Outward Investments and Productivity

Evidence from European Regions

Davide Castellani*

Fabio Pieri†

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Online appendix

Empirical specification

This section illustrates the rationale of the specification proposed in Equation 1 in the text and estimated in our empirical exercise. We start by assuming a linear relation between regional productivity and the stock of outward and inward FDI, allowing for the possibility of a time lag of h periods.

$$y_{it} = \alpha + \beta k_{it} + \gamma OUT_{i,\tau}^{stock} + \lambda INW_{i,\tau}^{stock} + \eta_i + u_{it} \quad (1)$$

where y_{it} and k_{it} are the (log of) labour productivity and capital-labour ratio in region i at time t , $OUT_{i,\tau}^{stock}$ and $INW_{i,\tau}^{stock}$ are the stock of outward and inward FDI in region i at time $\tau = t - h$, η_i is a regional fixed-effect, and u_{it} is the error term.

By taking differences over time we can eliminate the regional fixed effect. It is convenient to take differences between t and τ , since it yields an equation where there is no overlap between the periods used to compute the growth rate of productivity and the change in the stock of outward and inward FDI. We denote this difference as Δ_{start}^{end} . The equation in differences looks as follows:

$$\Delta_{\tau}^t y_{it} = \beta \Delta_{\tau}^t k_{it} + \gamma \Delta_{\tau-h}^{\tau} OUT_{i,\tau}^{stock} + \lambda \Delta_{\tau-h}^{\tau} INW_{i,\tau}^{stock} + \Delta_{\tau}^t u_{it} \quad (2)$$

Due to the lack of information on FDI stocks, we need to assume that the number of outgoing and incoming investments projects, as recorded by fDi Markets, from/into each region over the period between $\tau - h$ and τ —which we denote as $OUT_{i,\tau-h \rightarrow \tau}$ and $INW_{i,\tau-h \rightarrow \tau}$ —can be a proxy for the change of the stocks of outward and inward FDIs, respectively, over the same period. This assumption is subject to two major criticisms. First, we do not allow any depreciation in the FDI stock. Second, we assume that all

*Department of Economics, University of Perugia, Via A. Pascoli 20, 06123 Perugia (Italy); Centro Studi Luca d'Agliano, Milan (Italy); Centre for Innovation, Research and Competence in the Learning Economy (CIRCLE), Lund (Sweden); davide.castellani@unipg.it

† *Corresponding author*: Departamento de Economía Aplicada, Universitat de Valencia, Avinguda dels Tarongers s/n, 46022, Valencia (Spain); fabio.pieri@uv.es

investments projects are of the same size, in terms of invested assets. As it is shown in Table 1, the correlation between FDI flows and the number of projects recorded by fDi Markets at the country level is remarkably high, so we believe the assumption may hold. Then, our specification becomes:

$$\Delta_{\tau}^t y_{it} = \beta \Delta_{\tau}^t k_{it} + \gamma OUT_{i,\tau-h \rightarrow \tau} + \lambda INW_{i,\tau-h \rightarrow \tau} + \Delta_{\tau}^t u_{it} \quad (3)$$

In order to make results comparable when using different h (as in the section reporting the performed robustness checks), we can take averages of $\Delta_{\tau}^t y_{it}$, $\Delta_{\tau}^t k_{it}$, $OUT_{i,\tau \rightarrow t}$ and $INW_{i,\tau \rightarrow t}$. We denote the averaged variables with an overline. As discussed in Section 3 in the text, we can augment Equation 3 with a constant (α), a vector of country fixed effect (η_j) and of regional characteristics at the beginning of the period ($\mathbf{z}_{i,\tau}$).

$$\Delta_{\tau}^t \bar{y}_{it} = \alpha + \beta \Delta_{\tau}^t \bar{k}_{it} + \gamma \overline{OUT}_{i,\tau-h \rightarrow \tau} + \lambda \overline{INW}_{i,\tau-h \rightarrow \tau} + \eta_j + \delta \mathbf{z}_{i,\tau} + \Delta_{\tau}^t u_{it} \quad (4)$$

For $h = 4$, given the time structure of our data, we are left with $t = 2011$, $\tau = 2007$ and $\tau - h = 2003$, which then yields Equation 1 in the text:

$$\Delta \bar{y}_{ij,2007-11} = \alpha + \beta \Delta \bar{k}_{ij,2007-11} + \gamma \overline{OUT}_{ij,2003-07} + \lambda \overline{INW}_{ij,2003-07} + \delta \mathbf{z}_{ij,2007} + \eta_j + \epsilon_{ij,2007-11}.$$

Physical capital-labor ratio

We have included a physical capital deepening term ($\Delta k_{ij,2007-11}$) in Equation 1 in the text as the rate of change of the physical capital-labor ratio, in order to control for changes in regional factor shares. The physical capital-labor ratio has been computed as the ratio of the regional physical capital stock to regional employment (in thousands of employees). The physical capital stock at the regional level, has been obtained applying the perpetual inventory method (PIM) to the series of gross fixed capital formation (GFCF) in the region (at constant 2005 prices in millions of euro) contained in the ERD database (last release, 2013). We followed the methodology proposed by HALL and MAIRESSE (1995), and the physical capital stock at the beginning of the first year has been defined as below:

$$K_{ij,t=1} = \frac{I_{ij,t=1}}{g_{ij} + \delta}, \quad (5)$$

where $I_{ij,t=1}$ is the value of GFCF observed in region i in the first year of the series¹, g_{ij} is the rate of growth of GFCF in the region from 1995-2002, and δ is depreciation rate which has been set equal to 7.5%². Physical capital stock in the second year and onward has been computed using the following formula:

$$K_{ij,t} = (1 - \delta) \cdot K_{ij,t-1} + I_{ij,t}. \quad (6)$$

The variable has been included in growth rates in the econometric analysis, $\Delta k_{ij,2007-11}$.

¹We start computing the physical capital stock series at 1995, even if in the econometric analysis we use the values from 2007 to 2011. The main motivation relates to the possibility of resting on more reliable values for the physical capital stock calculated as in the Equation 6.

²As robustness checks we also computed the physical capital stock assuming depreciation rate of 5% and 10%, and we did not register significantly different results.

Other regional characteristics

This paragraph provides details on how some of the additional regional characteristics contained in the $\mathbf{z}_{ij,2007}$ vector – i.e. the level of human capital, the stock of technological capital, the regional industrial mix and its degree of concentration/diversification, the regional employment density – have been built.

- The endowment of human capital ($HCAP_{ij,2007}$) has been proxied by the share of population aged 25 or more (in thousands of people) with tertiary-type education degree (ISCED 5-6) in each region. Information comes from the EURD dabase, maintained by Eurostat. The value has been included in log in the econometric analysis, $hcap_{ij,2007}$.
- The stock of technological capital ($tech_{ij,2007}$) has been proxied by the ratio of the stock of patent applications to the total population (in thousands of people) in the region. The stock —recovered using information on the number of patent applications from each European region to the European Patent Office (EPO), which is available in the EURD database, maintained by Eurostat³— has been computed as the sum of the patent applications in all sectors in the previous five years:

$$TECH_{ij,2007} = \sum_{t=2002}^{2007} PATAPP_{ij,t}. \quad (7)$$

The ratio has been included in log in the econometric analysis, $tech_{ij,2007}$.

- We have controlled for the degree of concentration/diversification of the regional industrial mix. Following the literature (see CINGANO and SCHIVARDI, 2004, among others), we have used the Herfindahl-Hirschman index computed as follows:

$$HHI_{ij,2007} = \sum_s SH_{sij,2007}^2 = \sum_s \left(\frac{Employment_{sij,2007}}{Employment_{ij,2007}} \right)^2, \quad (8)$$

where $SH_{sij,2007}$ are the employment shares in five broad sectors ‘s’ of the regional economy: (1) agriculture, hunting, forestry and fishing; (2) industry (energy and manufacturing); (3) construction; (4) non-market services; (5) distribution, transportation and commercial services; (6) financial services and other services. The HHI index is equal to ‘1’ for regions with all their employees concentrated in one sector and tends to ‘0’ in the case of more diversified regional structures. The $HHI_{ij,2007}$ enters in log in the econometric analysis, $hhi_{ij,2007}$.

- We calculate a measure of employment density $DENSITY_{ij,2007}$ as the ratio between total regional employment (in thousands of employees) over regional area (in square kilometers). $DENSITY_{ij,2007}$ enters in log in the econometric analysis, $density_{ij,2007}$.

³Data on patent applications are regionalized on the basis of investors’ residence: in the case of multiple investors proportional quotas have been attributed to each region.

- We have taken account of the regional industrial structure by introducing the share of employment in three broad sectors of the economy, i.e. Agriculture, Industry and Services. Each share has been computed in the following way:

$$share_{ij,2007}^{s*} = \frac{Employment_{s*ij,2007}}{Employment_{ij,2007}} \quad (9)$$

where where $s* = \{AGR, IND, SERV\}$ and $Employment_{ij,2007}$ and $Employment_{s*ij,2007}$ denote, respectively, total employment of the region i in country j (thousands of employees) and total employment in the $s*th$ sector of the regional economy (thousands of employees).

Correlation matrix

Table 1 provides the matrix of Pearson's correlation coefficients among the variables included in the econometric analysis.

List of regions

This paragraph provides the list of NUTS 2 regions which has been considered in the econometric analysis (Table 2).

Table 1: Correlation matrix

	Four-year (av.) Lab. prod. growth	Four-year (av.) Phys. cap. deepening	Inward FDIs	Outward FDIs	Outward FDIs man.	Outward FDIs sal.	Outward FDIs other	Human capital	Tech. capital	H-H index	Total pop.	Emp. density	Coastal region	Capital region	Obj. 1 region	Emp. share industry	Emp. share services
Four-year (av.) Labor prod. growth	1																
Four-year (av.) Physical capital deepening	0.3111	1															
Inward FDIs	0.1636	0.1416	1														
Outward FDIs	-0.0602	-0.0448	0.7594	1													
Outward FDIs - manufacturing	-0.1111	-0.0888	0.6124	0.9306	1												
Outward FDIs - sales	-0.0445	-0.0389	0.6917	0.9562	0.9023	1											
Outward FDIs - other	-0.0426	-0.0250	0.7961	0.9627	0.8283	0.8567	1										
Human capital	0.0794	-0.1491	0.2560	0.2953	0.2739	0.2809	0.2856	1									
Technological capital	-0.2395	-0.5066	0.0197	0.2816	0.3691	0.2934	0.2074	0.5387	1								
Herfindahl-Hirschman index	-0.2902	-0.1525	0.1105	0.2336	0.1826	0.2032	0.2540	0.2609	0.2462	1							
Total population	0.1429	-0.0350	0.4194	0.3444	0.3631	0.3812	0.2774	0.0543	0.0885	-0.0594	1						
Employment density	-0.0827	-0.2480	0.3704	0.4117	0.3702	0.3820	0.4101	0.2940	0.3377	0.3264	0.3746	1					
Coastal region	-0.0977	0.0879	-0.1232	-0.0748	-0.1050	-0.0414	-0.0770	0.0960	-0.0604	0.1183	-0.0882	-0.1736	1				
Capital region	0.1161	0.0613	0.5944	0.4081	0.3516	0.3544	0.4296	0.2813	0.0167	0.0914	0.1632	0.3454	0.0385	1			
Objective 1 region	0.2138	0.3755	-0.0146	-0.2282	-0.2778	-0.2337	-0.1802	-0.4693	-0.7604	-0.2919	-0.0239	-0.383	0.0213	-0.0105	1		
Employment share - industry	0.2482	0.1344	-0.1170	-0.2490	-0.1767	-0.2139	-0.2804	-0.5091	-0.2793	-0.5785	0.0954	-0.3316	-0.3030	-0.2178	0.3523	1	
Employment share - services	-0.2190	-0.4156	0.1487	0.2969	0.2675	0.2805	0.2920	0.6397	0.6693	0.5554	-0.0146	0.4894	0.2246	0.2391	-0.6039	-0.7542	1

Notes:

Variables regarding productivity growth and physical capital deepening are four-year averages over the period 2007-2011

Variables regarding foreign investments are averages over the period 2003-2007

Variables regarding control variables refer to year 2007

Table 2: List of the 262 regions considered, by country

NUTS	Name	Germany	Name	NUTS	Name	NUTS	Name
Austria							
AT11	Burgenland (A)		Stuttgart	IT03	Veneto		Castilla y León
AT12	Niederösterreich		Kärnten	IT04	Friuli-Venezia Giulia		Castilla-La Mancha
AT13	Wien		Freiburg	IT05	Emilia-Romagna		Extremadura
AT21	Kärnten		Tübingen	IT11	Toscana		Cataluña
AT22	Steiermark		Oberbayern	IT12	Umbria		Comunidad Valenciana
AT31	Oberösterreich		Niederbayern	IT13	Marche		Illes Balears
AT32	Salzburg		Oberpfalz	IT14	Lazio		Andalucía
AT33	Tirol		Oberfranken	IT15	Molise		Región de Murcia
AT34	Vorarlberg		Mittelfranken	IT16	Campânia		Canarias
Belgium			Unterfranken	IT17	Puglia	Sweden	
BE10	Brussels		Schweben	IT18	Basilicata	SE11	Stockholm
BE21	Prov. Antwerpen		Berlin	IT19	Calabria	SE12	Östra Mellansverige
BE22	Prov. Limburg (B)		Braunschw. Nordost	IT21	Sicilia	SE21	Småland med öarna
BE23	Prov. Ost-Vlaanderen		Baden-Württemberg-Südwest	IT22	Sardegna	SE22	Sydsverige
BE24	Prov. Vlaams Brabant		Bayern	Latvia		SE23	Västverige
BE25	Prov. West-Vlaanderen		Hamburg	LV00	Latvia	SE31	Norra Mellansverige
BE31	Prov. Brabant Wallon		Darmstadt	Lithuania		SE32	Norra Mellansverige
BE32	Prov. Flandre		Gießen	LT00	Lithuania	SE33	Östra Mellansverige
BE33	Prov. Hennegou		Kassel	Malta			Ovre Norrland
BE34	Prov. Limbourg (B)		Mecklenburg-Vorpommern	MT00	Malta		
BE35	Prov. Namur		Brandenburg	Poland			
Bulgaria			Brandenburg	PL11	Łódzkie		
BG31	Szeverimapsen		Brandenburg	PL12	Mazowieckie		
BG32	Szeverimapsen		Brandenburg	PL21	Mazowieckie		
BG33	Szeverimapsen		Brandenburg	PL22	Mazowieckie		
BG34	Szeverimapsen		Brandenburg	PL31	Mazowieckie		
BG41	Szeverimapsen		Brandenburg	PL32	Mazowieckie		
BG42	Szeverimapsen		Brandenburg	PL33	Mazowieckie		
Cyprus			Brandenburg	PL41	Mazowieckie		
CY00	Cyprus		Brandenburg	PL42	Mazowieckie		
Czech Republic			Brandenburg	PL43	Mazowieckie		
CZ01	Práha		Brandenburg	PL44	Mazowieckie		
CZ02	Středočeský územní útvar		Brandenburg	PL45	Mazowieckie		
CZ03	Jihomoravský územní útvar		Brandenburg	PL46	Mazowieckie		
CZ04	Středočeský územní útvar		Brandenburg	PL47	Mazowieckie		
CZ05	Středočeský územní útvar		Brandenburg	PL48	Mazowieckie		
CZ06	Středočeský územní útvar		Brandenburg	PL49	Mazowieckie		
CZ07	Středočeský územní útvar		Brandenburg	PL50	Mazowieckie		
CZ08	Středočeský územní útvar		Brandenburg	PL51	Mazowieckie		
Estonia			Brandenburg	PL52	Mazowieckie		
EE00	Estonia		Brandenburg	PL53	Mazowieckie		
Finland			Brandenburg	PL54	Mazowieckie		
FI10	Åland		Brandenburg	PL55	Mazowieckie		
FI11	Åland		Brandenburg	PL56	Mazowieckie		
FI12	Åland		Brandenburg	PL57	Mazowieckie		
FI13	Åland		Brandenburg	PL58	Mazowieckie		
FI14	Åland		Brandenburg	PL59	Mazowieckie		
FI15	Åland		Brandenburg	PL60	Mazowieckie		
FI16	Åland		Brandenburg	PL61	Mazowieckie		
FI17	Åland		Brandenburg	PL62	Mazowieckie		
FI18	Åland		Brandenburg	PL63	Mazowieckie		
FI19	Åland		Brandenburg	PL64	Mazowieckie		
FI20	Åland		Brandenburg	PL65	Mazowieckie		
France			Brandenburg	PL66	Mazowieckie		
FR10	Alsace		Brandenburg	PL67	Mazowieckie		
FR11	Alsace		Brandenburg	PL68	Mazowieckie		
FR12	Alsace		Brandenburg	PL69	Mazowieckie		
FR13	Alsace		Brandenburg	PL70	Mazowieckie		
FR14	Alsace		Brandenburg	PL71	Mazowieckie		
FR15	Alsace		Brandenburg	PL72	Mazowieckie		
FR16	Alsace		Brandenburg	PL73	Mazowieckie		
FR17	Alsace		Brandenburg	PL74	Mazowieckie		
FR18	Alsace		Brandenburg	PL75	Mazowieckie		
FR19	Alsace		Brandenburg	PL76	Mazowieckie		
FR20	Alsace		Brandenburg	PL77	Mazowieckie		
FR21	Alsace		Brandenburg	PL78	Mazowieckie		
FR22	Alsace		Brandenburg	PL79	Mazowieckie		
FR23	Alsace		Brandenburg	PL80	Mazowieckie		
FR24	Alsace		Brandenburg	PL81	Mazowieckie		
FR25	Alsace		Brandenburg	PL82	Mazowieckie		
FR26	Alsace		Brandenburg	PL83	Mazowieckie		
FR27	Alsace		Brandenburg	PL84	Mazowieckie		
FR28	Alsace		Brandenburg	PL85	Mazowieckie		
FR29	Alsace		Brandenburg	PL86	Mazowieckie		
FR30	Alsace		Brandenburg	PL87	Mazowieckie		
FR31	Alsace		Brandenburg	PL88	Mazowieckie		
FR32	Alsace		Brandenburg	PL89	Mazowieckie		
FR33	Alsace		Brandenburg	PL90	Mazowieckie		
FR34	Alsace		Brandenburg	PL91	Mazowieckie		
FR35	Alsace		Brandenburg	PL92	Mazowieckie		
FR36	Alsace		Brandenburg	PL93	Mazowieckie		
FR37	Alsace		Brandenburg	PL94	Mazowieckie		
FR38	Alsace		Brandenburg	PL95	Mazowieckie		
FR39	Alsace		Brandenburg	PL96	Mazowieckie		
FR40	Alsace		Brandenburg	PL97	Mazowieckie		
FR41	Alsace		Brandenburg	PL98	Mazowieckie		
FR42	Alsace		Brandenburg	PL99	Mazowieckie		
FR43	Alsace		Brandenburg	PL100	Mazowieckie		
FR44	Alsace		Brandenburg	PL101	Mazowieckie		
FR45	Alsace		Brandenburg	PL102	Mazowieckie		
FR46	Alsace		Brandenburg	PL103	Mazowieckie		
FR47	Alsace		Brandenburg	PL104	Mazowieckie		
FR48	Alsace		Brandenburg	PL105	Mazowieckie		
FR49	Alsace		Brandenburg	PL106	Mazowieckie		
FR50	Alsace		Brandenburg	PL107	Mazowieckie		
FR51	Alsace		Brandenburg	PL108	Mazowieckie		
FR52	Alsace		Brandenburg	PL109	Mazowieckie		
FR53	Alsace		Brandenburg	PL110	Mazowieckie		
FR54	Alsace		Brandenburg	PL111	Mazowieckie		
FR55	Alsace		Brandenburg	PL112	Mazowieckie		
FR56	Alsace		Brandenburg	PL113	Mazowieckie		
FR57	Alsace		Brandenburg	PL114	Mazowieckie		
FR58	Alsace		Brandenburg	PL115	Mazowieckie		
FR59	Alsace		Brandenburg	PL116	Mazowieckie		
FR60	Alsace		Brandenburg	PL117	Mazowieckie		
FR61	Alsace		Brandenburg	PL118	Mazowieckie		
FR62	Alsace		Brandenburg	PL119	Mazowieckie		
FR63	Alsace		Brandenburg	PL120	Mazowieckie		
FR64	Alsace		Brandenburg	PL121	Mazowieckie		
FR65	Alsace		Brandenburg	PL122	Mazowieckie		
FR66	Alsace		Brandenburg	PL123	Mazowieckie		
FR67	Alsace		Brandenburg	PL124	Mazowieckie		
FR68	Alsace		Brandenburg	PL125	Mazowieckie		
FR69	Alsace		Brandenburg	PL126	Mazowieckie		
FR70	Alsace		Brandenburg	PL127	Mazowieckie		
FR71	Alsace		Brandenburg	PL128	Mazowieckie		
FR72	Alsace		Brandenburg	PL129	Mazowieckie		
FR73	Alsace		Brandenburg	PL130	Mazowieckie		
FR74	Alsace		Brandenburg	PL131	Mazowieckie		
FR75	Alsace		Brandenburg	PL132	Mazowieckie		
FR76	Alsace		Brandenburg	PL133	Mazowieckie		
FR77	Alsace		Brandenburg	PL134	Mazowieckie		
FR78	Alsace		Brandenburg	PL135	Mazowieckie		
FR79	Alsace		Brandenburg	PL136	Mazowieckie		
FR80	Alsace		Brandenburg	PL137	Mazowieckie		
FR81	Alsace		Brandenburg	PL138	Mazowieckie		
FR82	Alsace		Brandenburg	PL139	Mazowieckie		
FR83	Alsace		Brandenburg	PL140	Mazowieckie		
Germany							
DE11	Stuttgart		Brandenburg	PL141	Mazowieckie		
DE12	Kärnten		Brandenburg	PL142	Mazowieckie		
DE13	Freiburg		Brandenburg	PL143	Mazowieckie		
DE14	Tübingen		Brandenburg	PL144	Mazowieckie		
DE15	Oberbayern		Brandenburg	PL145	Mazowieckie		
DE16	Niederbayern		Brandenburg	PL146	Mazowieckie		
DE17	Oberpfalz		Brandenburg	PL147	Mazowieckie		
DE18	Oberfranken		Brandenburg	PL148	Mazowieckie		
DE19	Mittelfranken		Brandenburg	PL149	Mazowieckie		
DE20	Unterfranken		Brandenburg	PL150	Mazowieckie		
DE21	Schweben		Brandenburg	PL151	Mazowieckie		
DE22	Berlin		Brandenburg	PL152	Mazowieckie		
DE23	Braunschw. Nordost		Brandenburg	PL153	Mazowieckie		
DE24	Braunschw. Südwest		Brandenburg	PL154	Mazowieckie		
DE25	Bayern		Brandenburg	PL155	Mazowieckie		
DE26	Hamburg		Brandenburg	PL156	Mazowieckie		
DE27	Darmstadt		Brandenburg	PL157	Mazowieckie		
DE28	Gießen		Brandenburg	PL158	Mazowieckie		
DE29	Kassel		Brandenburg	PL159	Mazowieckie		
DE30	Mecklenburg-Vorpommern		Brandenburg	PL160	Mazowieckie		
DE31	Brandenburg		Brandenburg	PL161	Mazowieckie		
DE32	Brandenburg		Brandenburg	PL162	Mazowieckie		
DE33	Brandenburg		Brandenburg	PL163	Mazowieckie		
DE34	Brandenburg		Brandenburg	PL164	Mazowieckie		
DE35	Brandenburg		Brandenburg	PL165	Mazowieckie		
DE36	Brandenburg		Brandenburg	PL166	Mazowieckie		
DE37	Brandenburg		Brandenburg	PL167	Mazowieckie		
DE38	Brandenburg		Brandenburg	PL168	Mazowieckie		
DE39	Brandenburg		Brandenburg	PL169	Mazowieckie		
DE40	Brandenburg		Brandenburg	PL170	Mazowieckie		
DE41	Brandenburg		Brandenburg	PL171	Mazowieckie		
DE42	Brandenburg		Brandenburg	PL172	Mazowieckie		
DE43	Brandenburg		Brandenburg	PL173	Mazowieckie		
DE44	Brandenburg		Brandenburg	PL174	Mazowieckie		
DE45	Brandenburg		Brandenburg	PL175	Mazowieckie		
DE46	Brandenburg		Brandenburg	PL176	Mazowieckie		
DE47	Brandenburg		Brandenburg	PL177	Mazowieckie		
DE48	Brandenburg		Brandenburg	PL178	Mazowieckie		
DE49	Brandenburg		Brandenburg	PL179	Mazowieckie		
DE50	Brandenburg		Brandenburg	PL180	Mazowieckie		
DE51	Brandenburg		Brandenburg	PL181	Mazowieckie		
DE52	Brandenburg		Brandenburg	PL182	Mazowieckie		
DE53	Brandenburg		Brandenburg	PL183	Mazowieckie		
DE54	Brandenburg		Brandenburg	PL184	Mazowieckie		
DE55	Brandenburg		Brandenburg	PL185	Mazowieckie		
DE56	Brandenburg		Brandenburg	PL186	Mazowieckie		
DE57	Brandenburg		Brandenburg	PL187	Mazowieckie		
DE58	Brandenburg		Brandenburg	PL188	Mazowieckie		
DE59	Brandenburg		Brandenburg	PL189	Mazowieckie		
DE60	Brandenburg		Brandenburg	PL190	Mazowieckie		
DE61	Brandenburg		Brandenburg	PL191	Mazowieckie		
DE62	Brandenburg		Brandenburg	PL192	Mazowieckie		
DE63	Brandenburg		Brandenburg	PL193	Mazowieckie		
DE64	Brandenburg		Brandenburg	PL194	Mazowieckie		
DE65	Brandenburg		Brandenburg	PL195	Mazowieckie		
DE66	Brandenburg		Brandenburg	PL196	Mazowieckie		
DE67	Brandenburg		Brandenburg	PL197	Mazowieckie		
DE68	Brandenburg		Brandenburg	PL198	Mazowieckie		
DE69	Brandenburg		Brandenburg	PL199	Mazowieckie		
DE70	Brandenburg		Brandenburg	PL200	Mazowieckie		
DE71	Brandenburg		Brandenburg	PL201	Mazowieckie		
DE72	Brandenburg		Brandenburg	PL202	Mazowieckie		
DE73	Brandenburg		Brandenburg	PL203	Mazowieckie		
DE74	Brandenburg		Brandenburg	PL204	Mazowieckie		
DE75	Brandenburg		Brandenburg	PL205	Mazowieckie		
DE76	Brandenburg		Brandenburg	PL206	Mazowieckie		
DE77	Brandenburg		Brandenburg	PL207	Mazowieckie		
DE78	Brandenburg		Brandenburg	PL208	Mazowieckie		
DE79	Brandenburg		Brandenburg	PL209	Mazowieckie		
DE80	Brandenburg		Brandenburg	PL210	Mazowieckie		
DE81	Brandenburg		Brandenburg	PL211	Mazowieckie		
DE82	Brandenburg		Brandenburg	PL212	Mazowieckie		
DE83	Brandenburg		Brandenburg	PL213	Mazowieckie		
DE84	Brandenburg		Brandenburg	PL214	Mazowieckie		
DE85	Brandenburg		Brandenburg	PL215	Mazowieckie		
DE86	Brandenburg		Brandenburg	PL216	Mazowieckie		
DE87	Brandenburg		Brandenburg	PL217	Mazowieckie		
DE88	Brandenburg		Brandenburg	PL218	Mazowieckie		
DE89	Brandenburg		Brandenburg	PL219	Mazowieckie		

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