04) |

Exporter(0/1) { 1: Firm exports
0: Firm does NOT export

Includes all firm

Treated firms are 5 percentage points more likely to be exporters

But it is NOT statistically significant

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| **A. ANCOVA (exports in logs)** | | |
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| | (0.04) | (0.19) |

Log(exports) { But Log(0) is not defined
defined for export>0

firms with + exports in the reference year and 2021 (continuous exporters)

- Treated firms increased their export value by 39 log points (48%) more than control firms, among continuous exporters.

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- PPML handels zeros
- includes all firms (even those with zero exports)

1. Continuous exporters
2. New exporters
3. Dropouts
4. Never exporters

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Percent effect: exp(0.24) - 1 = 27%

The subsidy increased firms' exports by approximately 27 percent.

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| | (0.06) | (0.15) |

≈48%

≈27%



1. Continuous exporters: ↑ ↑ (≈48 percent in Panel A)
2. New exporters: ↑ ? (very few enter, based on Column 1 Panel B showing no significant entry)
3. Dropouts: ↓
4. Never exporters: (zero effect)

# Economic magnitude of export effects:

**720,000: average baseline export value of treated firms.**

Estimated export increase

- PPML (27 percent):
  $0.27 \times 720{,}000 \approx$ USD 194,000
- ANCOVA (48 percent):
  $0.48 \times 720{,}000 \approx$ USD 346,00

# How Much Money Firms Actually Received

- Max possible reimbursement: USD 50,000
- Average eligible matching grant: USD 30,000
- Realization rate: 22 percent
- Share of Treated Firms That Used the Program: 187 / 281
- 30,000×0.22× (187 / 281) ≈  4,400

→ Average payout per treated firm ≈ USD 4,400

# Program Return

- 58-68 USD increase in exports on average for every dollar spent

# Does the program help diversify their export destinations and products?

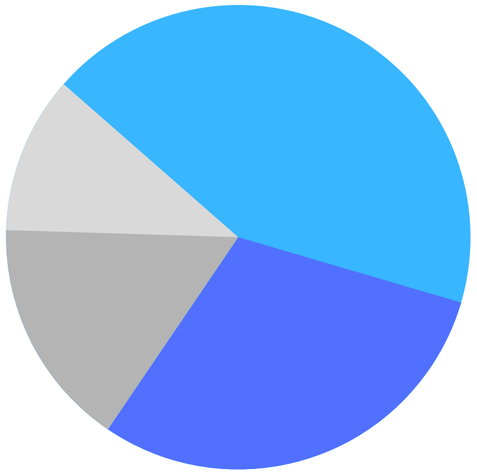


Table 4. **Numbers of Destinations and Products**

| | Dependent variable: | | | |
|---|---|---|---|---|
| | exporter (0/1) | exports | # destinations | # products |
| | (1) | (2) | (3) | (4) |
| **A. ANCOVA (exports in logs)** | | | | |
| Treated | 0.04 | 0.42* | -0.21 | -0.53 |
| | (0.05) | (0.23) | (0.34) | (1.16) |
| Dep. var., refyear | 0.54*** | 0.67*** | 0.81*** | 0.78*** |
| | (0.06) | (0.06) | (0.04) | (0.09) |
| R2 | 0.44 | 0.63 | 0.75 | 0.42 |
| N | 210 | 168 | 210 | 210 |
| Strata dummies | Y | Y | Y | Y |
| Round dummies | Y | Y | Y | Y |
| Mean of dep. var. (level) | 0.74 | 4.42 | 3.54 | 5.96 |
| **B. PPML (exports in levels)** | | | | |
| Treated × Post | 0.05 | 0.29* | 0.00 | -0.09 |
| | (0.07) | (0.17) | (0.10) | (0.21) |
| Proportional effect: $\exp(\hat{\beta}) - 1$ | 0.05 | 0.33 | 0.00 | -0.09 |
| | (0.08) | (0.22) | (0.10) | (0.19) |
| Pseudo R2 | 0.17 | 0.81 | 0.61 | 0.69 |
| N | 420 | 420 | 420 | 420 |
| Clusters | 210 | 210 | 210 | 210 |
| Firm FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |
| Mean of dep. var. (level) | 0.74 | 3.64 | 3.54 | 5.96 |

| | # destinations (3) | # products (4) |
|---|---|---|
| **A. ANCOVA (exports in logs)** | | |
| Treated | -0.21 | -0.53 |
| | (0.34) | (1.16) |
| **B. PPML (exports in levels)** | | |
| Treated × Post | 0.00 | -0.09 |
| | (0.10) | (0.21) |

- all coefficients are small and not significant. (Some even negative)

→ The program did not increase the number of destinations or products.

Table 5. **Numbers of *New* Destinations and Products**

| | Dependent variable: | | | | | |
|---|---|---|---|---|---|---|
| | any new dest. (0/1) | # new dests. | any new targeted dest. (0/1) | # new targeted dests. | any new product (0/1) | # new products |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **A. OLS** | | | | | | |
| Treated | 0.03 | -0.14 | 0.07 | 0.10 | 0.08 | -0.42 |
| | (0.07) | (0.33) | (0.06) | (0.08) | (0.07) | (1.17) |
| **B. PPML** | | | | | | |
| Treated × Post | 0.04 | -0.08 | 0.33 | 0.42 | 0.13 | -0.10 |
| | (0.11) | (0.17) | (0.27) | (0.29) | (0.10) | (0.27) |

Only one marginally significant effect

No strong evidence that the subsidy helped firms diversify into new markets or new products.

# Mechanisms

**what exactly were firms doing differently?**

# Domestic & Total Sales

If capacity limit:

- Exports: ↑
- Domestic sales: ↓ ?

Table 6. **Domestic & Total Sales**

| | Dependent variable: | | |
|---|---|---|---|
| | sells domestically | dom. sales | tot. sales |
| | (1) | (2) | (3) |
| **A. ANCOVA (dom. and total sales in logs)** | | | |
| Treated | 0.03 | 0.08 | 0.08 |
| | (0.02) | (0.10) | (0.07) |
| Dep. var., refyear | 0.82*** | 0.73*** | 1.00*** |
| | (0.02) | (0.04) | (0.04) |
| R2 | 0.85 | 0.86 | 0.90 |
| N | 377 | 288 | 377 |
| Strata dummies | Y | Y | Y |
| Round dummies | Y | Y | Y |
| Mean of dep. var. (level) | 0.79 | 6.70 | 7.66 |
| **B. PPML (dom. and total sales in levels)** | | | |
| Treated × Post | 0.03 | 0.05 | 0.11* |
| | (0.02) | (0.06) | (0.06) |
| Proportional effect: $\exp(\hat{\beta}) - 1$ | 0.03 | 0.05 | 0.12* |
| | (0.02) | (0.07) | (0.07) |
| Pseudo R2 | 0.19 | 0.88 | 0.85 |
| N | 754 | 754 | 754 |
| Clusters | 377 | 377 | 377 |
| Firm FE | Y | Y | Y |
| Year FE | Y | Y | Y |
| Mean of dep. var. (level) | 0.79 | 5.19 | 7.66 |

Table 6. **Domestic & Total Sales**

| | Dependent variable: | | |
|---|---|---|---|
| | sells domestically | dom. sales | tot. sales |
| | (1) | (2) | (3) |
| **A. ANCOVA (dom. and total sales in logs)** | | | |
| Treated | 0.03 | 0.08 | 0.08 |
| | (0.02) | (0.10) | (0.07) |
| **B. PPML (dom. and total sales in levels)** | | | |
| Treated × Post | 0.03 | 0.05 | 0.11* |
| | (0.02) | (0.06) | (0.06) |

- Domestic sales coefficients are positive and insignificant in all models.
- Total sales show marginally significant growth in PPML

→

- no evidence of crowding-out
- expand exports without reducing domestic activity, and possibly increases total firm output.

# Employment

Table 7. **Employment**

| | Dependent variable: | | | | |
|---|---|---|---|---|---|
| | exporter (0/1) | ln(exports) | ln(emp.) | ln(avg qtr earnings) | ln(wage bill) |
| | (1) | (2) | (3) | (4) | (5) |
| Treated | 0.04 | 0.40* | -0.01 | 0.01 | 0.00 |
| | (0.04) | (0.20) | (0.06) | (0.03) | (0.07) |

- no impact on employment and wages
- firms exported more but did not hire more workers or pay higher wages.

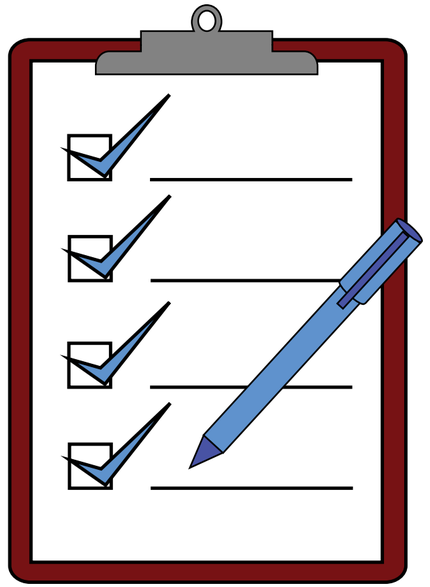
# Why No Effects on Employment or Wages?

- **Binding wage agreements:** Sectoral bargaining in Tunisia limits firms' ability to raise wages.
- **Labor market rigidity:** High hiring and firing costs push firms toward informal or short-term labor that may not appear in official RNE data.
- **Reduced slack instead of new hiring:** Firms may have expanded output using existing capacity, consistent with evidence that many developing-country firms can scale up without increasing inputs.

# What treated firms actually did after receiving the subsidy?

Table 8. **Survey Outcomes**

| Dependent variable: | | | | | | |
|---|---|---|---|---|---|---|
| new contract with foreign dist./ agent/partner | new foreign affiliate/ representative | participated in int'l fair | spent on certifications | spent on new tech. | spent on travel | spent on consulting |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |



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| | Dependent variable: | | | | | | |
|---|---|---|---|---|---|---|---|
| | new contract with foreign dist./ agent/partner | new foreign affiliate/ representative | participated in int'l fair | spent on certifications | spent on new tech. | spent on travel | spent on consulting |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Treated | 0.12* | 0.09** | 0.07 | 0.03 | 0.01 | 0.07 | 0.07 |
| | (0.06) | (0.04) | (0.06) | (0.06) | (0.07) | (0.07) | (0.07) |

The main effect is that treated firms deepened their presence in foreign markets by:

- forming new contracts
- and setting up new representatives/subsidiaries.

- Treated firms were 12 percentage points more likely to sign a new contract.
- They were 9 percentage points more likely to set up a new representative or affiliate abroad


PROFIT

Table 10. **Profits**

| | Dependent variable: | |
|---|---|---|
| | profit (level) | profit/sales |
| | (1) | (2) |
| Treated | 0.19 | 0.03 |
| | (0.12) | (0.03) |

Profits: positive but not significant — no clear impact.

**The subsidies helped firms focus their marketing and search efforts in destinations they were already exporting.**

# Heterogeneous Impacts

**Does the program affects all firms the same way,**
**or do some types of firms benefit more than others?**

Table 11. **Heterogeneity by Trade Regime, Size, Quality Certification**

| | exporter (0/1) (1) | ln(exports) (2) | exporter (0/1) (3) | ln(exports) (4) |
|---|---|---|---|---|
| **A. By Trade Regime** | | | | |
| | Non-totally exporting | | Totally exporting | |
| Treated | 0.08* | 0.71** | | 0.00 |
| | (0.05) | (0.28) | | (0.20) |

- extensive margin (entry into exporting)
- intensive margin (how much exporters export)

- no increase in export volumes for totally exporting firms
- these firms have low market-access costs, so the program adds little benefit

**The program's export gains come entirely from non–totally exporting firms.**

# Theory predicts: larger, more productive firms should respond less to the subsidy.

Table 11. **Heterogeneity by Trade Regime, Size, Quality Certification**

| | exporter (0/1) (1) | ln(exports) (2) | exporter (0/1) (3) | ln(exports) (4) |
|---|---|---|---|---|
| **B. By Initial Employment** | | | | |
| | <50 employees | | >50 employees | |
| Treated | 0.05 | 0.48* | 0.04 | 0.34 |
| | (0.05) | (0.26) | (0.06) | (0.27) |

- but the difference is not statistically significant.

Table 11. **Heterogeneity by Trade Regime, Size, Quality Certification**

| | exporter (0/1) (1) | ln(exports) (2) | exporter (0/1) (3) | ln(exports) (4) |
|---|---|---|---|---|
| **C. By Baseline Quality Certification** | | | | |
| | No certification | | Has certification | |
| Treated | 0.07 | -0.12 | -0.02 | 0.60** |
| | (0.05) | (0.29) | (0.06) | (0.24) |

- No certificate: little evidence of impact (even negative).
- Has certificate: strong positive export effect.

Table 12. **Heterogeneity by Financial Condition, Business Plan Characteristics**

| | exporter (0/1) | ln(exports) | exporter (0/1) | ln(exports) |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **A. By Financial Condition** | | | | |
| | Low assets/liabilities | | High assets/liabilities | |
| Treated | 0.05 | 0.66** | 0.07 | 0.33 |
| | (0.06) | (0.26) | (0.06) | (0.31) |

- Larger effect on financially weaker firms

Table 12. **Heterogeneity by Financial Condition, Business Plan Characteristics**

| | exporter (0/1) | ln(exports) | exporter (0/1) | ln(exports) |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **C. By Plan to Spend on Product Tailoring/Innovation** | | | | |
| | No tailoring/innovation plan | | Has tailoring/innovation plan | |
| Treated | 0.07 | 0.22 | 0.02 | 0.54 |
| | (0.05) | (0.22) | (0.07) | (0.40) |

- Firms planning product tailoring/innovation show larger effect(though not significant)

# Conclusion

- Contrary to standard trade theory, the subsidy increased the intensive margin (export volumes), not the extensive margin (new destinations/products).

- Results match the paper's model: fixed costs help firms reach more customers within existing markets, rather than expand product or destination scope.

- Generalizability is uncertain; differences from past studies may be due to:
  - RCT design removing unobserved biases
  - Covid-19 limiting firms' ability to enter new markets
  - Program design requiring pre-approved business plans