

# State Aid and Export Competitiveness in the EU Mark II

Roman Stöllinger & Mario Holzner

*Vienna Institute for International Economic Studies (wiiw)*

*16<sup>th</sup> FIW Workshop*

*An Industrial Renaissance in Europe - Can it happen? Should it happen?*

*Vienna, 6 June 2014*

# Background and Motivation

---

- 'Return of industrial policy' (Wade, 2012)
- Low growth environment in Europe
- Changes in perception of the role of manufacturing in the economy
- New initiatives at the European level and in Member States
  - *An integrated industrial policy for the globalisation era. Putting Competitiveness and Sustainability at Centre Stage (European Commission, 2010)*
  - *A Stronger European Industry for Growth and Economic Recovery. Industrial Policy Communication Update, (European Commission, 2012)*
  - *A European Strategy for micro- and nanoelectronic components and systems (European Commission, 2013)*
  - *For a European industrial renaissance (European Commission, 2014)*

# Research questions

---

- Is there a relationship between state aid and export performance of the manufacturing sector in EU Member States?
  - *Subsidies can remedy market imperfections and improve export performance*
  - *Pervasive government failure renders subsidies (or industrial policy more generally) ineffective or even impairs export performance*
- Related question:
  - Does the quality of the government play a role?

## Related Literature

---

- *Aghion, Boulanger and Cohen (2011) Rethinking Industrial Policy (Bruegel)*
- *Gual and Jódar (2006) Vertical industrial policy in the EU: an empirical analysis of the effectiveness of state aid (EIB)*
- *Ades and Di Tella (1997) hold-up model of investment in which industrial policy is inductive to both investment and corruption*
- *Midelfart-Knarvik and Overman (2002) Delocation and European integration: is structural spending justified? (Economic Policy)*
- *Criscuolo et al. (2012) The Causal Effects of an Industrial Policy (NBER)*

## Data

---

- **European Commission State Aid Scoreboard:** *state aid*  
[http://ec.europa.eu/competition/state\\_aid/studies\\_reports/studies\\_reports.html](http://ec.europa.eu/competition/state_aid/studies_reports/studies_reports.html)
- **World Input-Output Database (WIOD):** *value added exports*  
<http://www.wiod.org/>
- **Eurostat:** *real exchange rate, labour costs*  
<http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes>
- **AMECO database:** *value added deflators*  
[http://ec.europa.eu/economy\\_finance/db\\_indicators/ameco/](http://ec.europa.eu/economy_finance/db_indicators/ameco/)
- **IMF WEO database:** *global GDP data*  
<http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx>
- **World Governance Indicators (WDI):** *government effectiveness*  
<http://info.worldbank.org/governance/wgi/index.asp>

## Notes on State Aid

---

- Institutional particularity in the EU
  - The COM is empowered to control and restrict state aid activities of MS
- What is state aid?
  - Specificity criterion
  - Aid provided by MS; excludes money from EU structural funds
  - Figures relate to the aid element contained in the aid measures
  - 'De-minimis aid' is not included in state aid data
  - Excludes crisis related aid (Temporary Framework 2008-2011)
- State aid in the EU is at historically low levels ( $\approx 0.5\%$  of GDP)
- Radical reform of state aid rules in the 'new' EU member states (Jovic, 2012)

## 'Manufacturing Aid' and Value Added Exports

---

- Value added exports (Johnson and Noguera, 2012)
  - A country's value added exports is the part of domestic value added that is produced to satisfy foreign final demand taking into account trade in intermediates.
- 'Manufacturing aid' includes
  - Specific aid to the manufacturing sector
  - R&D aid, SME aid, 'internationalisation aid'; risk capital aid; environmental aid; regional aid; employment aid and training aid

## 'Manufacturing Aid' in the EU, averages 1995-2011

aid to the manufacturing sector				
	in EUR mn	in % of total state aid	in % of GDP	in % of EU-wide manufacturing aid
DEU	13,878	73.6	0.60	29.9
ESP	3,396	62.0	0.36	7.3
FRA	6,457	62.2	0.36	13.9
GBR	2,646	82.4	0.17	5.7
ITA	6,382	90.5	0.41	13.8
<i>EU-15</i>	<i>41,887</i>	<i>74.6</i>	<i>0.40</i>	<i>90.3</i>
CZE	754	47.7	0.60	1.6
HUN	915	79.6	1.02	2.0
POL	1,454	60.4	0.54	3.1
<i>EU-12</i>	<i>4,283</i>	<i>63.3</i>	<i>0.56</i>	<i>9.2</i>
CYP	101	57.9	0.69	0.2
MLT	137	96.3	2.39	0.3
<i>CYP+MLT</i>	<i>238</i>	<i>75.2</i>	<i>1.17</i>	<i>0.5</i>
<b>EU-27</b>	<b>46,409</b>	<b>73.4</b>	<b>0.41</b>	<b>100.0</b>

## Econometric Model (1)

---

- Starting point is an export demand function for the manufacturing sector:

$$VAX = A \cdot (AID)^\beta \cdot (FX)^\varepsilon \cdot (GDP^*)^\eta \cdot (WAGE)^\omega \cdot (GOVEFF)^\phi$$

- Time series issues: unit root in the dependent variable and all explanatory variables except GDP\*
- Test for co-integration: unsuccessful due to short sample period (17 years)
- **model is estimated in first differences (removes non-stationarity)**

## Econometric Model (2)

---

- Based on the macroeconomic export function the following econometric specification is derived:

$$\Delta vax_{i,t} = \alpha + \beta \cdot \Delta aid_{i,t} + \gamma \cdot (\Delta aid_{i,t} \times EU10) + \varepsilon \cdot \Delta fx_{i,t} + \eta \cdot \Delta gdp_{i,t}^* + \omega \cdot \Delta wage_{i,t} + \phi \cdot \Delta goveff_{i,t} + \mu_i + \delta_t + \varepsilon_{i,t}$$

- Main interest is with the coefficients  $\beta$  and  $\gamma$
- Interaction term allows for differentiated effects of state aid on export performance between EU15 and EU-10

## Regression results

	Sample: EU-25			Sample: EU-15	Sample: EU-10
	Dependent variable: $\Delta vax$			Dependent variable: $\Delta vax$	
	(1)	(2)	(3)	(4)	(5)
$\Delta aid$	0.0161 (0.011)	0.0200 * (0.010)	0.0248 ** (0.011)	0.0250 * (0.012)	0.0160 (0.016)
$\Delta(aid \times EU-10)$		-0.0057 (0.019)	-0.0113 (0.018)		
EU-10			0.0382 *** (0.012)		
$\Delta fx$	-0.4365 *** (0.132)	-0.4388 *** (0.134)	-0.4849 *** (0.140)	-0.5064 ** (0.173)	-0.3098 (0.200)
$\Delta gdp^*$	0.2550 ** (0.108)	0.2544 ** (0.108)	0.2747 ** (0.127)	0.2301 (0.141)	0.1160 (0.118)
$\Delta wage$	0.2377 * (0.125)	0.2380 * (0.126)	0.2679 ** (0.125)	0.2506 (0.170)	0.0242 (0.179)
$\Delta goveff$	-0.0015 (0.162)	-0.0017 (0.162)	-0.0348 (0.155)	-0.1276 (0.150)	0.0213 (0.370)
country effects	yes	yes	no	yes	yes
time effects	yes	yes	yes	yes	yes
F-test	100.88	113.61	158.19	.	
$R^2$	0.516	0.516	0.560	0.607	0.555
$R^2$ -adj.			0.530		
$R^2$ -within	0.579	0.580		0.625	0.602
obs.	345	345	345	239	106

## Conclusions

---

- Causal claims on the relationship between manufacturing aid and export performance are difficult to make due to unavoidable policy endogeneity (see Rodrik, 2012)
- Differentiation between state aid regimes of EU-15 and ‘new’ EU-MS needs to be made
- Small positive ‘effect’ of state aid on export competitiveness in the EU. A noticeable impact on export growth would require a massive scaling-up of aid budgets
- A successful industrial policy strategy targeting export competitiveness of the manufacturing sector will require more than simply handing out subsidies to firms.

---

Thank you  
for your attention!

---