

Conferência

Apresentação dos artigos vencedores do prémio

Competitividade e Internacionalização

16 de novembro de 2018



Universidade do Minho
Escola de Economia e Gestão



Gabinete de Estratégia e Estudos
Ministério da Economia



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Presidente da Escola de Economia e Gestão – Universidade do Minho

Conhecer a Economia Portuguesa: O contributo da investigação da EEG-UMinho sobre Competitividade e Internacionalização

Francisco Veiga



Universidade do Minho
Escola de Economia e Gestão



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Ministério da Economia





Conferência

Competitividade e Internacionalização

Conhecer a Economia Portuguesa

**O Contributo da Investigação da EEG-UMinho
Sobre Competitividade e Internacionalização**

Francisco José Veiga
Presidente da EEG-UMinho



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Competitividade e Internacionalização

Conhecer a Economia Portuguesa

**Contributos recentes da
EEG-UMinho**



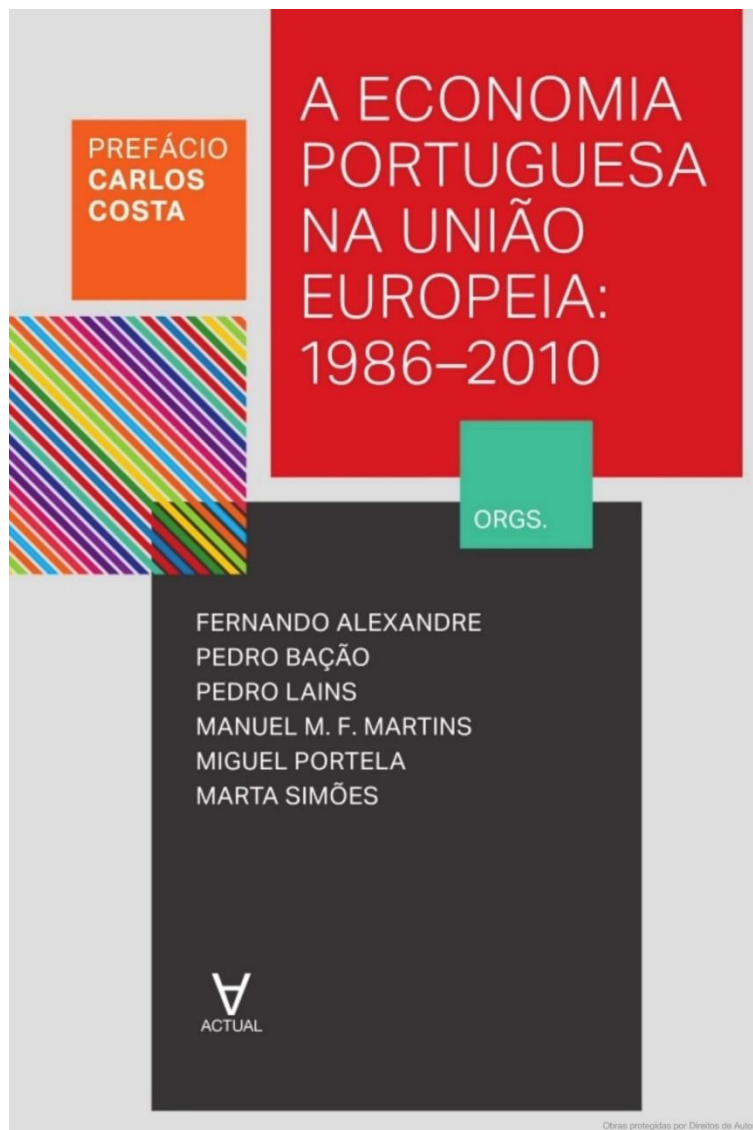
Conhecer a Economia Portuguesa

Desde 2010, mais de **80 artigos de docentes da EEG**, que analisam diferentes aspetos da economia portuguesa, foram publicados em revistas científicas nacionais e, sobretudo, internacionais, incluindo:

- Econometrica
- Journal of Human Resources
- Journal of International Economics
- European Economic Review
- Energy Economics
- Regional Studies
- Industrial and Corporate Change
- Journal of Comparative Economics
- Oxford Economic Papers
- European Journal of Political Economy
- Public Choice
- Open Economies Review
- European Journal of Finance
- Tourism Economics
- Portuguese Economic Journal



Conhecer a Economia Portuguesa



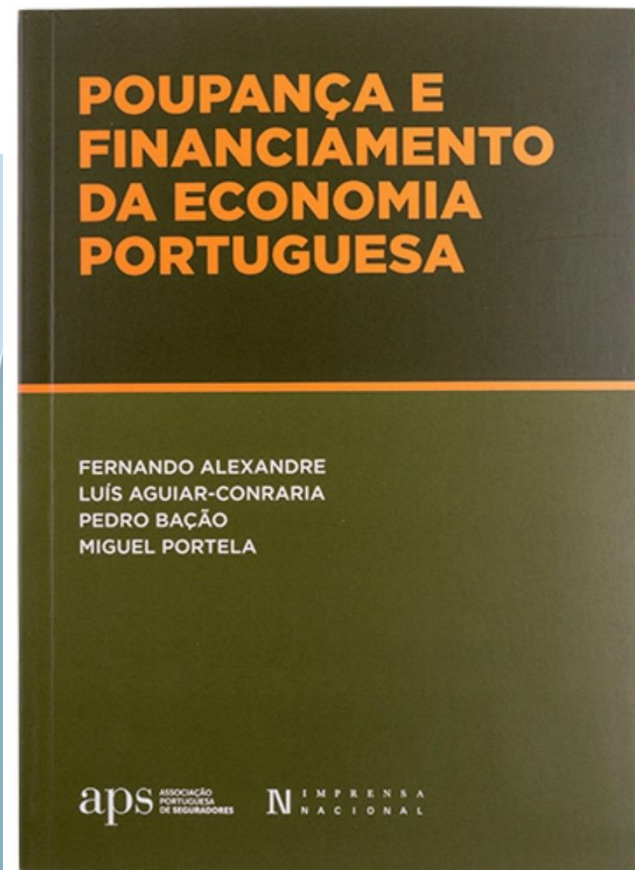
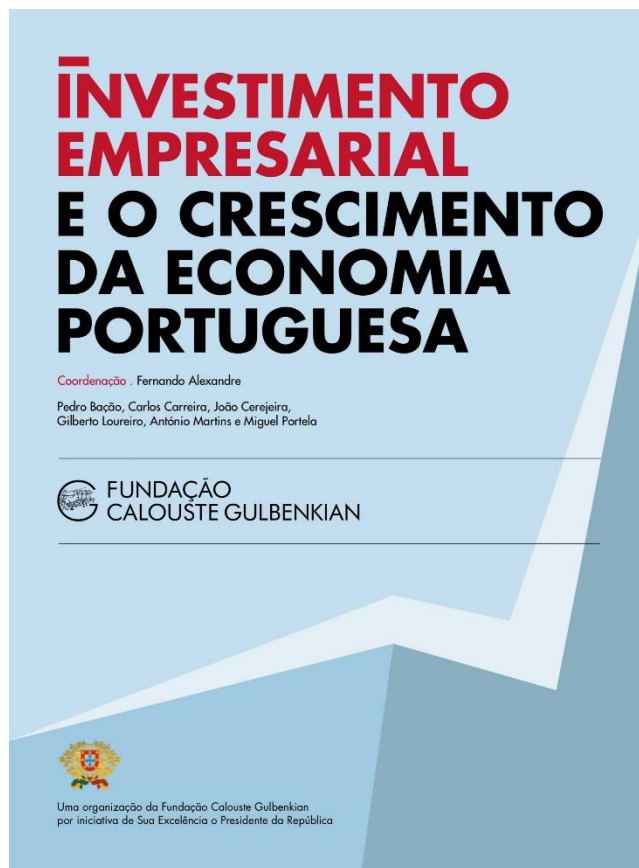
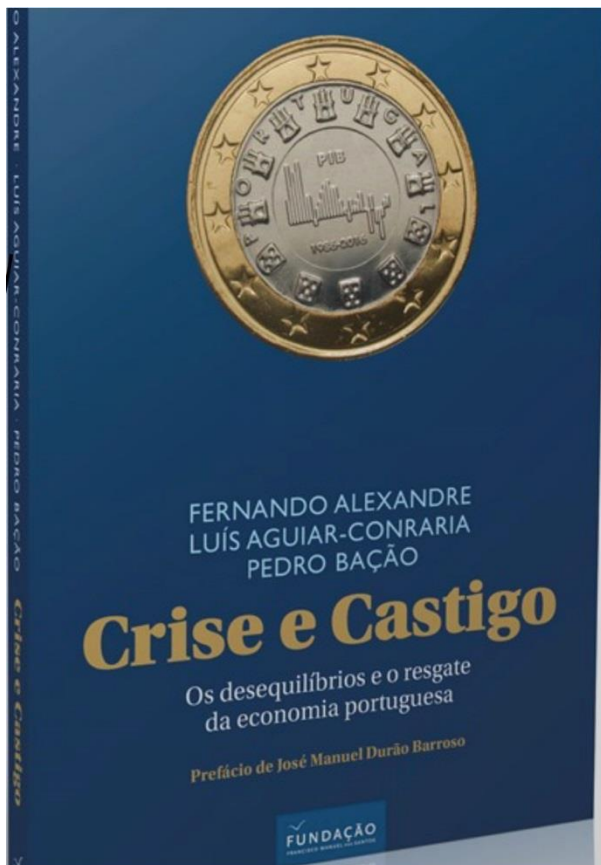
Livro publicado em 2014, que partiu da iniciativa da EEG-UMinho:

- Colaboração de 4 instituições (UMinho, UCoimbra, UPorto e ICS-UL)
- Participação de 36 investigadores
- Temáticas/partes do livro:
 - I. Desempenho macroeconómico
 - II. Internacionalização
 - III. Mercado de trabalho, instituições e competitividade
 - IV. Educação, economia e capital humano
 - V. Políticas sociais
 - VI. Ambiente e território



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Conhecer a Economia Portuguesa





Conhecer a Economia Portuguesa

FUNDAÇÃO
FRANCISCO MANUEL DOS SANTOS

LIMITAÇÃO DE MANDATOS



Coordenadores
Francisco Veiga
Linda Veiga
Bruno Fernandes
João Martins

ESTUDOS DA FUNDAÇÃO

FUNDAÇÃO
FRANCISCO MANUEL DOS SANTOS

BENEFÍCIOS DO ENSINO SUPERIOR



Hugo Figueiredo
Miguel Portela
Carla Sá
João Cerejeira
André Almeida
Diogo Lourenço

ESTUDOS DA FUNDAÇÃO



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Relatório final

Procedimento pré-contratual – Direção Geral das Autarquias Locais (DGAL)
Ajuste direto para a celebração de contrato de aquisição de serviços de consultoria
técnica destinados à elaboração de um estudo independente de

Monitorização da evolução das receitas e das despesas dos municípios

Unidades de investigação envolvidas

Núcleo de Investigação em Políticas Económicas (NIPE)
Centro de Investigação em Ciência Política (CICP)

Equipa técnica

Francisco Veiga (NIPE) - coordenador
António Tavares (CICP)
Francisco Carballo-Cruz (NIPE)
Linda Veiga (NIPE)
Pedro Camões (CICP)

Braga, 15 de julho de 2015



Cooperação Territorial Europeia e Cultura

Relatório Final

Universidade do Minho
Núcleo de Investigação em
Políticas Económicas - NIPE





Conhecer a Economia Portuguesa

Projeto “Instrumento de Apoio às Exportações” (iAPEX):

- desenvolvimento de uma ferramenta de apoio à seleção de mercados, baseada em diferentes fontes de informação.
- permite às empresas nacionais obter informação personalizada sobre mercados de uma forma rápida e simples

Queremos ajudá-lo a crescer e a fazer crescer as suas exportações

O iAPEX indica quais os mercados das exportações Portuguesas e das exportações mundiais para o produto escolhido, classifica o potencial dos mercados consoante as características da empresa utilizadora e fornece informação sobre o valor exportado previsto, a taxa de crescimento e riscos e barreiras associados a cada mercado.

Home Sobre o iAPEX Perguntas frequentes Política de privacidade e segurança dos dados Termos e Condições de utilização Contactos

Ministério da Economia. iAPEX. Copyright © 2017

O iAPEX resulta de uma encomenda do Ministério da Economia à EEG-UMinho e teve a colaboração técnica do Centro de Computação Gráfica da UMinho.

- Miguel Portela, João Cerejeira, Artur Rodrigues, Jorge Cerdeira e Nelson Areal



Conferência

Competitividade e Internacionalização

Competitividade e Internacionalização da Economia Portuguesa

**Contributos recentes da
EEG-UMinho**



Competitividade e Internacionalização da Economia Portuguesa

“Foreign acquisition and internal organization”

Paulo Bastos (World Bank), Natália Pimenta Monteiro (UMinho – NIPE),
Odd Rune Straume (UMinho – NIPE)

Journal of International Economics, 114, 143-163, 2018

Objetivo: Estudar os efeitos de aquisições (*takeovers*) externas na organização e na estrutura interna de salários das empresas.

Dados: Empresas portuguesas e seus trabalhadores de 1991 a 2009.

Resultados:

As aquisições externas levam a

- aumentos nas vendas, na produtividade do trabalho e nos salários médios
- um maior número de níveis hierárquicos
- maior desigualdade salarial entre os níveis de topo e de base da organização.



Competitividade e Internacionalização da Economia Portuguesa

“Firm Innovation and Co-Location in Portugal”

Ana Paula Faria, Natália Barbosa e Vasco Eiriz (UMinho – NIPE)

Growth and Change, 46(4), 574–592, 2015.

Objetivo: Analisar a relação entre escolhas de localização e inovação ao nível da empresa.

Dados: Inquérito Comunitário à Inovação em Portugal em 2006 e anos anteriores.

Resultados:

- Escolhas de localização têm um efeito duradouro no sucesso de inovação e na probabilidade de uma empresa ser um inovador persistente.
- Independentemente da localização geográfica, as empresas portuguesas inovadoras tendem a privilegiar inovação de processo, comparativamente a inovação do produto.



Competitividade e Internacionalização da Economia Portuguesa

“Industry-and firm-specific factors of innovation novelty”

Natália Barbosa, Ana Paula Faria, e Vasco Eiriz (UMinho – NIPE)

Industrial and Corporate Change, 23(3), 865–902, 2014.

Objetivo: Analisar o impacto relativo de fatores específicos à empresa e à indústria onde a empresa opera no desenvolvimento de inovação incremental ou radical.

Dados: Amostra de 2983 empresas e dados do Inquérito Comunitário à Inovação em Portugal em 2006 e anos anteriores.

Resultados:

- Fatores idiossincráticos e históricos ao nível da empresa promovem o desenvolvimento de capacidades de I&D, as quais são o principal fator explicativo do desenvolvimento de inovação incremental ou radical.
- Os gestores devem colocar mais ênfase na melhoria contínua das atividades internas de I&D e no fortalecimento das fontes externas de conhecimento.
- As políticas públicas devem promover e fortalecer as competências de I&D das empresas.



Competitividade e Internacionalização da Economia Portuguesa

“Portugal before and after the European Union: Facts on Nontradables”

Fernando Alexandre (UMinho – NIPE) e Pedro Bação (UCoimbra)

In J. C. Lopes, J. Santos, M. St. Aubyn and S. Santos (Coord.), 2013, Estudos de Homenagem a João Ferreira do Amaral, Almedina.

Objetivo: Análise detalhada da evolução dos setores de bens transacionáveis e não transacionáveis na economia portuguesa desde meados dos anos 1950.

Dados: Banco de Portugal, INE, Comissão Europeia, EU Klems, 1953-2009.

Resultados:

- A transição para os não transacionáveis ocorreu à custa da agricultura no período 1953-1995 e à custa da indústria em 1995-2009.
- A partir dos anos 1990, o aumento do peso dos não transacionáveis em Portugal foi superior ao ocorrido noutros países da OCDE.
- A construção e os serviços foram os principais veículos deste aumento.



Competitividade e Internacionalização da Economia Portuguesa

“Employment and Exchange Rates: The Role of Openness and Technology”

Fernando Alexandre (UMinho – NIPE) e Pedro Bação (UCoimbra), João Cerejeira (UMinho – NIPE) e Miguel Portela (UMinho – NIPE)

Open Economies Review, 22(5), 969-984, 2011.

Objetivo: Estudar a relação entre emprego, taxas de câmbio, abertura da economia e produtividade.

Dados: OCDE- STAN, Quadros de Pessoal, 1988-2006.

Resultados:

- Tanto o grau de abertura, como o grau tecnológico medeiam o impacto de movimentos da taxa de câmbio no mercado de trabalho.
- Enquanto o emprego em setores de alta tecnologia é relativamente imune a alterações cambiais, estas parecem ter efeitos consideráveis em setores muito abertos de baixa tecnologia (sobretudo através de destruição de trabalho).



Competitividade e Internacionalização da Economia Portuguesa

“Regional Variation of Firm Size and Growth: The Portuguese Case”

Natália Barbosa, Ana Paula Faria, e Vasco Eiriz (UMinho – NIPE)

Growth and Change, 42(2), 125–158, 2011.

Objetivo: Analisar o impacto das características específicas das regiões no crescimento das empresas, medido em termos de volume de emprego e valor do ativo.

Dados: Amostra de empresas portuguesas da indústria transformadora disponível na base de dados SABI e para o período 200-2004.

Resultados:

- As escolhas de localização por parte das empresas têm um efeito duradouro no seu processo de crescimento.
- As capacidades empreendedoras, qualificação dos trabalhadores disponíveis nas regiões, bem como a especialização industrial ao nível da região são os principais fatores que moldam o processo de crescimento das empresas.



Competitividade e Internacionalização da Economia Portuguesa

“The effect of entrepreneurial origin on firms’ performance: The case of Portuguese academic spinoffs”

Natália Barbosa e Ana Paula Faria (UMinho – NIPE)

Industrial and Corporate Change (em revisão).

Objetivo: Avaliar diferenças no desempenho económico entre empresas *spinoffs* académicas e não-*spinoffs*.

Dados: Dados relativos à população das *spinoffs* académicas fundadas entre 1979 e 2010 e uma amostra de 98,000 empresas portuguesas para igual período.

Resultados:

- Existem diferenças no processo de crescimento entre *spinoffs* académicas e restantes empresas.
- *Spinoffs* crescem sobretudo em termos de acumulação de capital humano e exportações, porém, não conseguem transferir estes ganhos para ganhos de produtividade, tornando o seu impacto económico limitado.



Competitividade e Internacionalização da Economia Portuguesa

Projetos de investigação recentemente financiados pela FCT:

- “É tudo sobre produtividade: contribuições para a compreensão da estagnação da economia portuguesa” (PTDC/EGE-ECO/29822/2017)
 - Outubro de 2018 a Setembro de 2021
 - Coordenadores: Fernando Alexandre e Miguel Portela (UMinho-NIPE)
 - Participam UMinho (coord.), UCoimbra, UPorto e Banco de Portugal
- “S4F - Skills for the Future? The Value and Effectiveness of Competency-Based Higher Education” (PTDC/CED-EDG/29726/2017)
 - Setembro de 2018 a Agosto de 2021
 - Coordenação a cargo de Alberto Amaral (CIPES)
 - Participam 4 membros da EEG



Competitividade e Internacionalização da Economia Portuguesa

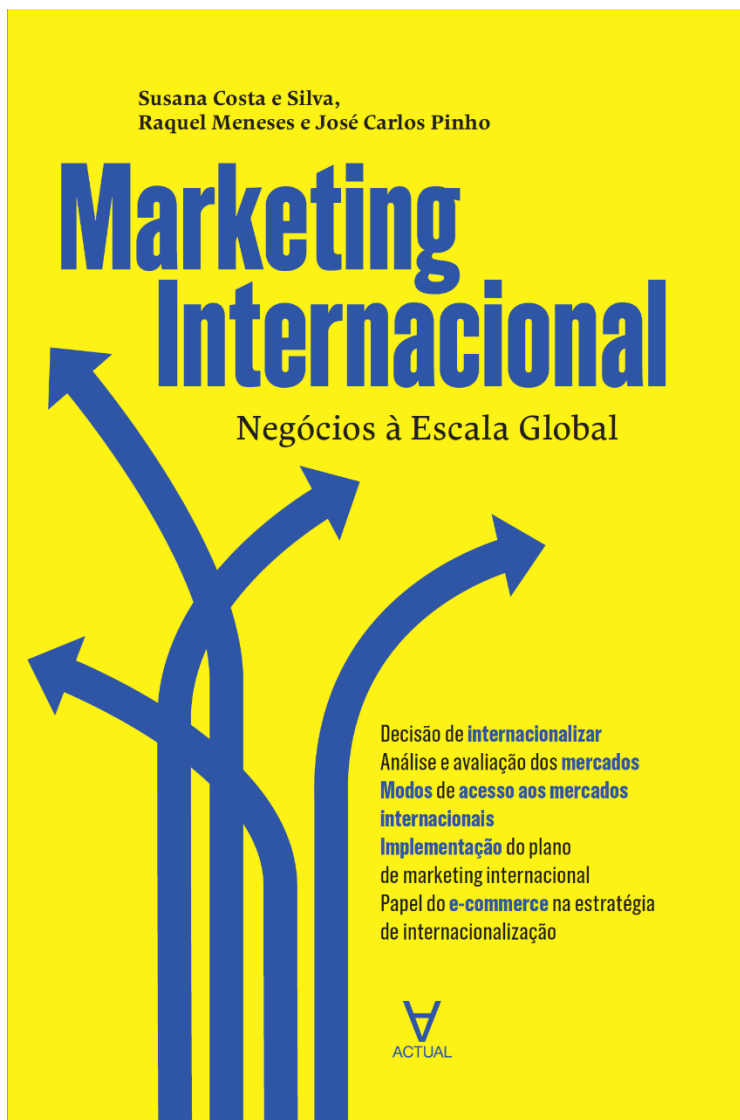
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Projetos de investigação recentemente financiados pela FCT:

- “DigEcoBus – Competition and Business Model Innovation in the Digital Age: Theory and Applications” (NORTE-01-0145-FEDER-028540)
 - Outubro de 2018 a Setembro de 2021
 - Coordenadores: Rosa Branca Esteves (UMinho-NIPE) e Joana Resende (UPorto-CEF.UP)
 - Participa como investigador: Francisco Carballo-Cruz (UMinho-NIPE)
 - Participam UMinho (coord.), UPorto (coord.) e INESC



Competitividade e Internacionalização da Economia Portuguesa



Livro que será lançado no dia 22 de novembro:

- 1- Desenvolvimento de um mindset (ou pré-disposição) por parte dos gestores no sentido de melhor compreender as idiossincrasias associadas a cada mercado.
- 2- Ferramenta útil para os gestores delinearem estratégias de internacionalização empresarial eficazes.
- 3- Alertar para a crescente importância da tecnologia Web (Marketing Digital) na forma como os consumidores decidem, compram e experienciam os produtos e serviços das empresas.



Competitividade e Internacionalização da Economia Portuguesa

Consultorias / participação em *think tanks*:

(Francisco Carballo Cruz – vice-presidente da EEG para a Interação com a Sociedade)

- Internacional.AVE – Internacionalização de Produtos e Serviços de Base Territorial [SIAC, CIM do Ave]
- SMART Minho [POCTEP, Centro de Estudos Euro-regionais]
- Internacionalização do Quadrilátero e Projeção de Estratégias Futuras de Promoção do Território [Quadrilátero Urbano do Minho]
- Minho Export – Capacitar para Internacionalizar [SIAC, InCubo/TecMinho]
- UpGrade SME [Interreg Europe, oito parceiros de seis países Europeus]



Competitividade e Internacionalização da Economia Portuguesa

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 **UMinho Exec**
Executive Business Education

PAINT
Programa Avançado de
Internacionalização dos
Negócios

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Conferência

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Competitividade e Internacionalização

16 de novembro de 2018



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Vencedor do prémio “Competitividade e Internacionalização”

“The Diffusion of Knowledge via Managers’ Mobility”

Giordano Mion, Luca David Opromolla e Alessandro Sforza



Universidade do Minho
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Ministério da Economia



The Diffusion of Knowledge via Managers' Mobility

Giordano Mion (University of Sussex)

Luca David Opromolla (Banco de Portugal)

Alessandro Sforza (Aarhus and U. Bologna)

November 16th, 2018

Introduction

- ▶ Tremendous variation in performance across firms.
- ▶ Exporters are usually larger and more productive (Melitz 2003 ECMA, Bernard et al 2007 JEP)...
- ▶ ...But, productivity and size are not the unique determinant of firms' (export) performance.
- ▶ Better managers and managerial practices improve performance

”...technology is only one part of the story, and a substantial unexplained productivity differential still remains, which panel data econometricians often label as the fixed effects of ”managerial quality” (Bloom & Van Reenen 2007 QJE)

This paper

- ▶ Questions:

- ▶ What is the "*exporting*" value of the knowledge of the manager?

- ▶ Why should we care?

- ▶ Say something on the **components** of the exporting cost
- ▶ Better understanding of exporting dynamics

This paper II

- ▶ Focus on exporters in Portugal
 - ▶ Between 1995 and 2005
- ▶ Exploit a natural experiment
 - ▶ End of the civil war in Angola in 2002
 - ▶ Solve the worker-firm matching problem
- ▶ Detailed data on firms, workers and trade

Results

▶ Main results:

1. Mngs' export experience affects the extensive margins → **fixed cost**
2. First order feature in the data: as important as productivity and, sometimes, as size

▶ Additional results:

1. Sizeable wage premium for managers with export experience
2. Export knowledge is decisive when it is market-specific.
3. Experience premium accrued by different types of managers aligns with a knowledge transfer story.

What can I do with the data?

1. **Matched employer-employee**, population of firms and workers
 - ▶ Identify managers:
 - ▶ Detailed definition of tasks of each worker
 - ▶ Can distinguish between manager types (general, financial...)
2. **Trade database** at the transaction level (EU and non-EU)
 - ▶ Detailed information on exports and imports
3. **Matching of the two**
 - ▶ Construct export experience!

Export experience

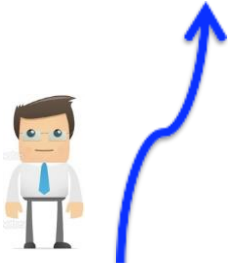


Non-exporter

Export experience



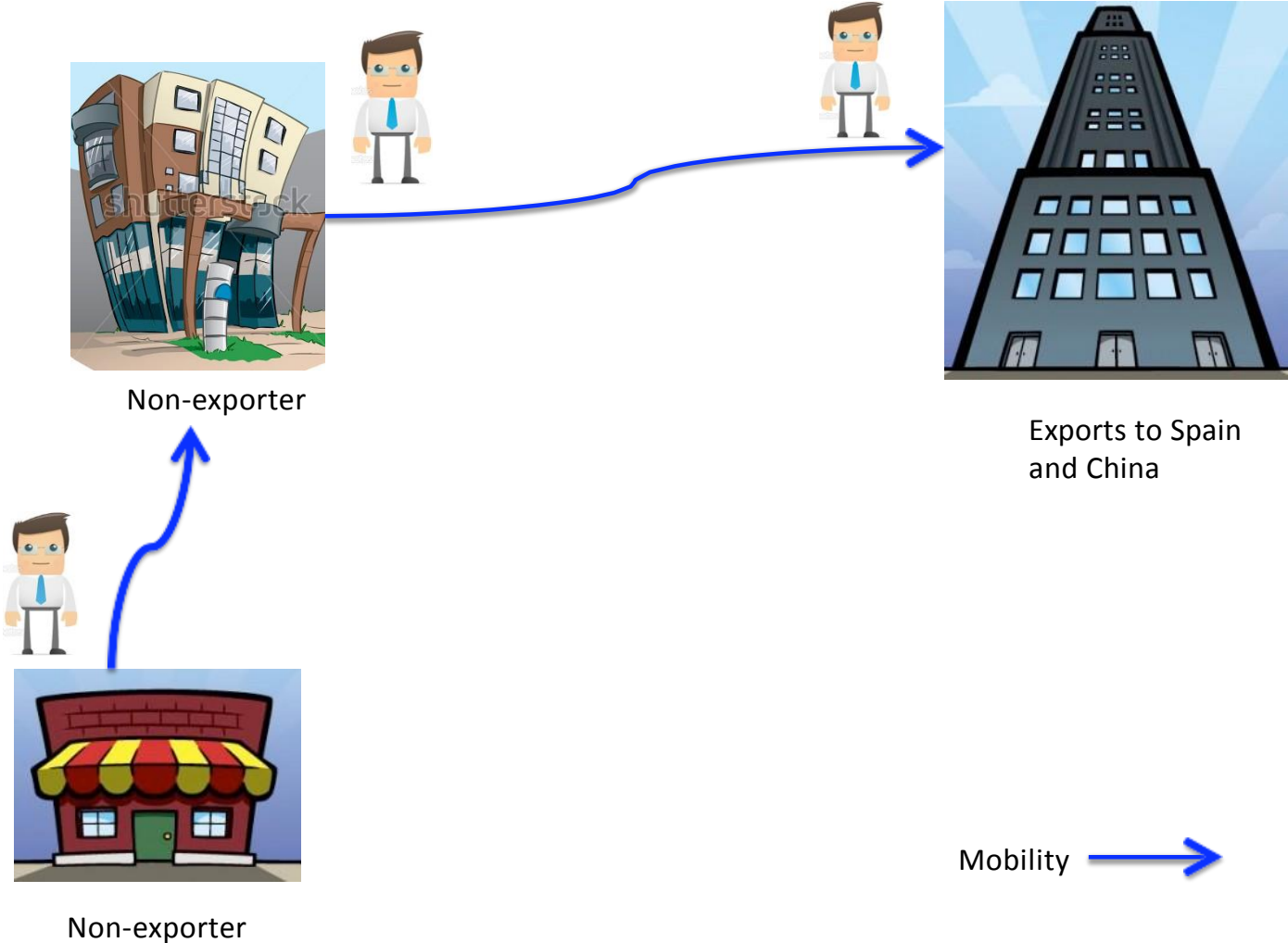
Non-exporter



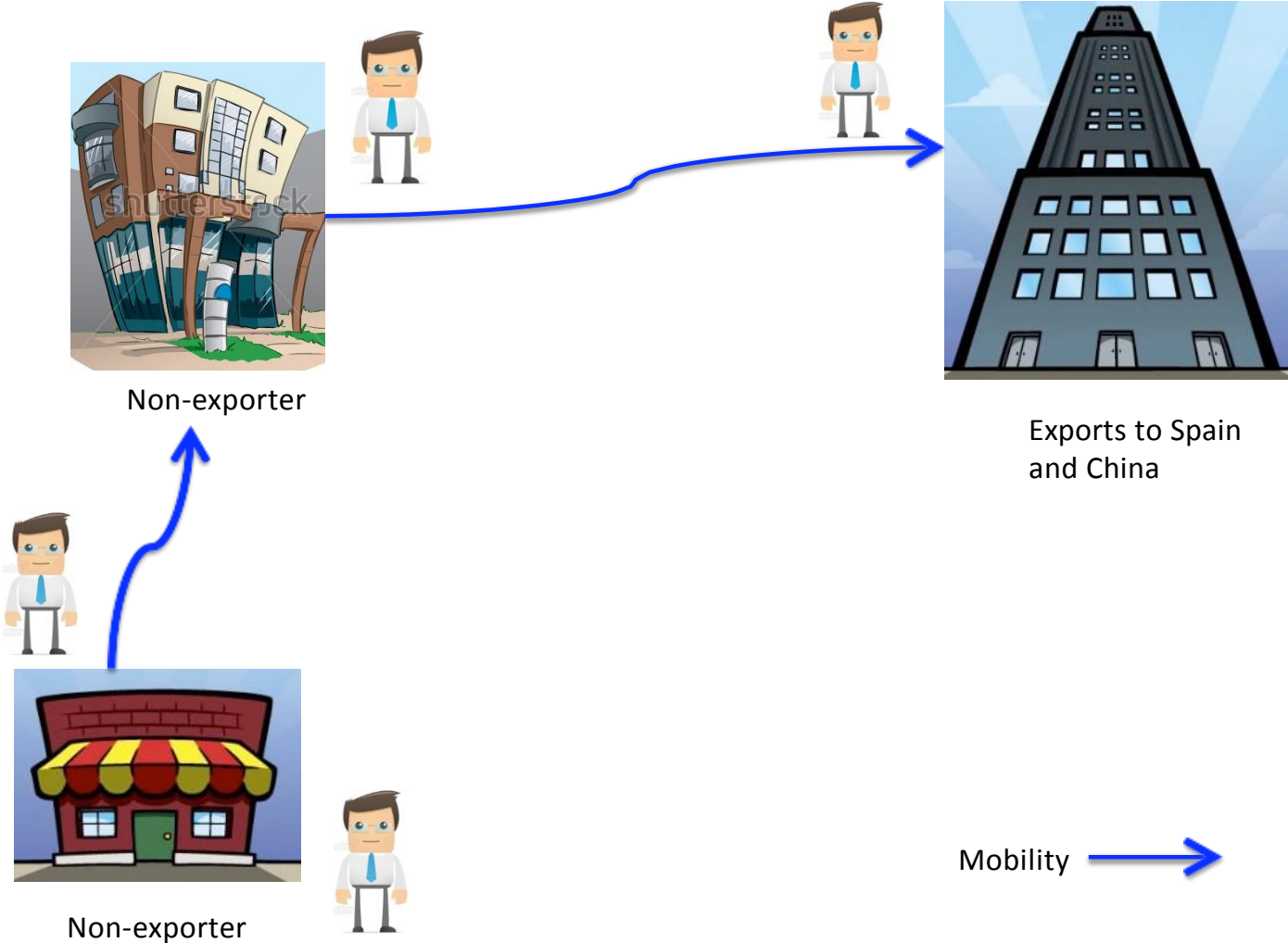
Non-exporter

Mobility →

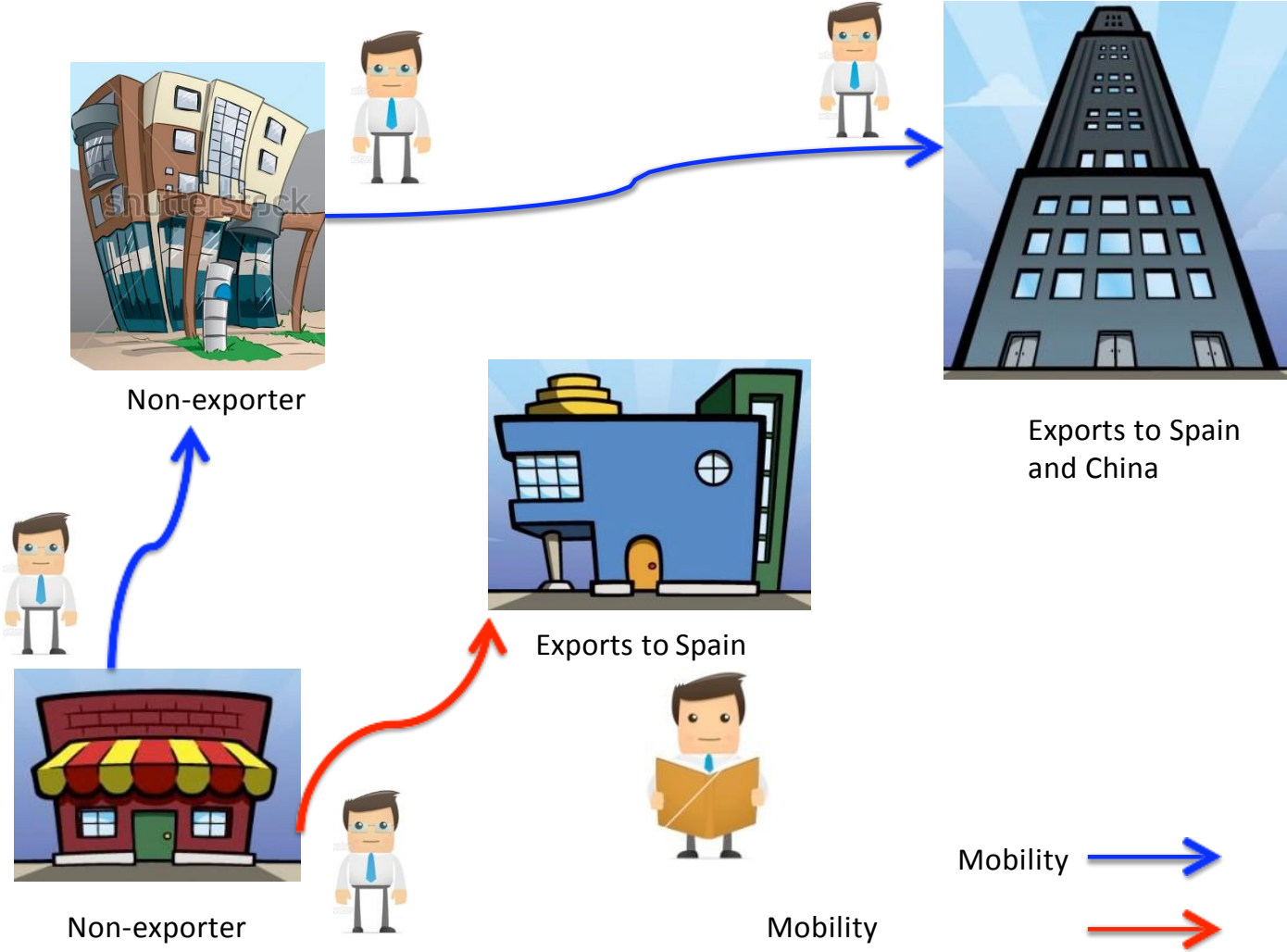
Export experience



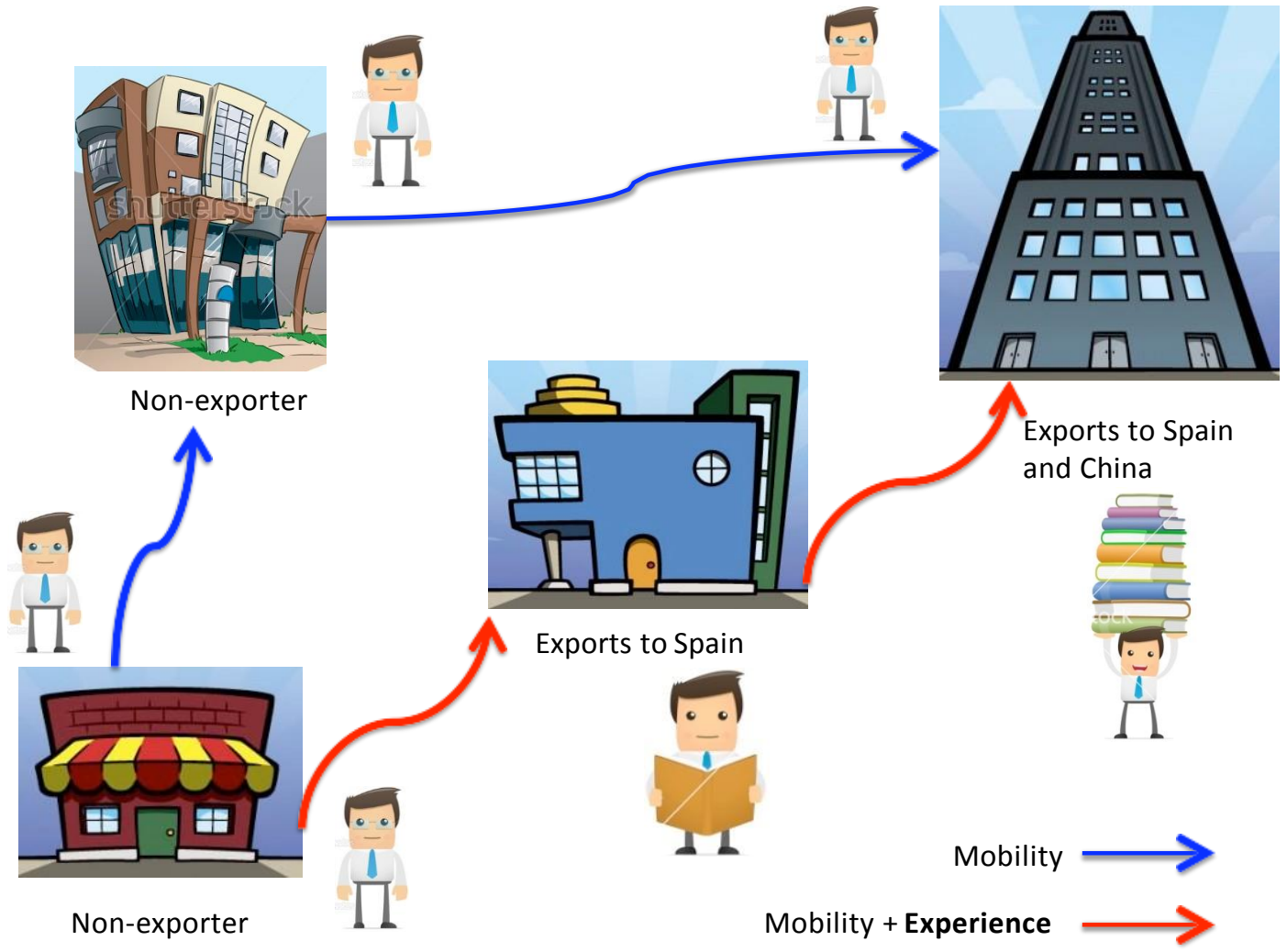
Export experience



Export experience



Export experience



Export experience

- ▶ Today: focus on **Angola** and other ex Portuguese colonies

Empirical strategy

Identification problem:

$$Export_{fmt} = \alpha + \beta Manager_{fmt} + \Gamma_{ft} + \gamma_f + \delta_t + E_{fmt} \quad (1)$$

The matching between firms and manager is endogenous!

What do I need:

- ▶ An instrument for the matching... **or**
- ▶ An event study!

The Angola shock

- ▶ Angola became independent from Portugal in 1974
- ▶ 1974: Movimento Popular de Libertação de Angola (MPLA) won the elections
- ▶ But the União Nacional para a Independência Total de Angola (UNITA) didn't recognize their victory
- ▶ 1975-2002 civil war
 - ▶ 500,000 people died (over the years)
 - ▶ Over one million internally displaced.
- ▶ **22nd of February 2002: death of UNITA leader Jonas Savimbi**

How do we use the shock?

Difference in Difference:

$$Export_{ftAO} = \alpha + \beta Manager_{ftAO} \times Post_{2002} + \Gamma * Controls_{ft} + \lambda_f + \delta_t + \epsilon_{fAOt}$$

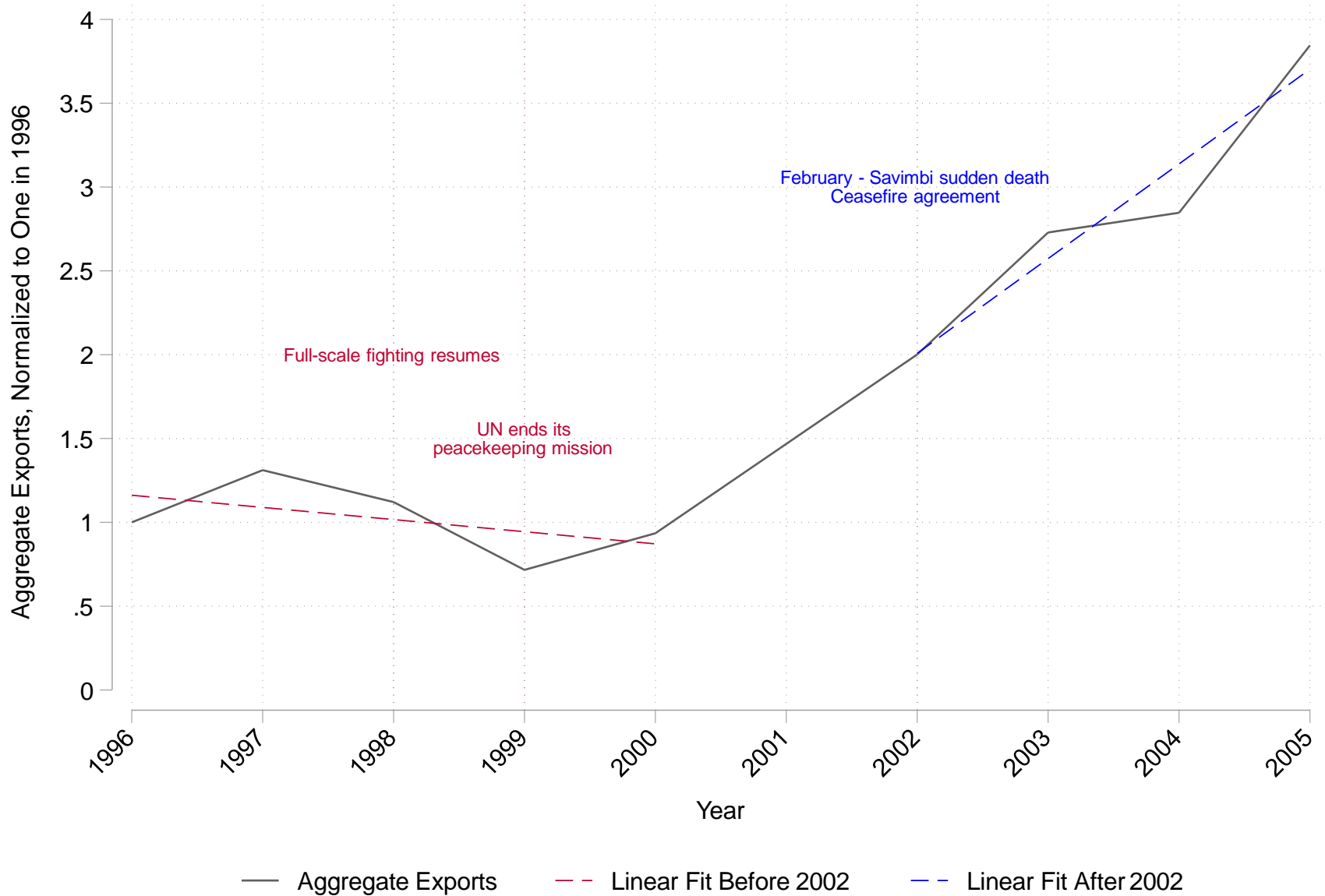
- ▶ What is the idea?
 - ▶ Unexpected event that opens the market
 - ▶ Firms did not have time to "prepare" for the shock by hiring in advance (also instrument using lags)
 - ▶ The firm-manager matching is quasi-random conditional on firm and manager characteristics

The exercise

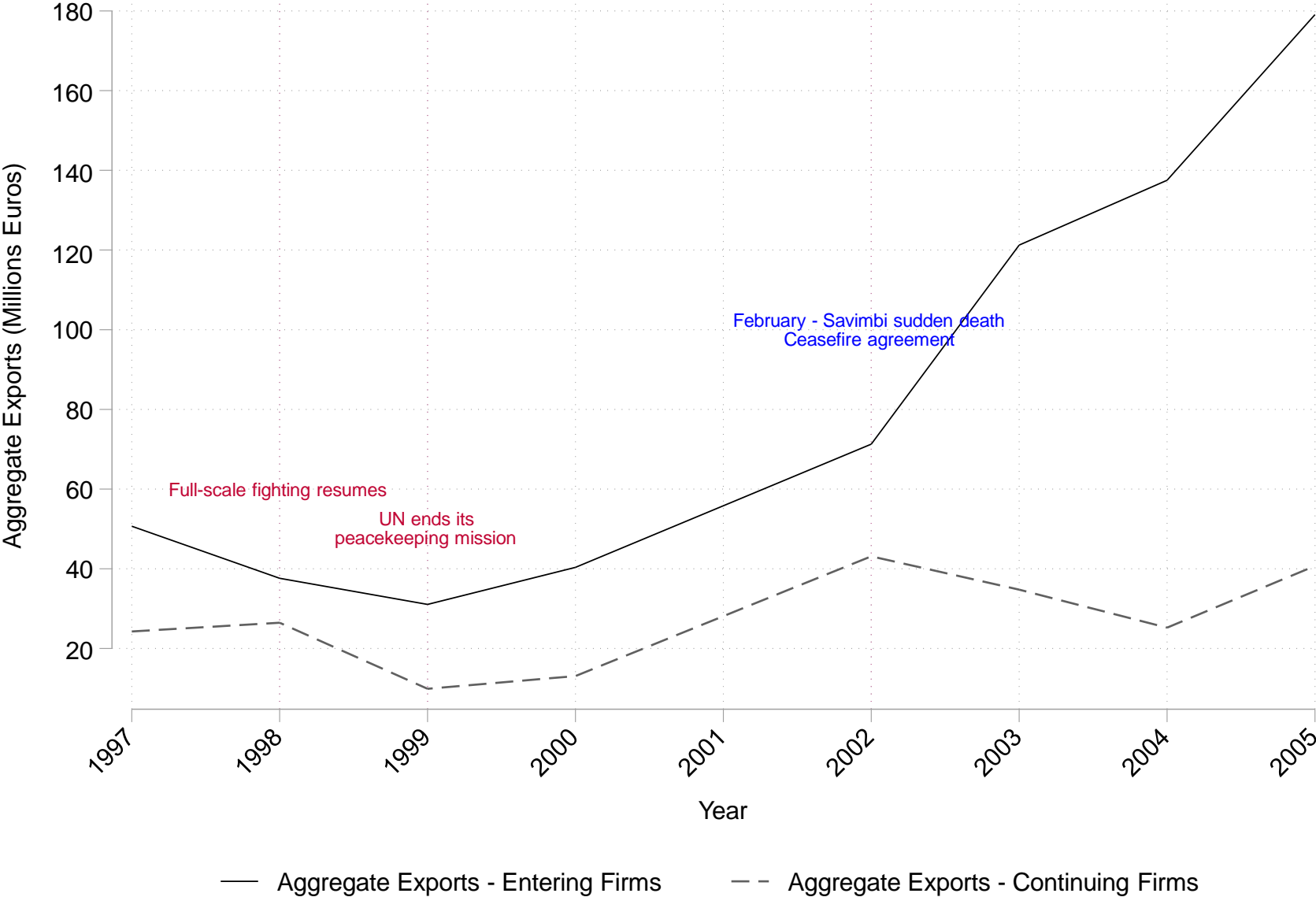
Compare two identical firms
except for having a manager with experience in Angola

1. Baseline comparison: firms with manager with experience in Angola vs firms without
2. IV: having hired a manager 3 years before
3. Angola vs other ex-colonies, including firm-time FE
4. Entering vs continuing firms, intensive and extensive margin

The Angola shock: Baseline comparison



Entering vs continuing firms



Baseline comparison

VARIABLES	(1) pse	(2) pse	(3) pse	(4) pse
Manag. w/ Spec. Exp. (0/1)	0.008^a (0.001)	0.002 (0.002)	-0.003 (0.003)	-0.004 (0.007)
Year>=2000 * Manag. w/ Spec. Exp. (0/1)				0.001 (0.007)
Year>=2002 * Manag. w/ Spec. Exp. (0/1)			0.007^b (0.003)	0.012^b (0.005)
Year>=2003 * Manag. w/ Spec. Exp. (0/1)				-0.006 (0.004)
Year>=2004 * Manag. w/ Spec. Exp. (0/1)				-0.002 (0.004)
Year>=2005 * Manag. w/ Spec. Exp. (0/1)				0.004 (0.003)
Observations	28,420	24,805	24,805	24,805
R ²	0.024	0.384	0.385	0.385
Firm controls	X	X	X	X
Year FE	X	X	X	X
N	28420	24805	24805	24805
Firm FE		X	X	X

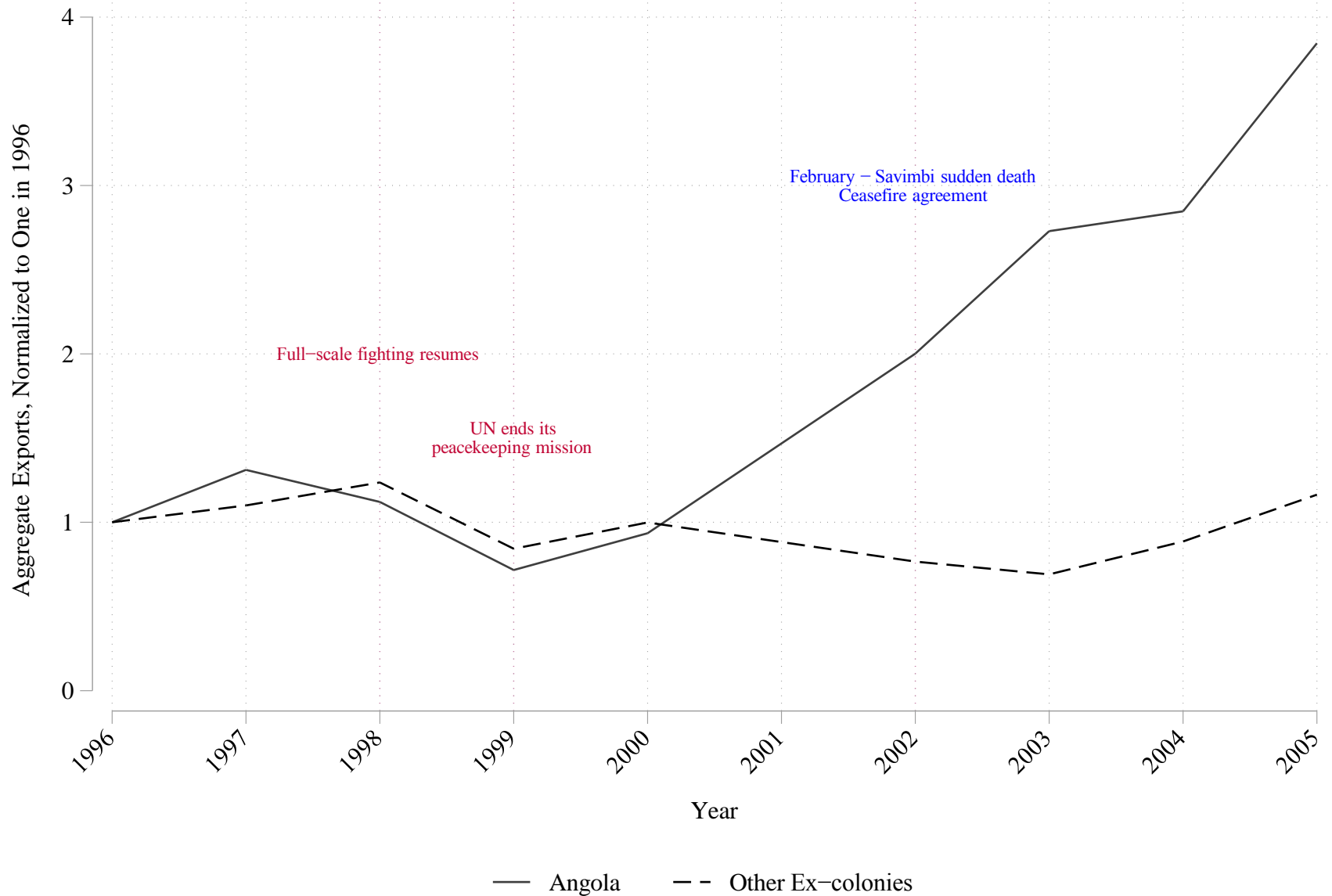
Robust standard errors in parentheses: ^a $p < 0.01$, ^b $p < 0.05$, ^c $p < 0.1$

Baseline comparison + IV

VARIABLES	(1) pse	(2) pse	(3) pse	(4) pse	(5) IV
Manag. w/ Spec. Exp. (0/1)	0.008^a (0.001)	0.002 (0.002)	-0.003 (0.003)	-0.004 (0.007)	-0.010 (0.010)
Year>=2000 * Manag. w/ Spec. Exp. (0/1)				0.001 (0.007)	0.002 (0.008)
Year>=2002 * Manag. w/ Spec. Exp. (0/1)			0.007^b (0.003)	0.012^b (0.005)	0.024^b (0.009)
Year>=2003 * Manag. w/ Spec. Exp. (0/1)				-0.006 (0.004)	-0.008 (0.007)
Year>=2004 * Manag. w/ Spec. Exp. (0/1)				-0.002 (0.004)	-0.008 ^c (0.005)
Year>=2005 * Manag. w/ Spec. Exp. (0/1)				0.004 (0.003)	0.007 (0.005)
Observations	28,420	24,805	24,805	24,805	11,108
R ²	0.024	0.384	0.385	0.385	0.020
Firm controls	X	X	X	X	X
Year FE	X	X	X	X	X
N	28420	24805	24805	24805	11108
Firm FE		X	X	X	X

Robust standard errors in parentheses: ^a $p < 0.01$, ^b $p < 0.05$, ^c $p < 0.1$

Angola vs other colonies



Conclusions

1. Managers with specific experience increase probability to enter a new market
2. No effect on the intensive margin. It's a fixed cost story
3. Sizeable wage premium for managers with export experience—in line with knowledge transfer story.
4. Causality link made stronger with natural experiment (Angola)
5. Additional results regarding competition with China, sectors relying on external finance, and product differentiation

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Vencedor do prémio “Competitividade e Internacionalização”

“Learning, prices and Firm Dynamics”

Paulo Bastos, Daniel A. Dias e Olga A. Timoshenko



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Learning, Prices, and Firm Dynamics

Paulo Bastos
World Bank

Daniel Dias
Federal Reserve Board

Olga Timoshenko
George Washington University

Universidade do Minho, 16 Nov 2018

Motivation

We are interested in the following questions:

1. How and why (some) firms eventually become successful exporters?

- ▶ A small proportion of firms account for the bulk of export revenue in each nation (Bernard et al., 2007; Mayer and Ottaviano, 2007; Freund and Pierola, 2015)
- ▶ Richer countries tend to have more and larger exporters with greater concentration in the top 5% (Fernandes, Freund and Pierola, 2016)
- ▶ Small number of large exporting firms matter for macro outcomes
 - ▶ Define specialization patterns (Freund and Pierola, 2015)
 - ▶ Shape impact of trade liberalization on macroeconomic volatility (di Giovanni and Levchenko, 2012)

Motivation

We are interested in the following questions:

1. How and why (some) firms eventually become successful exporters?
2. What are the mechanisms underlying the evolution of export performance over the firm life cycle?
 - ▶ Productivity dynamics to explain selection and growth (Luttmer, 2007; Impullitti, Irarrazabal and Opromolla, 2013; Arkolakis, 2016)
 - ▶ Learning about demand to explain conditional age and size dependence of growth (Jovanovic, 1982; Timoshenko, 2015; Arkolakis, Papageorgiou and Timoshenko, 2018)
 - ▶ Less attention paid to evolution of prices and quantities of inputs and outputs
 - ▶ Limited understanding about the mechanisms underlying joint evolution of firm performance and prices over the life cycle

What we do in this paper

- ▶ Document new facts about the joint evolution of firm performance and prices over the life cycle
 - ▶ Portuguese census of firms, 2005-2009
 - ▶ Portuguese firm-product survey data on manufactured inputs, 2005-2009
 - ▶ Portuguese customs records (exports and imports), 1990-2009
- ▶ Build a model of input and output quality choices in a learning environment
 - ▶ Bayesian learning about demand as in Jovanovic (1982), Timoshenko (2015), Arkolakis, Papageorgiou and Timoshenko (2018)
 - ▶ Quality choice as in Kugler and Verhoogen (2012)
- ▶ Explore quantitative implications of the model
 - ▶ Discipline the model to match life-cycle behavior of exporters observed in the data
 - ▶ Quantify the effect of quality standards on welfare

Data

We use three data sources:

1. *Foreign Trade Statistics (FTS)*

-) Import and export transactions of firms located in Portugal
-) Level of disaggregation: firm-product-destination(source)-year
-) Product: CN classification, 8-digit
-) Time period: 1990-2009

Data

We use three data sources:

1. *Foreign Trade Statistics (FTS)*

2. *Enterprise Integrated Accounts System (EIAS)*

-) Run by the National Statistics Institute
-) Census of firms operating in Portugal
-) Variables: total employment, total wage bill, date of constitution, capital stock, value added, industry code, location
-) Time period: 2005-2009, manufacturing sector

3. *Annual Survey of Industrial Production (IAPI)*

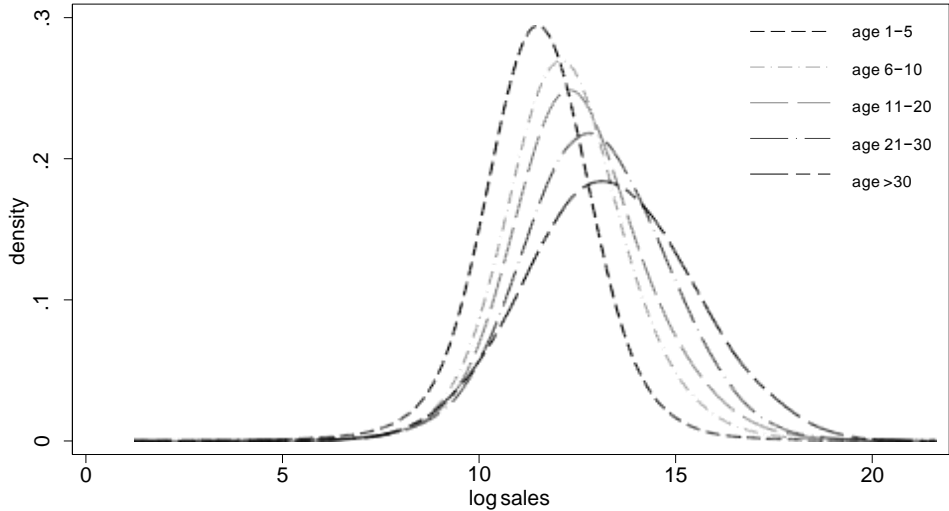
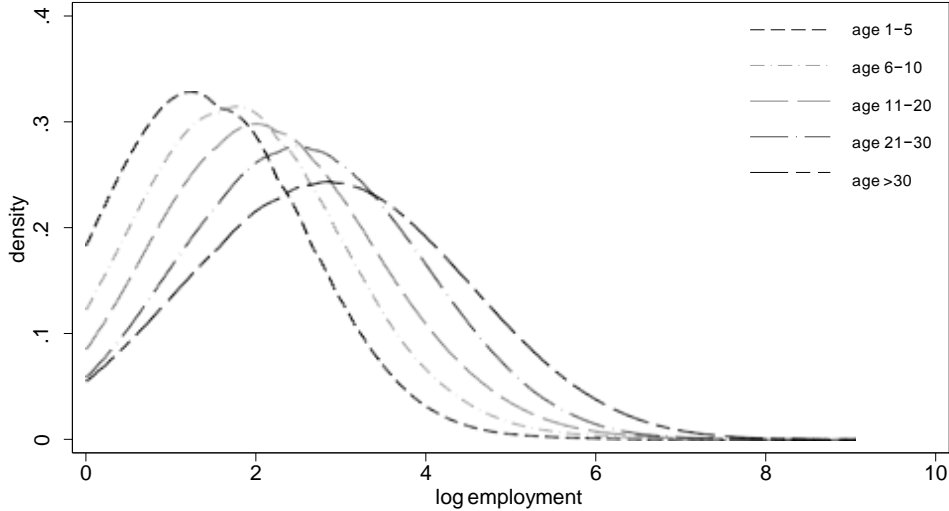
Data

We use three data sources:

1. *Foreign Trade Statistics (FTS)*
2. *Enterprise Integrated Accounts System (EIAS)*
3. *Annual Survey of Industrial Production (IAPI)*
 -) A survey of firms accounting for 90% of total sales in a given sector
 -) Variables: values and physical quantities material inputs, and energy sources of firms by product category
 -) Time period: 2005-2009

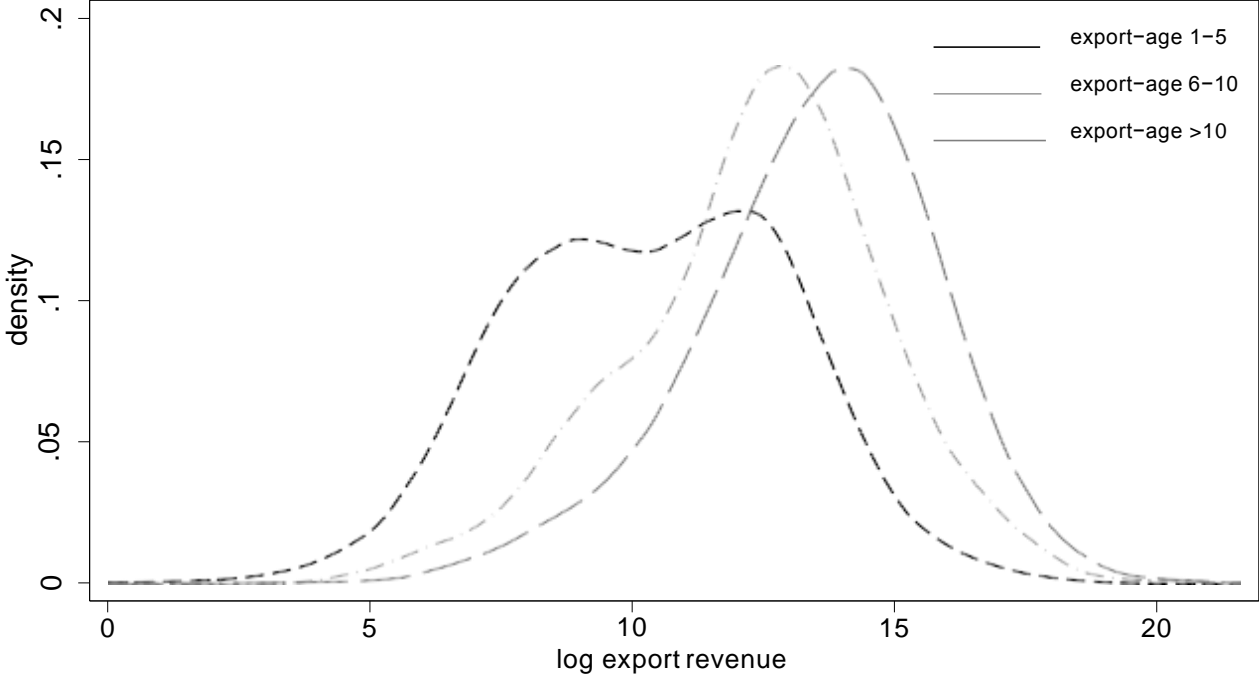
Firm size across cohorts

Older firms are larger



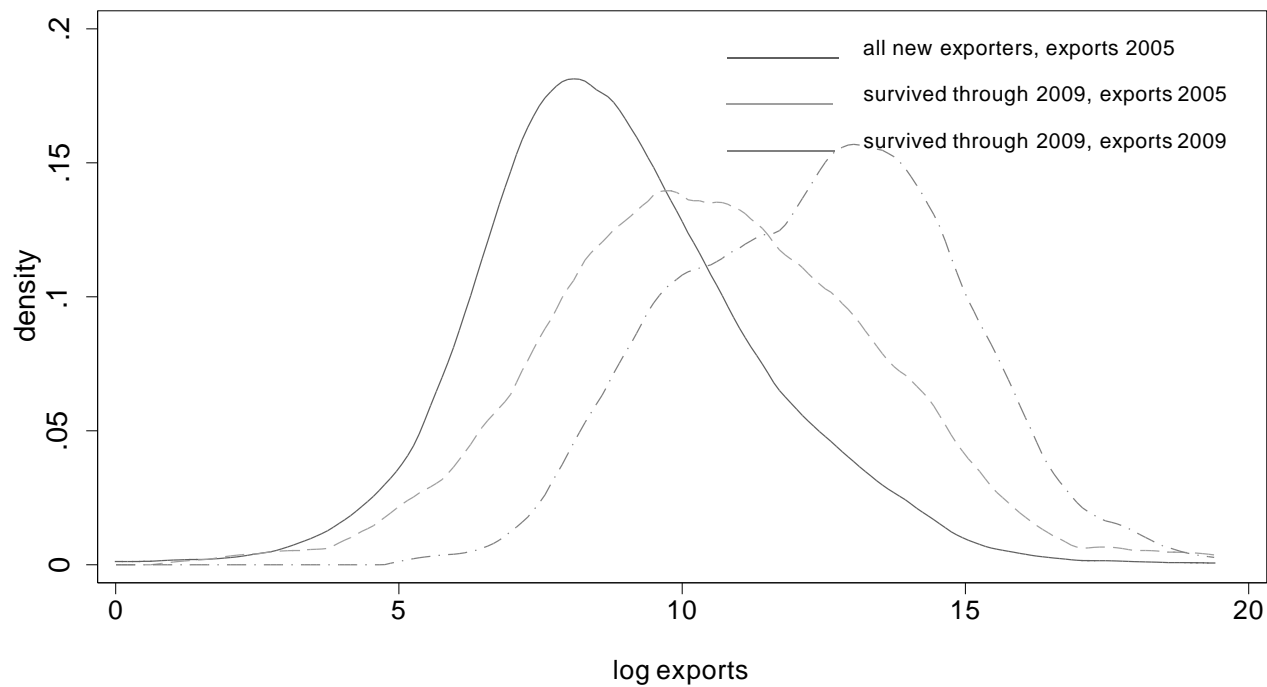
Export revenue across cohorts

Older exporters obtain more revenue



Growth versus selection on initial size

Older exporters obtain more revenue in part because they grew



Exports growth, size and experience

Dep variable:	log exports _t -log exports _{t-1}			log exports-dest _t -log exports-dest _{t-1}		
	(1)	(2)	(3)	(4)	(5)	(6)
log export-age _{t-1}	-0.049*** [0.006]		-0.023*** [0.006]			
log exports _{t-1}		-0.026*** [0.002]	-0.021*** [0.003]			
log export-age-destination _{t-1}				-0.068*** [0.003]		-0.033*** [0.003]
log exports-dest _{t-1}					-0.048*** [0.001]	-0.042*** [0.001]
N (obs.)	16,680	16,680	16,680	75,137	75,137	75,137
R-squared	0.061	0.065	0.066	0.039	0.050	0.052
industry-year effects	Y	Y	Y			
region effects	Y	Y	Y	Y	Y	Y
destination-year effects				Y	Y	Y
industry-effects				Y	Y	Y

Notes: The estimation sample is composed of manufacturing exporters in the period 2005-2009. In columns (1)-(3) data are at the firm-year level. In columns (4)-(6) data are at the firm-destination-year level. Robust standard errors in brackets, clustered by firm-year. ***1% level, **5% level, *10% level.

Export prices/quantities and export experience

Firms with longer spells of activity in export markets ship larger quantities at lower prices.

A. Dep. variable:		avg. log export price	
		(1)	(2)
log export-age-destination		-0.037*** [0.005]	-0.020*** [0.005]
N (obs.)		131,585	131,585
R-squared		0.192	0.524
B. Dep. variable:		avg. log export quantity	
		(1)	(2)
log export-age-destination		0.556*** [0.011]	0.571*** [0.014]
N (obs.)		131,585	131,585
R-squared		0.186	0.460
destination-year effects		Y	
industry effects		Y	
region effects		Y	
firm-year effects			Y
destination effects			Y

Notes: The estimation sample is composed of manufacturing exporters in the period 2005-2009. Data are at the firm-destination-year level. The dependent variable is the firm-destination-year average log export price (quantity), which was estimated using the FTS data set at the firm-product-destination-year level. Robust standard errors in brackets, clustered by firm-year. ***1% level, **5% level, *10% level.

Input prices

Exporters with longer spells of activity in export markets tend to use more expensive inputs.

Dep. variable:	log avg. wage (1)	avg. log import price (2)
log export-age	0.087*** [0.002]	0.021*** [0.006]
N (obs.)	29,804	19,767
R-squared	0.305	0.233
industry-year effects	Y	Y
region effects	Y	Y

Notes: The estimation sample is composed of manufacturing exporters in the period 2005-2009. Data are at the firm-year level. In column (1) the dependent variable is the firm-year average wage obtained from the EIAS data set. In column (2) the dependent variable is the firm-year average log import price, which was estimated using the FTS data set at the firm-product-year level. Robust standard errors in brackets. ***1% level, **5% level, *10% level.

Input prices/quantities and firm growth

Input prices/quantities tend to increase with revenue growth within firms.

A. Dep. variable:	log avg. wage (1)	avg. log import price (2)	avg. log input price (3)
log sales	0.227*** [0.004]	0.024* [0.013]	0.041* [0.022]
N (obs.)	178,697	31,281	14,602
R-squared	0.846	0.742	0.787

B. Dep. variable:	log employment (1)	avg. log import quantity (2)	avg. log input quantity (3)
log sales	0.346*** [0.004]	0.289*** [0.026]	0.603*** [0.040]
N (obs.)	178,697	31,281	14,602
R-squared	0.966	0.831	0.916

firm effects	Y	Y	Y
year effects	Y	Y	Y

Price volatility and export experience

Dep. variable:	absolute value of growth of		
	avg. log export price (1)	log avg. wage (2)	avg. log import price (3)
log export-age-destination _{t-1}	-0.043*** [0.003]		
log export-age _{t-1}		-0.085*** [0.005]	-0.073*** [0.007]
N (obs.)	72,398	16,680	14,146
R-squared	0.839	0.057	0.114
destination-year effects	Y		
region effects	Y	Y	Y
industry effects	Y		
industry-year effects		Y	Y

Notes: The estimation sample is composed of manufacturing exporters in the period 2005-2009. Data are at the firm-destination-year level in column (1) and at the firm-year level in columns (2) and (3). In column (1) dependent variable is the absolute value of the growth of the firm-destination-year average log export price, which was estimated using the FTS data set at the firm-product-destination-year level. In column (2) the dependent variable is the absolute value of the growth of the firm-year average log wage obtained from the EIAS data set. In column (3) the dependent variable is the absolute value of the growth of the firm-year average log import price, which was estimated using the FTS data set at the firm-product-year level. Robust standard errors in brackets. ***1% level, **5% level, *10% level.

Summary of key stylized facts

New facts about the joint evolution of firm performance and prices over the life cycle

1. Firms with longer spells of activity in export markets ship larger quantities at lower prices.
2. Firms with longer spells of activity in export markets pay higher wages and import more expensive inputs.
3. The growth of exports in export-age declines in age conditional on size, and declines in size conditional on age.
4. Input prices and quantities tend to increase with revenue growth within firms.
5. The volatility of output and input prices tends to decline with export experience.

Next step: Build a model of endogenous input and output quality choices in a learning environment to jointly explain these patterns in the data.

Model setup

- ▶ Time is discrete and denoted by t
- ▶ Multi-country environment
- ▶ Two sectors: a final-goods sector and an intermediate-inputs sector

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- ▶ Two sectors: a final-goods sector and an intermediate-inputs sector
- ▶ Final-goods sector
 - ▶ Horizontally differentiated varieties of various qualities
 - ▶ Potential uncertainty about demand realizations (Jovanovic, 1982)
 - ▶ Varieties are produced by monopolistically competitive firms
 - ▶ In each period there is an exogenous mass of potential entrants in each country

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- ▶ Final-goods sector
 - ▶ Horizontally differentiated varieties of various qualities
 - ▶ Potential uncertainty about demand realizations (Jovanovic, 1982)
 - ▶ Varieties are produced by monopolistically competitive firms
 - ▶ In each period there is an exogenous mass of potential entrants in each country
- ▶ Intermediate-inputs sector
 - ▶ Perfect competition
 - ▶ Constant returns to scale production technology
 - ▶ Can be produced in various qualities

Main implications

- ▶ Key mechanism: interaction between learning about unobserved demand and incentives to upgrade quality
 - ▶ An average surviving firm updates its demand expectations upwards and grows.
 - ▶ Higher demand expectations increase profitability and provide an incentive to upgrade quality.
 - ▶ Hence, older firms purchase higher quality inputs.
 - ▶ Since it is more costly to produce higher quality inputs, older exporters pay higher input prices.
 - ▶ The effect on the final goods prices is ambiguous

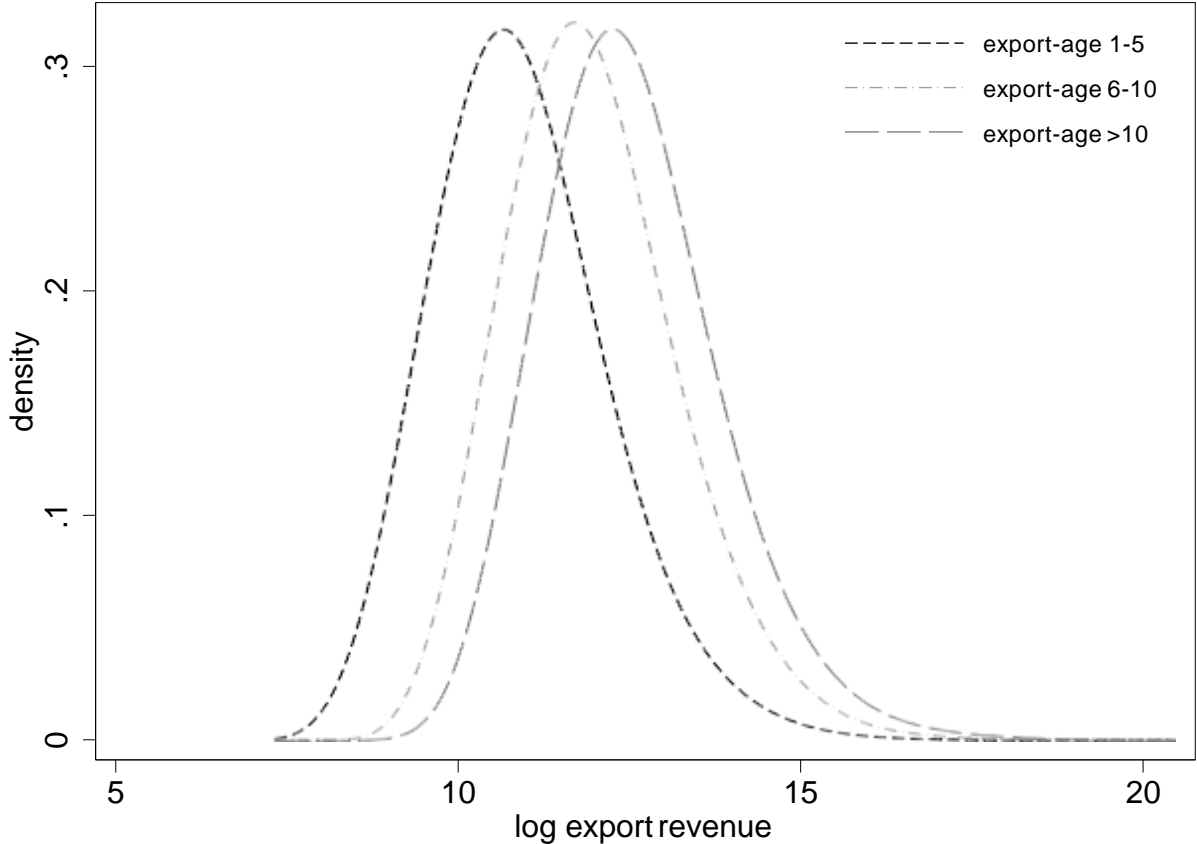
Quantitative results 1/4

Table: Data and simulation moments, 2005-2009

Calibration moments	data (1)	simulation (2)
1. The mean of the logarithm of export sales	11.96	11.96
2. The growth rate of export entrants	31.08%	30.81%
3. The share of sales from export entrants	1.42%	1.41%
4. The age coefficient in the input price regression[a]	0.021	0.021
5. The age coefficient in the exports growth regression[b]	-0.023	-0.023
6. The tail index of the export sales distribution[c]	-1.238	-1.245
<i>Criterion</i>		<i>0.0002</i>

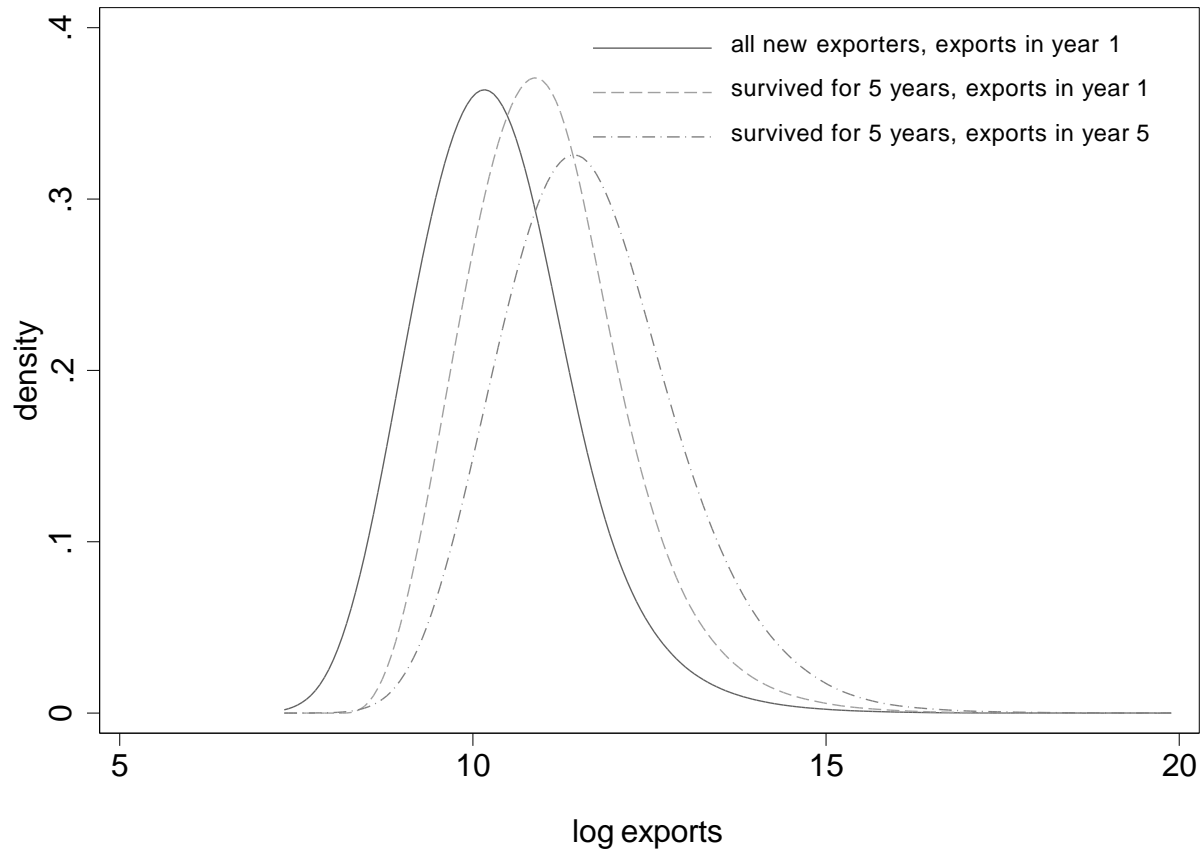
Quantitative results 2/4

Exports and export-age in simulated data



Quantitative results 3/4

Selection versus growth in simulated data



Quantitative results 4/4

Table: Export growth, revenue, and experience in the simulated data

Dep. variable:	$\log \text{ exports}_t - \log \text{ exports}_{t-1}$
$\log \text{ export-age}_{t-1}$	-0.023*** [0.001]
$\log \text{ exports}_{t-1}$	-0.032*** [0.001]
N (obs.)	185,111
R-squared	0.01
sample	$\text{age} \leq 20$

Notes: The table reports OLS regressions based on the simulated firm-level sample. Robust standard errors in brackets. ***1% level, **5% level, *10% level.

Conclusion 1/3

- ▶ Used rich combination of Portuguese transactions-trade and firm-level census data to examine joint evolution of firm performance and prices over the life cycle
- ▶ The main empirical findings are
 1. Firms with longer spells of activity in export markets ship larger quantities at lower prices.
 2. Firms with longer spells of activity in export markets pay higher wages and import more expensive inputs.
 3. The growth of exports in export-age declines in age conditional on size, and declines in size conditional on age.
 4. Input prices and quantities tend to increase with revenue growth within firms.
 5. The volatility of output and input prices tends to decline with export experience.

Conclusion 2/3

- ▶ What explains these facts?
- ▶ Key mechanism: the interaction between learning about unobserved demand and incentives to upgrade quality
 - ▶ An average surviving firm updates its demand expectations upwards and grows.
 - ▶ Higher demand expectations increase profitability and provide an incentive to upgrade quality.
 - ▶ Hence, older firms purchase higher quality inputs.
 - ▶ Since it is more costly to produce higher quality inputs, older exporters pay higher input prices.
 - ▶ The effect on the final goods prices is ambiguous

Conclusion 3/3

- ▶ Quantified model matches well key patterns in the data
- ▶ Minimum quality standards on exports reduce welfare by lowering entry in export markets and reallocating resources from old and large towards young and small firms

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Vencedor do prémio “Competitividade e Internacionalização”

“Agglomeration and Industry Spillover Effects in the Aftermath of a Credit Crunch”

Joana Rocha e José Silva



Universidade do Minho
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Agglomeration and Industry Spillover Effects in the Aftermath of a Credit Crunch

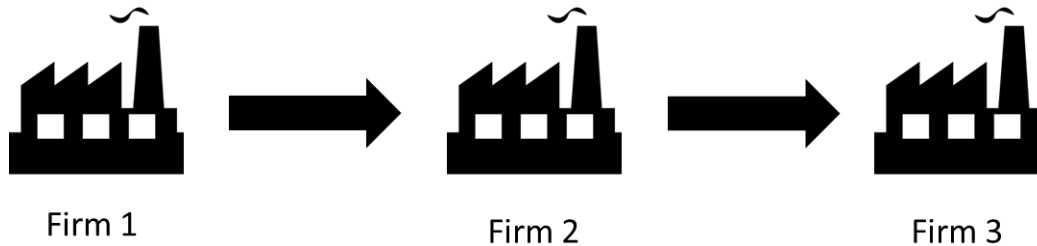
Joana Rocha

(joint work with José Jorge)

Faculdade da Economia da Universidade do Porto

November 2018

Industry spillover effects = external scale economies



PAPER'S SETUP:

Consider a group of interrelated firms which benefit from external scale economies among them, such as knowledge spillovers, supply chains, or “deep” labor markets.

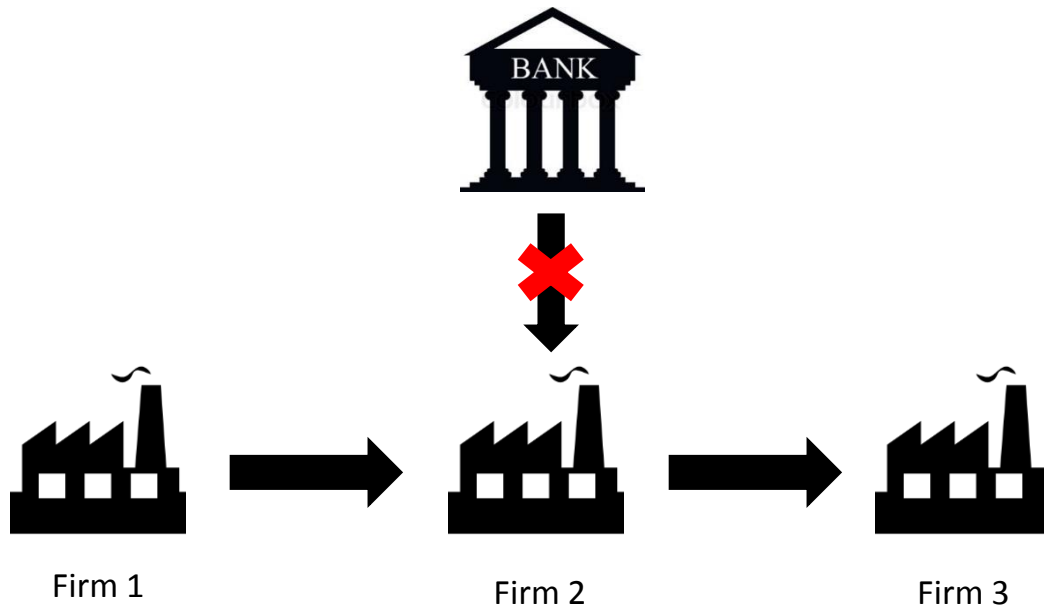
PAPER'S QUESTION:

What happens when a bank cuts credit access to *one of the firms* in the group? Will it affect the “neighboring” firms? Will it have negative externalities?

➔ PRODUCTIVITY IN THESE INDUSTRIES RESPONDS MORE THAN IN OTHER SECTORS

➔ THUS, STRUCTURAL REFORMS MAY HAVE DIFFERENT IMPACTS ACROSS SECTORS

Industry spillover effects (Jorge and Rocha, 2016)



2009's credit crunch in the Portuguese economy

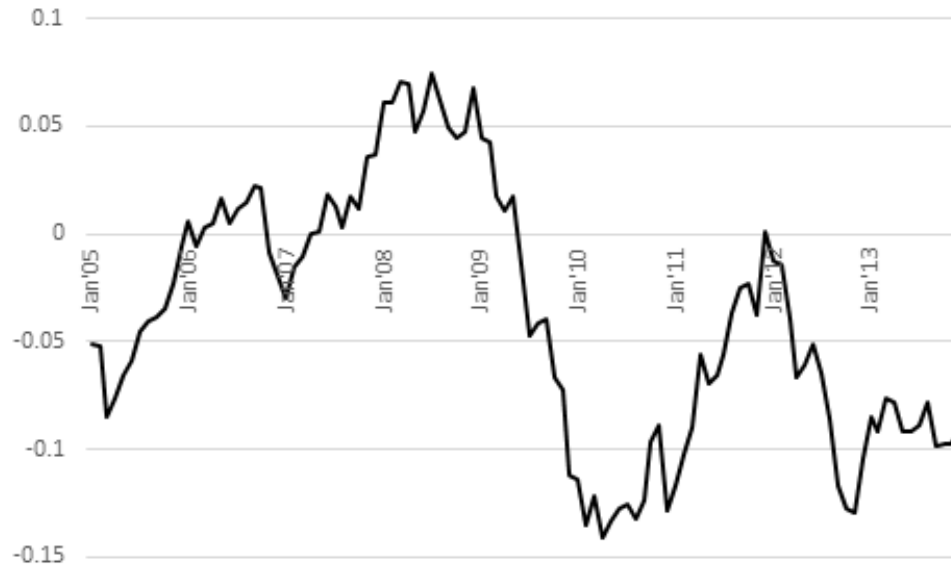
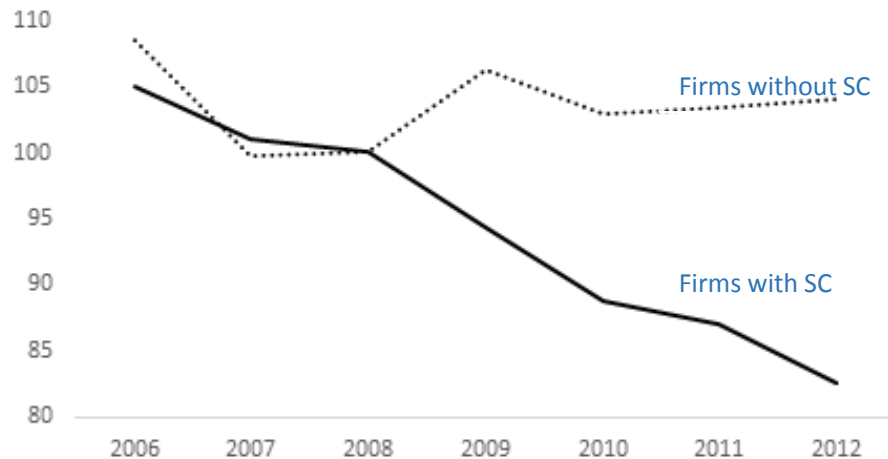


Figure 1: Evolution of bank lending in Portugal in the period 2005-13. This figure plots monthly growth rates of aggregate bank loans. Source: Banco de Portugal.

The role of spillovers in firms' investment

- The benefits of external scale economies depend on the level of output of the industry.
- Thus a reduction in the output of the industry will have a negative impact on firms' productivity.
- Productivity is a key determinant of investment.
- A negative shock in output is likely to reduce investment, since capital will be less productive.

Evolution of fixed capital in firms with intense and minor complementarities



Similar evolution among both groups until 2008. After 2009, capital falls sharply for operating firms which benefit from external scale economies, whereas it remains relatively stable for the other group of firms

Figure 3: Effect of the 2009 credit shock on firms' fixed capital. The reference year is 2008, in which the ratio of fixed capital over assets takes the value 100.

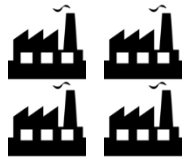
Identifying firms external scale economies

Agglomeration economies have been used as a measure of external scale economies

We use location theory (e.g. Ellison and Glaeser, 1997) to identify firms which benefit from external scale economies.

External economies arise from knowledge spillovers, labour market pooling and input sharing, urbanization economies.

Firms from industries with high DM indices
(proxy for strong external scale economies)

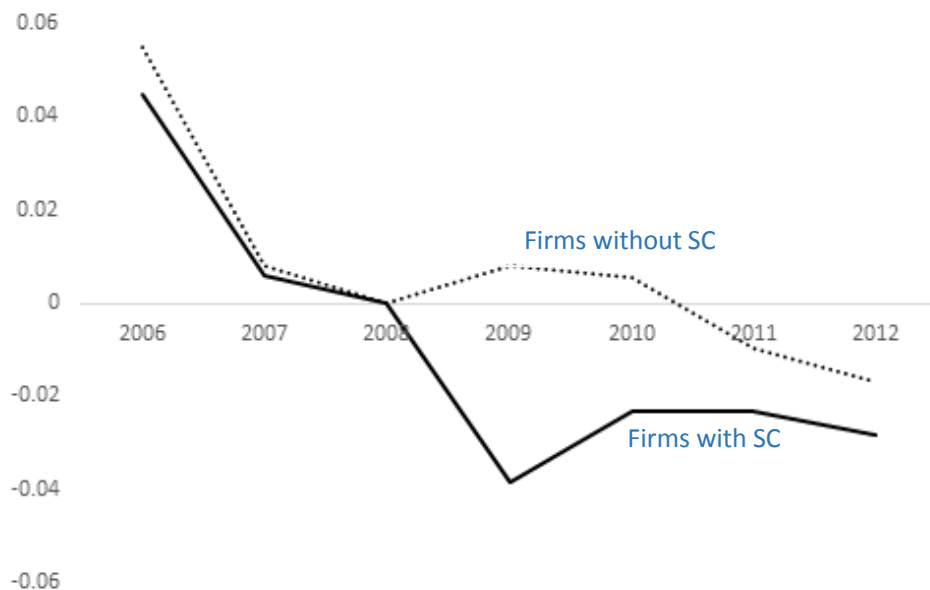


Firms from industries
with low DM indices



DM index: location coefficient which quantify those external scale economies that result from the spatial concentration of firms of a particular industry in a given region and that are internalized by firms of that particular industry (e.g. Guimarães, Figueiredo, and Woodward, 2007).

The shock in bank credit on investment



We run separate panel regressions for the two groups of the ratio of investment over assets on a set of year dummies, controlling for firm fixed effects (2008 is the omitted year).

Our empirical strategy consists of measuring the differential reduction in investment for both groups.

Figure 4: Effect of the 2009 credit shock on firms' investment.

Data

- Sabi database for Portuguese firms: end-of-year balance sheets, income statements, and banking relationships (\approx Compustat in US)
- Period: 2006 – 2012 (covering both crisis and pre-crisis years)
- Final sample: 984 firms in the group with large DM indices and 240 firms in the group with low DM indices.

Investment over assets

We average each firms' time series into two sample means: one for the period 2006-2008 and one for the period 2009-2012. Then we average firms' sample means for each combination group-period. The table reports whether the differences in average investment between groups for each period are statistically significant.

	Before the crisis	After the crisis	Difference	(p-value)
Without SC	0.066	0.050	0.016	0.005
With SC	0.077	0.037	0.040	0.000
N obs	2915	4729		



Credit conditions hurt more firms with SC.

Table 1: Investment/Assets before and after the credit crisis.

Ratio of investment over assets decreases by one-half, from 0.077 to 0.037, for the group of firms with SC. A difference of 0.040, which compares with 0.016 in the group of firms without SC

Baseline regression = Difference-in-differences

Dependent variable = Investment/Assets

	(4)	(5)
Coefficient on the interaction term	-2,12 percentage points ***	-1.99 percentage points ***
Total bank credit of the industry	No	Yes
Firm fixed effects	Yes	Yes
Number of observations	7644	7644

t-statistics in parentheses *** p < 0.01

Following the onset of the credit shock, annual investment (as a fraction of assets) declined by 2.12 percentage points more for firms with strategic complementarities (SC).

The coefficient on the interaction term shows that the decline in investment is economically large and statistically significant for firms with SC. In column (5) we also considered as control variable total bank credit of each industry.

Robustness checks

Issue	Solution	How?
Debt is endogenous	Instrumental Variables	Debt in 2006
Aggregate shocks	Time dummies	Time dummies for each year
Shock may not have been in 2009	Try other cut-offs	Interaction terms for other years
An alternative way to identify the shock	Substitute CC dummy by a continuous variable	Total bank credit per industry

Robustness checks

Issue	Solution	How?
More homogeneous subsamples	Sample splits: deal with sample selection problem	Only firms which work with non-bailout banks
	Sample splits: deal with unobserved changes in investment (demand shocks)	Only exporting firms
Observed and non-observed investment	Counterfactual matching estimator	Propensity score matching estimator (“average effect of the treatment on the treated”, Leuven and Sianesi, 2003)

Conclusion

In our baseline regression, we estimate that:

- Annual investment (as a fraction of assets) declines by 2 percentage points more for firms with strategic complementarities, in the aftermath of the credit crunch.
- With the counterfactual matching estimator we obtain a decline by 3.3 percentage points.

Appendix

Structural reforms

They have the potential to boost productivity and employment, to reinvigorate growth, to improve the ability of countries to adjust to shocks, reallocate resources and restructure their economies.

Encompass many reforms:

1. Fiscal consolidation
2. Increase competition in labor markets.
3. Increase competition in product markets, so as to reduce markups/rents in the non-tradable sector.

Structural reforms aim at boosting long-term growth prospects, but may be **recessionary** in the short-term.

1. Eggertsson, Ferrero and Raffo (JME 2014). Reforms are contractionary when monetary policy is at the Zero-lower-bound, as monetary policy cannot accommodate the recessionary effects of the reforms.
2. Cassola and Jorge (JIMF 2016). There is a J-curve in structural reforms.

The J-curve effect of the adjustment policies

There are two dimensions in the adjustment programs:

1. Fiscal consolidation measures aimed at reducing imbalances in public accounts
2. Structural reforms aiming at boosting long-term growth prospects.

Adjustment effort is very likely recessionary in the short-term, as a result of **fiscal consolidation** (see, for example, Guajardo et al., 2014, and Castro et al., 2015) and because **some structural reforms** (e.g., labour market reforms) which may also be recessionary in the short-term (see, for example, Eggertsson et al., 2014).

TWO KEY IMPLICATIONS:

1. The **reduction of investment** (for example as a result of the crowding out of private investment to finance fiscal deficits) **will harm more some industries**.
 - a) Unemployment problems (both in capital and in labor) become more severe in these industries.
 - b) Concerns about the political sustainability of the reforms.

2. The **reallocation of resources should be oriented towards these industries** (e.g. selective credit policies) because these sectors benefit from strategic complementarities (i.e. spillovers among firms)

Baseline regression = Difference-in-differences

$$INV_{it} = \alpha_1 + \beta_1 CC_t + \beta_2 SC_i + \beta_3 CC_t \cdot SC_i + \beta \mathbf{W}_{it} + \eta_t + \eta_i + \epsilon_{it}$$

INV_{it} : Investment of firm i in period t

CC_t : Credit contraction dummy

SC_i : SC dummy variable

$CC_t \cdot SC_i$: Interaction term

\mathbf{W}_{it} : Vector of control variables

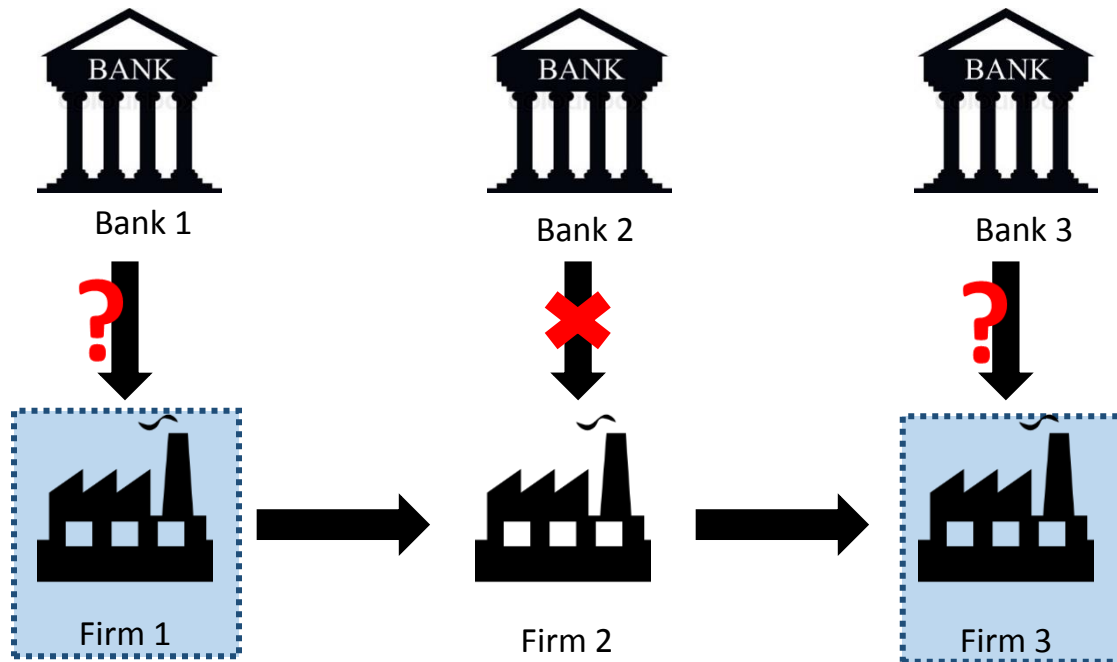
η_t : Year dummies

η_i : Firm fixed effects

ϵ_{it} : Error term

Coefficient of the interaction term, which represents the effect of the credit crunch in the group of firms with SC

Industry spillover effects (Bebchuk and Goldstein, 2011)



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Vencedor do prémio “Competitividade e Internacionalização”

“Export Destinations and Input Prices”

Paulo Bastos, Joana Silva e Eric Verhoogen



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Export Destinations and Input Prices

Paulo Bastos
World Bank

Joana Silva
World Bank

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U Minho, 16 November 2018

Introduction

- ▶ Mounting evidence of effects of exporting on firm behavior.
 - ▶ Productivity literature mixed (Clerides et al., 1998; Bernard and Jensen, 1999; Van Biesebroeck, 2005; Alvarez and L'opez, 2005; De Loecker, 2007).
 - ▶ Stronger evidence of effects on:
 - ▶ Technology investments (Bustos, 2011; Lileeva and Trefler, 2010).
 - ▶ Wages, ISO 9000 certification (Verhoogen, 2008).
 - ▶ Observable dimensions of product quality (Atkin et al., 2017).
 - ▶ Working conditions (Tanaka, 2017).
- ▶ Broad enthusiasm in development policy community for exporting.

“A flourishing export sector is a crucial ingredient of high growth, especially in the early stages.” (Spence Growth Commission, 2008)
- ▶ Open questions: Is it exports *per se* that matter, or the *destination* of exports? Why?

Introduction (cont.)

Some leading hypotheses (not exhaustive list):

1. Scale effects (Yeaple, 2005; Bustos, 2011)

- ▶ Fixed costs of adopting/using advanced technology, R&D, etc.
- ▶ Expansion of scale reduces per-unit share of fixed costs.
- ▶ Suggests *volume of exports*, not destination characteristics, should matter.

2. Quality choice

- a. Per-unit transport costs (Alchian and Allen, 1964; Hummels and Skiba, 2004)
 - ▶ Transport costs effectively lower for higher value goods.
 - ▶ Suggests *distance* of destination should matter.
- b. Differences in willingness to pay for quality (Linder, 1961; Hallak, 2006; Verhoogen, 2008)
 - ▶ Richer consumers more quality-sensitive.
 - ▶ Firms sell higher-quality varieties in richer markets.
 - ▶ Suggests *income level* of destination should matter.

Introduction (cont.)

- ▶ Existing studies using new trade-transactions datasets offer some evidence for the income-based quality channel:
 - ▶ Firms charge higher prices to richer destinations within the same product-year:
 - ▶ Bastos and Silva (JIE, 2010): Portugal
 - ▶ Manova and Zhang (QJE, 2012): China
 - ▶ Martin (2012): France
 - ▶ Görg, Halpern and Murakozy (2010): Hungary
 - ▶ Robust to controlling for distance.
- ▶ But there are non-quality-related explanations:
 - ▶ Pricing to market: firms may charge higher mark-ups in richer countries, even for homogeneous goods (Krugman, 1987; Goldberg and Knetter, 1997).
 - ▶ Cross-sectional correlation may be driven by selection, rather than an effect of exporting on firm behavior.

Introduction (cont.)

- ▶ This paper uses combination of trade-transactions and plant-product-level price data from Portugal to examine a distinctive implication of income-based quality channel.
- ▶ Develops a simple model combining several ideas from the literature:
 - ▶ An individual firm sells higher-quality varieties in richer markets (Verhoogen, 2008).
 - ▶ Producing high-quality output requires high-quality inputs (Kugler and Verhoogen, 2012).
 - ▶ Variable mark-ups, a la Atkeson and Burstein (2008).
- ▶ Key implications:
 - ▶ income of destination $\uparrow \Rightarrow$ input quality, prices \uparrow .
 - ▶ While output price changes may reflect changes in mark-ups, the same is arguably not true for input prices.

Introduction (cont.)

- ▶ Empirical strategy: use real-exchange-rate movements interacted with initial export composition at firm level as instruments for export destination.
- ▶ Punchline: avg. destination income $\uparrow \Rightarrow$ input prices \uparrow .
- ▶ Effect stronger in sectors with higher scope for quality differentiation, measured by R&D and advertising intensity in U.S.
- ▶ Does not appear that market power in input markets can explain patterns.
- ▶ Results supportive of income-based quality channel.

Data

- ▶ Two main datasets:
 - ▶ Customs data on firm-level international trade transactions.
 - ▶ Essentially the universe of transactions.
 - ▶ *Inquérito Anual à Produção Industrial (IAPI)* [Annual Survey of Industrial Production]: survey of prices of outputs and inputs of manufacturing firms.
 - ▶ In selected sectors, includes largest firms until 90% of sales are covered.
 - ▶ Available 1997-2005. Sample coverage reduced 2002-2005.

Table 3: Confirming cross-sectional patterns, 1997

	dep. var.: firm-product log export price			
	(1)	(2)	(3)	(4)
richer than Portugal	0.092*** (0.030)	0.089*** (0.026)		
log GDP/cap.			0.029*** (0.011)	0.032*** (0.010)
log GDP	0.008* (0.004)	0.003 (0.005)	0.006 (0.005)	0.001 (0.006)
European Union	0.053* (0.029)	0.021 (0.022)	0.062** (0.027)	0.026 (0.020)
landlocked	0.020 (0.026)	0.028 (0.018)	0.006 (0.033)	0.020 (0.020)
log distance	0.072*** (0.013)	0.064*** (0.011)	0.069*** (0.012)	0.062*** (0.009)
product effects	Y	N	Y	N
firm-product effects	N	Y	N	Y
R2	0.75	0.93	0.75	0.93
N	71490	71490	71490	71490

Empirical Strategy

- ▶ We would like to estimate a model of the form:

$$\ln v_{it} = \log(\text{inc}_{it})\beta + A_i + B_t + X_{it}a + \varepsilon_{it} \quad (1)$$

- ▶ where inc_{it} is average destination income.
- ▶ Various forms of omitted variable bias possible:
 - ▶ Cost shocks passed on into output prices, sales response depends on elasticity of demand. If less elastic in rich countries \Rightarrow positive bias in $\hat{\beta}$.
 - ▶ Higher sunk costs of export entry in poor destinations. Favorable cost shocks lead to less entry there, unfavorable cost shocks lead to less exit \Rightarrow negative bias in $\hat{\beta}$.
- ▶ Attenuation bias caused by measurement error in average destination income.

Empirical Strategy (cont.)

- ▶ IV strategy:

- ▶ Write average income as:

$$inc_{it} = \sum_{k \in K} s_{ikt} \cdot gdppc_{k,1996} \quad (2)$$

- ▶ Allow sales, s_{ikt} , to respond to exchange rates more if firm initially exports to country k :

$$s_{ikt} = F_{ik} + \log(RER_{kt})\gamma_k + (\log(RER_{kt}) * C_{ik,1997}) \delta_k + u_{ikt} \quad (3)$$

where $C_{ik,1997}$ is indicator for exports > 0 to k in 1997.

- ▶ Combining (2) and (3):

$$inc_{it} = G_t + H_i + \sum_{k \in K} (\log(RER_{kt}) \cdot C_{ik,1997}) \phi_k + v_{it}$$

where $G_t = \sum_{k \in K} \log(RER_{kt}) gdppc_{k,1996}$,

$H_i = \sum_{k \in K} F_{ik} gdppc_{k,1996}$, $\phi_k = \delta_k gdppc_{k,1996}$, and

$v_{it} = \sum_{k \in K} u_{ikt} gdppc_{k,1996}$.

Empirical Strategy (cont.)

- ▶ IV strategy (cont.):
 - ▶ Issue: exchange-rate movements can also affect sources of imports, may have a direct effect on input prices.
 - ▶ Remedy: include interactions of RER and indicators for initial import origins on RHS.

$$\bar{v}_{it} = \log(\text{inc}_{it})\beta + X_{it}a + a_i + b_t + \sum_{k \in K} (\log(\text{RER}_{kt}) \cdot D_{ik,1997}) X_k + \varepsilon_{it} \quad (4)$$

- ▶ To calculate average input prices, we run:

$$\log(uv_{iAt}) = \theta_{it} + \kappa_{At} + \xi_{iAt}$$

and set $\bar{v}_{it} = \hat{\theta}_{it}$

- ▶ Eq. (4) is our main estimating equation, with $(\log(\text{RER}_{kt}) \cdot C_{ik,1997})$ as instruments (K of them) for $\log(\text{inc}_{it})$ (and sometimes other elements of X_{it} .)
 - ▶ Limit to 100 destinations. Exclude interaction terms for euro-zone countries.
 - ▶ Weak instruments are a concern; present diagnostics below.

Table 4: Sales response to RER movements

	dep. var.: % firm's sales			
	(1)	(2)	(3)	(4)
log(RER)	0.006*** (0.001)	0.007*** (0.001)	0.003*** (0.000)	0.004*** (0.001)
log(RER)*1(any exports in 1997)			0.864*** (0.095)	
log(RER)*(sales share in 1997)				0.274*** (0.068)
firm effects	Y			
destination effects	Y			
firm-destination effects	N	Y	Y	Y
year effects	Y	Y	Y	Y
R2	0.04	0.85	0.85	0.85
N	6666214	6666214	6666214	6666214

Table 5: Destination income and input prices, OLS

	dep. var.: firm-average log real input price			
	(1)	(2)	(3)	(4)
log avg. destination gdp/cap.	0.065*** (0.023)	0.074*** (0.025)	0.075*** (0.028)	0.070** (0.028)
log(1 + avg. dest. distance)		-0.003 (0.002)	-0.003 (0.002)	-0.003 (0.002)
export share of sales			-0.004 (0.031)	-0.002 (0.031)
log sales				0.024*** (0.007)
initial source interactions	Y	Y	Y	Y
firm effects	Y	Y	Y	Y
year effects	Y	Y	Y	Y
R2	0.80	0.80	0.80	0.80
N	45659	45659	45659	45659

Table 6: Destination income and input prices, IV

	dep. var.: firm-average log real input price					
	(1)	(2)	(3)	(4)	(5)	(6)
log avg. destination gdp/cap	0.66*** (0.21)	0.61*** (0.21)	0.73*** (0.25)	0.71*** (0.25)	0.77*** (0.26)	0.68*** (0.26)
log(1+avg dest. distance)		-0.01*** (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.05* (0.03)	0.06** (0.03)
export share of sales			-0.34** (0.13)	-0.33** (0.13)	-0.66*** (0.23)	-0.22 (0.32)
log sales				0.02*** (0.01)	0.01** (0.01)	0.01 (0.01)
initial source interactions	Y	Y	Y	Y	Y	Y
firm effects	Y	Y	Y	Y	Y	Y
year effects	Y	Y	Y	Y	Y	Y
N	45659	45659	45659	45659	45659	45659
Kleibergen-Paap LM statistic (under-identification)	264.22	269.91	249.61	248.92	245.01	232.20
Kleibergen-Paap LM p-value	0.00	0.00	0.00	0.00	0.00	0.00
Kleibergen-Paap Wald rk F-stat (weak insts.)	3.11	3.11	2.67	2.65	2.53	2.32
Anderson-Rubin Wald test F-stat	2.20	2.20	2.19	2.17	2.17	2.18
Anderson-Rubin Wald test p-value	0.00	0.00	0.00	0.00	0.00	0.00

Notes: Columns 1 to 4 treat only log avg. destination GDP/cap as endogenous; Column 5 adds log avg. dest distance, and Column 6 adds export share of sales to endogenous set. Petroleum exports and imports excluded. Robust standard errors in parentheses. *10% level, **5% level, ***1% level.

- ▶ Tests for subsets of endogenous regressors with weak instruments are a frontier in econometric theory (Mikusheva, 2013).
- ▶ IV estimates with weak instruments are “biased towards” the corresponding OLS estimates (Angrist and Pischke, 2009, ch. 4)

Table 11: Role of market power in input markets

	dep. var.: firm-average log real input price			
	(1)	(2)	(3)	(4)
log avg. dest. gdp/cap	0.40** (0.20)	0.45** (0.21)	0.56** (0.22)	0.49*** (0.16)
log(1+avg dest. distance)	0.04* (0.02)	0.04* (0.02)	0.03 (0.02)	0.02 (0.02)
export share of sales	-0.03 (0.26)	-0.21 (0.24)	-0.11 (0.24)	-0.24 (0.19)
log sales	0.01 (0.01)	0.01** (0.01)	0.01** (0.01)	0.02** (0.01)
log avg. dest. gdp/cap *herfindahl (suppliers)	-1.89*** (0.60)			-1.20** (0.53)
log avg. dest. gdp/cap *herfindahl (purchasers)		-1.39** (0.71)		-0.64 (1.17)
log avg. dest. gdp/cap *purchaser share			-1.03 (0.69)	-0.14 (1.12)
initial source interactions	Y	Y	Y	Y
firm effects	Y	Y	Y	Y
year effects	Y	Y	Y	Y
N	43776	45659	45659	43776
Kleibergen-Paap LM statistic (under-identification)	342.10	368.59	382.69	565.82
Kleibergen-Paap LM p-value	0.00	0.00	0.00	0.00
Kleibergen-Paap Wald rk F-stat (weak insts.)	1.89	1.87	1.99	1.85
Anderson-Rubin Wald test F-stat	2.25	3.04	2.88	3.66
Anderson-Rubin Wald test p-value	0.00	0.00	0.00	0.00

Table 12: Interaction with R&D and adv. intensity, IV

	dep. var.: firm-average log real input price		
	(1)	(2)	(3)
log avg. dest. gdp/cap	0.51** (0.21)	0.51** (0.21)	0.46** (0.21)
log(1+avg dest. distance)	-0.04*** (0.02)	-0.04 (0.03)	-0.02 (0.03)
export share of sales	-0.20* (0.11)	-0.22 (0.18)	0.06 (0.23)
log sales	0.02*** (0.01)	0.02*** (0.01)	0.02** (0.01)
log avg. dest. gdp/cap*R&D + adv. intensity	1.66** (0.66)	1.65** (0.67)	1.42** (0.69)
initial source interactions	Y	Y	Y
firm effects	Y	Y	Y
year effects	Y	Y	Y
N	45659	45659	45659
Kleibergen-Paap LM statistic (under-identification)	367.68	363.46	372.30
Kleibergen-Paap LM p-value	0.00	0.00	0.00
Kleibergen-Paap Wald rk F-stat (weak insts.)	2.46	2.27	1.88
Anderson-Rubin Wald test F-stat	2.37	2.38	2.38
Anderson-Rubin Wald test p-value	0.00	0.00	0.00

Notes: Specifications similar to Table 6 Columns 4-6, but including interaction of destination income and R&D and advertising intensity for the firm's output sector. Column 1 treats only log avg. destination GDP/cap and the interaction with the R&D and advertising intensity as endogenous; Column 2 adds export share of sales, and Column 3 adds log avg. destination distance to endogenous set. Robust standard errors in parentheses. *10% level, **5% level, ***1% level.

Table 13: Destination income and energy input prices

	dep. var.: firm-avg. log real energy price			
	OLS	IV		
	(1)	(2)	(3)	(4)
log avg. destination gdp/cap	-0.00 (0.01)	-0.08 (0.11)	-0.06 (0.11)	-0.02 (0.11)
log(1+avg dest. distance)	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)	0.00 (0.01)
export share of sales	-0.03** (0.01)	0.01 (0.06)	-0.05 (0.09)	-0.29** (0.13)
log sales	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01** (0.00)
initial source interactions	Y	Y	Y	Y
firm effects	Y	Y	Y	Y
year effects	Y	Y	Y	Y
N	42043	42043	42043	42043
Kleibergen-Paap LM statistic (under-identification)		240.94	247.81	233.09
Kleibergen-Paap LM p-value		0.00	0.00	0.00
Kleibergen-Paap Wald rk F-stat (weak insts.)		2.55	2.51	2.34
Anderson-Rubin Wald test F-stat		1.68	1.68	1.69
Anderson-Rubin Wald test p-value		0.00	0.00	0.00

Conclusion

- ▶ Fairly robust evidence that exogenous increases in average income of destination markets has positive effect on input prices paid by Portuguese firms.
- ▶ Results consistent with simple quality model, difficult to reconcile with alternative models without quality.
- ▶ Suggest that income of export destination matters, through quality channel.
- ▶ Quality is not observed, so no smoking gun. But results add to accumulation of evidence that quality choices are an important dimension of firm behavior on international markets.

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Conferência

Apresentação dos artigos vencedores do prémio

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