International Trade:
Theory and Policy

Lecture 14

December, 2016

Instructor: Natalia Davidson
Lecture is prepared by Prof. Sergey Kadochnikov, Natalia Davidson

Topics 9-11. International economic integration. International production factor migration.

Lecture 13

1. International economic integration.

2. International production factor migration (labor, foreign direct investment [FDI], portfolio investment): theories and facts.

   2.1. Theorem on gains from international production factor migration.

   2.2. International production factor movement and international trade as substitutes and complements: Ricardo model and H-O-S model.

Lecture 14

3. Foreign direct investment (FDI).

   3.1. FDI: empirical evidence.

   3.2. OLI-paradigm and MNC strategies (John Dunning).

   3.3. The model of multi-plant firm: the choice between export and FDI (James Markusen).

   3.4. Transfer of knowledge capital through FDI (James Markusen).

   3.5. Example: FDI location choice in Russia.

(3.1.) FDI: empirical evidence
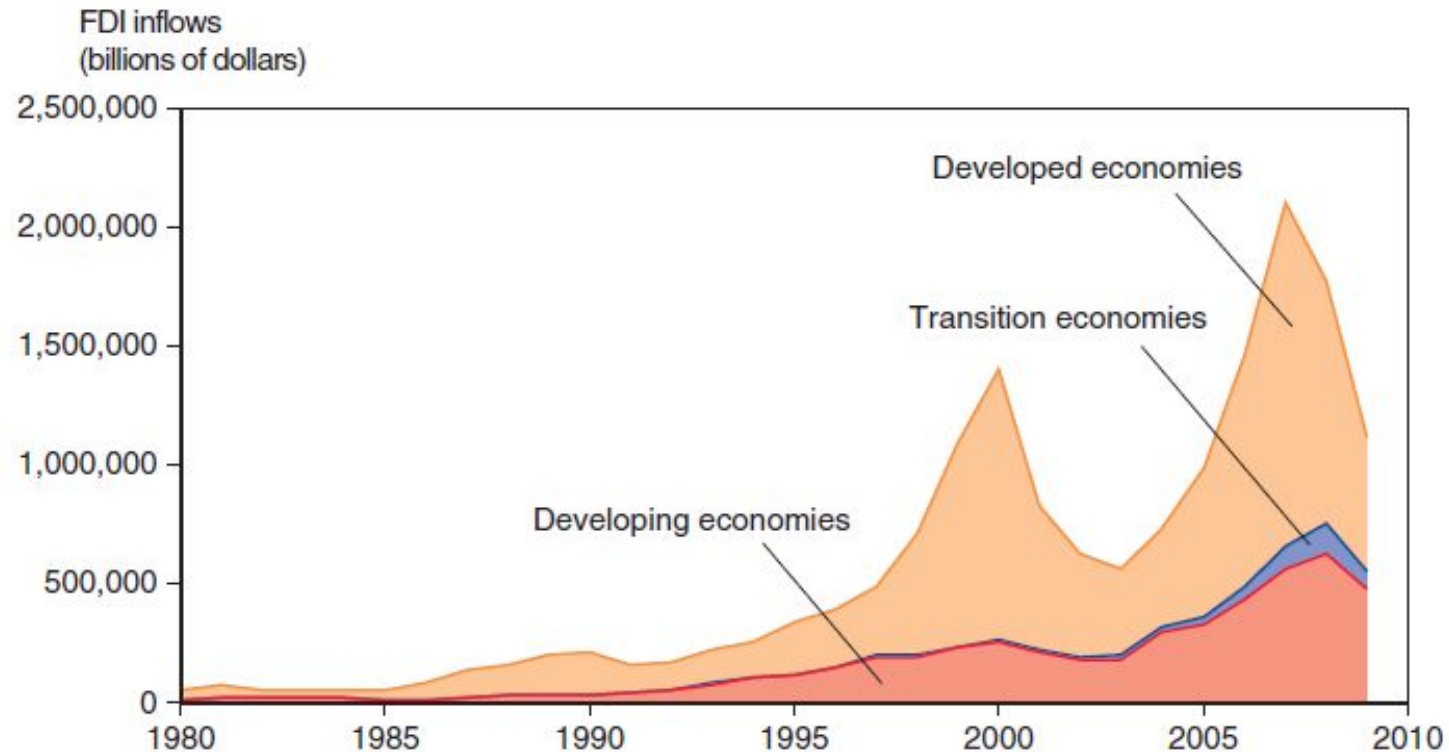
Figure 1: Inflow of Foreign Direct Investment, 1980-2009 (billions of dollars)
Source: Krugman et al., 2011, p. 181

The issues of FDI **determinants** and **effects** are of interest.

(3.1.) FDI: empirical evidence

FDI in transition countries of Central and Eastern Europe (CEEs) – comparison with the other countries

Table 1

FDI inflows to CEECs (as share of GDP, 1993-1999)

Regions	1993	1994	1995	1996	1997	1998	1999
CEEC*	1.87	1.68	3.23	2.24	3.17	3.78	4.37
Low Income Countries	1.32	1.23	2.05	2.48	3.06	3.39	2.98
Lower Middle Income Countries	3.02	3.32	4.65	6.05	3.13	3.81	3.50
Upper Middle Income Countries	2.29	3.28	3.70	3.90	4.94	5.22	6.10
High Income OECD Countries	1.47	1.62	1.88	1.75	2.16	3.98	5.63

Source: World Development Indicators (2002). Own computations.

* Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic, Slovenia.

Carstensen, K. and F. Toubal, (2004) Foreign direct investment in Central and Eastern European countries: a dynamic panel analysis, *Journal of Comparative Economics*, **32** (1), 3-22. – a paper on FDI determinants.

(a) What are the traditional determinants of FDI, and the determinants important for transition countries?
(b) Based on Table 1, compare dynamics of FDI inflow into CEEC countries (*страны Центральной и Восточной Европы, ЦВЕ*) and other regions of the world from 1993 to 1999.

(3.1.) FDI: empirical evidence

Enterprise performance: the role of foreign firms

Literature: theory and empirics

FDI: direct effects and productivity spillovers – horizontal, vertical and supply-backward ones (Smarzynska-Javorcik, 2004; Merlevede, Schoors, 2008).

FDI affects firm productivity, (financial) infrastructure, quality of labour force, variety of resources.

Size and sign of FDI effects vary with <u>distance between foreign subsidiary and national firm, time period of technology transfer, host country institutional and political characteristics, industry characteristics, MNC strategies, size, national firms' productivity and absorptive capacity, technological gap</u> (Borenzstein et al. 1998; Hall, Jones, 1999; Bekes et al. 2009; Damijan et al., 2013).

<u>**Example.**</u> **National firms' characteristics:** ability and motivation of national firms to absorb foreign technologies (Blomstrom and Kokko, 2003; Castelani, Pieri, 2010)

The nature and extent of these effects depend on motivation of multinational corporations (MNCs) associated with **MNCs strategies.** Why is it so?

(3.1.) FDI: empirical evidence

Enterprise performance: the role of foreign firms

Literature: empirics

FDI may enhance productivity in the industry; change in comparative advantage for a country / region (Crozet et al., 2004)

Firms with FDI - a source of positive localization externalities, while domestic firms - of negative ones (Bode et al. (2009) based on the USA states data for 1977-2003)

Firms in the developed countries have larger FDI spillovers, probably due to higher absorptive capacity (Smarzynska-Javorcik, 2004; Bode et al., 2009)

Transition countries

Beginning of transition: more evidence on positive vertical than horizontal spillovers (Merlevede and Schoors, 2008; Smarzynska-Javorcik, 2004; Stancik, 2007)

Later: positive horizontal spillovers, with growing importance during the recent ten years; negative horizontal spillovers – for smaller firms, low to medium productivity firms (Damijan et al., 2013)

Russia

Positive horizontal FDI effects in the Russian regions with diversified economic structure, and negative effects in specialized regions for the years 1999-2008 (Drapkin et al., 2011)

The role of FDI in Russia's accession to the World Trade Organization: crucial factors for the national welfare gains are FDI in business services and endogenous productivity effects generated by additional varieties of business services and goods (Rutherford and Tarr, 2008)

(3.2.) OLI-paradigm and MNC strategies (John Dunning)

OLI paradigm (John Dunning)

O – ownership advantages

L – location advantages

I – internalization advantages

The choice between exporting, licensing and FDI

(3.2.) OLI-paradigm and MNC strategies (John Dunning)

MNC strategies

Market seeking (*поиск рынка*)

Efficiency seeking (*поиск эффективности*)

Asset seeking (*поиск активов*)

Natural resources seeking (*поиск ресурсов*)

Modern MNCs:

Mixed strategies (a combination of the ones listed above)

Dunning J.H. Multinational enterprises and the global economy. Wokingham: Addison-Wesley, 1993. / Михайлова А.А. Роль ПЗИ в экономике стран-реципиентов// Экономическая наука современной России. – № 3 (46) 2009. – 84-93.

Wladimir Andreff. Lectures at the Faculty of Economics, Ural State University. 2009.

(3.3.) The model of multi-plant firm:
the choice between export an FDI (James Markusen)

The 'O' and 'L' advantages are modeled.

Assumptions:
1. Technologies with increasing returns to scale (IRS)
2. Two types of economies from scale:
   1) At the firm level.
   2) At the plant level.
3. Constant marginal costs.
4. Export is associated with transport costs.
5. Two countries: h, f (the firm considers a possibility of work in two countries).

The choice between export and FDI.

Derivations and conclusions of the model:
during the lecture

(3.4.) The model of multi-plant firm: transfer of knowledge capital through FDI (James Markusen)

Economies of multi-plant production arising from knowledge-based assets.

Figure 1: Firm and plant specific fixed costs
Source: Markusen et al. (1995), Ch. 22, p. 399.
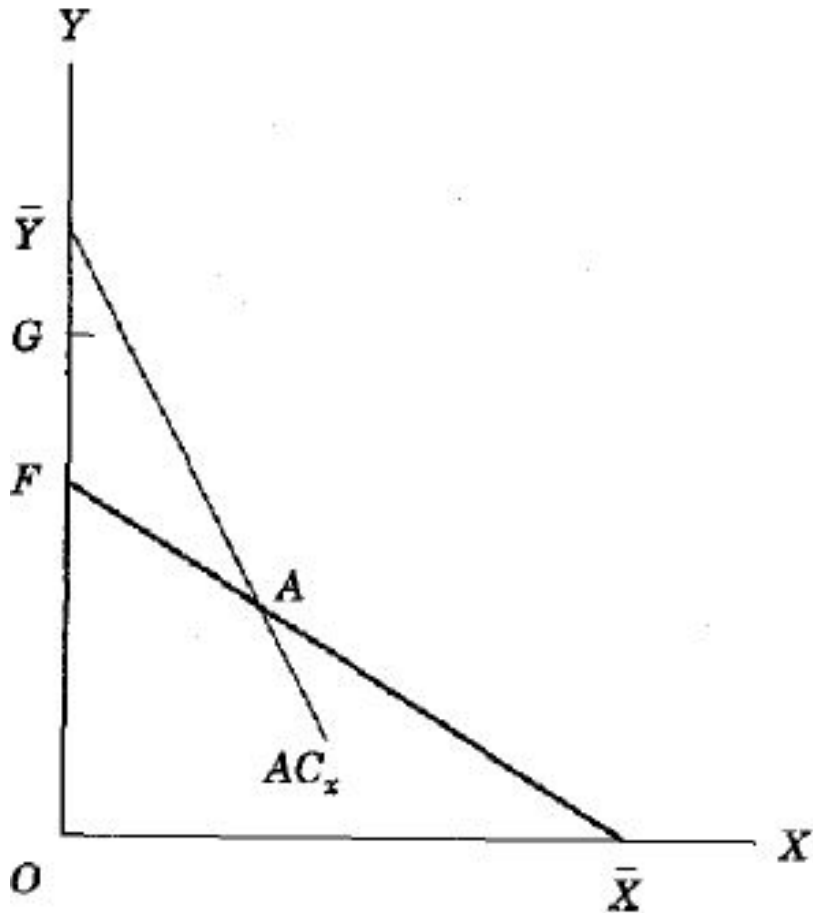
F – fixed costs on the firm level

G – fixed costs on the plant level

m - marginal costs - are constant

ACx – average costs on production of X.

Good X: Increasing returns to scale

(3.4.) The model of multi-plant firm: transfer of knowledge capital through FDI (James Markusen)
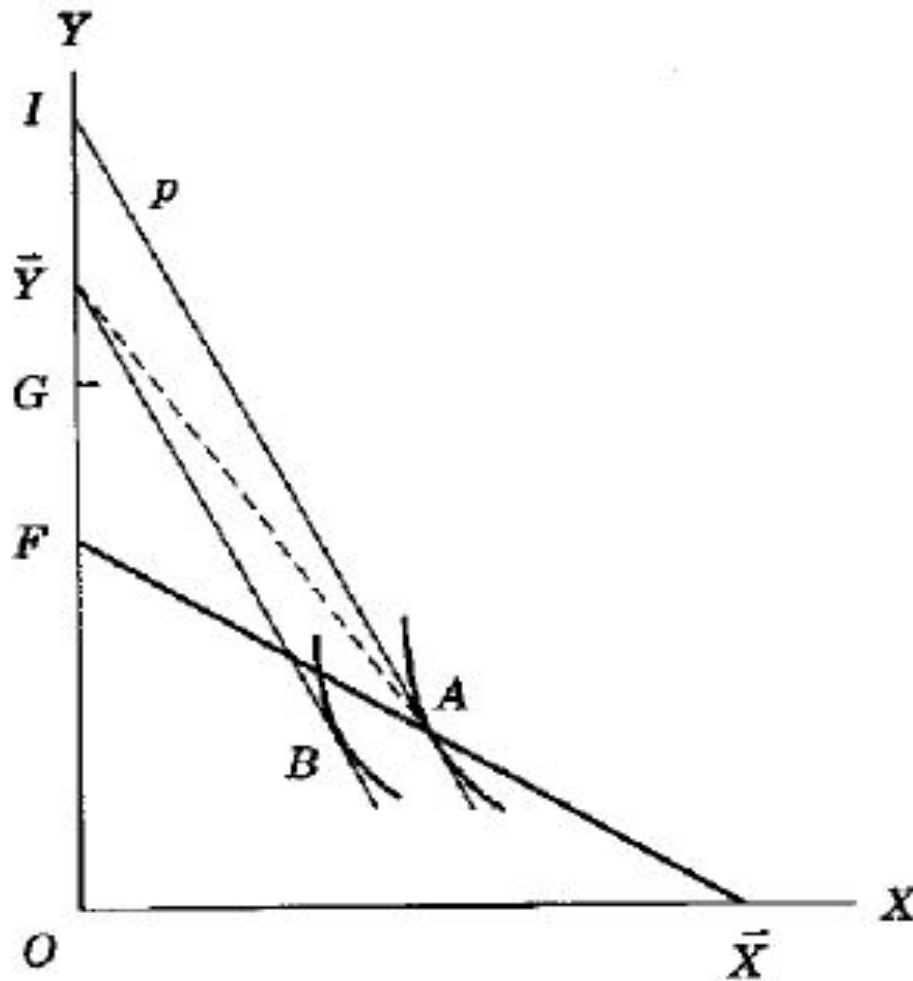

Figure 2: Host country welfare
Source: Markusen et al. (1995), Ch. 22, p. 401

'MNC has already invested F, so it starts production at point G, and the country's ppf extends.

MNC maximizes profit by producing at point B at price ratio p_m.
Point I is total GDP.
The amount YI is repatriated by MNC (profits).
YO –GNP of the domestic citizens, i.e. labor income.

For home country:
Trade-off between technology transfer and the cost of profit repatriation.

Total gains or losses depend on allocation of consumption point C compared to autarky consumption A.'

(3.4.) The model of multi-plant firm: transfer of knowledge capital through FDI (James Markusen)

Conclusions on the FDI effects

Conclusions based on the model considered above

FDI improves welfare in the host country if MNC sells at a price lower than average costs in autarky: $p_m < AC_x^a$, or lower than price of imported good: $p_m < p^*$.

MNC can repatriate or reinvest its profits; within the model considered above a country benefits from FDI if the MNC reinvests its profits.

Other ideas about FDI

FDI lead to GDP growth, but some production factor may loose because of production reallocation.

Among the important aspects are the impact of FDI on technological development and changes in such indicators as wage or income, employment, poverty level.
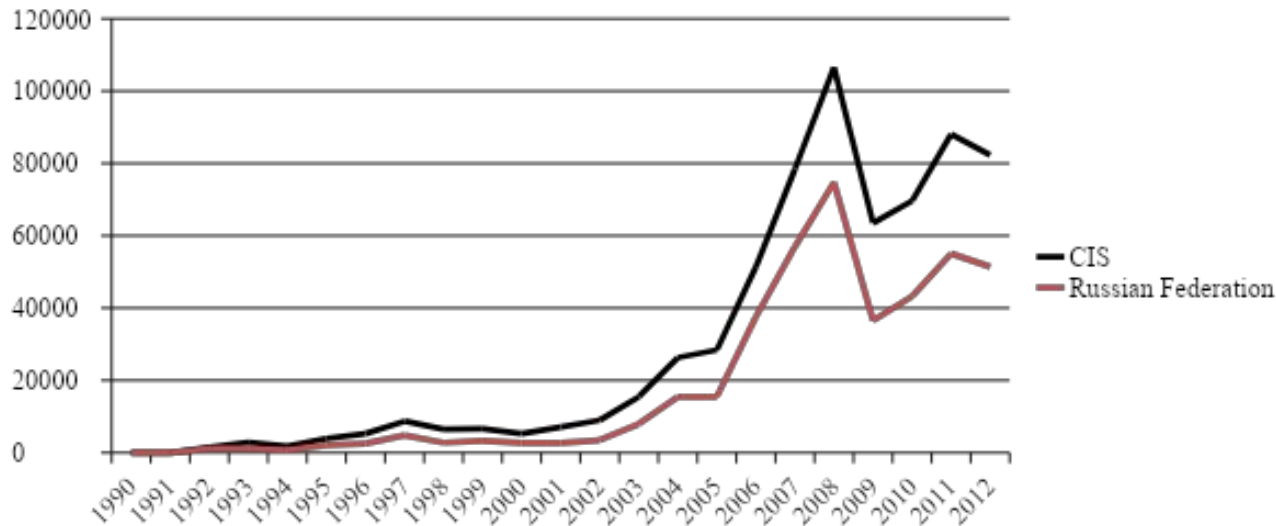
(3.5) Example: FDI location choice in Russia

Figure 3: FDI inflows in the Commonwealth of Independent States, including Russian Federation, 1990-2012
*Source: World Investment Report 2013: Annex Tables, UNCTAD*

FDI inward stock in Russia in 2000 was $32,204 mn; $423,150 mn in 2010; $457,474 mn in 2011. To compare, total FDI inward stock in all countries of the Commonwealth of Independent States (CIS), including Russia, was $55,159 mn in 2000, $611,418 mn in 2010 and $672,253 mn in 2011 (World Investment Report, UNCTAD, 2011 and 2012).

In 2009-2010 Russia ranked the 7th out of top 20 host economies in terms of global FDI inflows (UNCTAD, 2011)
However, Russia has the rank 108 out of 140 countries in the UNCTAD inward FDI performance index for 1999-2001; this index measures the amount of FDI relative to GDP (UNCTAD, 2003)
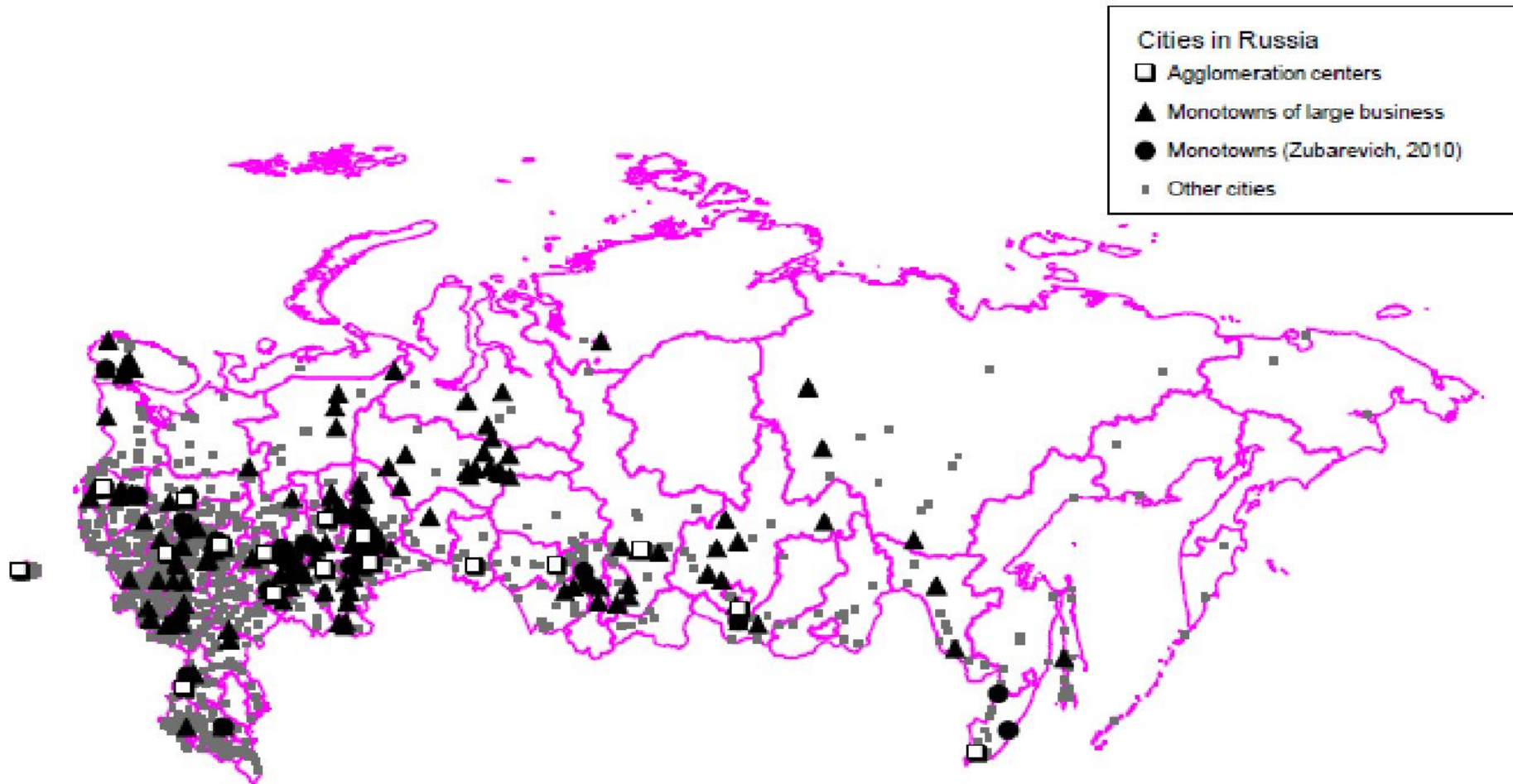
(3.5) Example: FDI location choice in Russia

Cities in Russia

Source: Davidson (2013)

List of agglomeration centers – 17 cities (Gonchar (2008), Vorobyev et al. (2010))

Lists of monotowns: Monotowns in Russia: how to survive crisis? *Institute for regional policy* (2008) , Zubarevich (2010)

(3.5) Example: FDI location choice in Russia
Cities in Russia

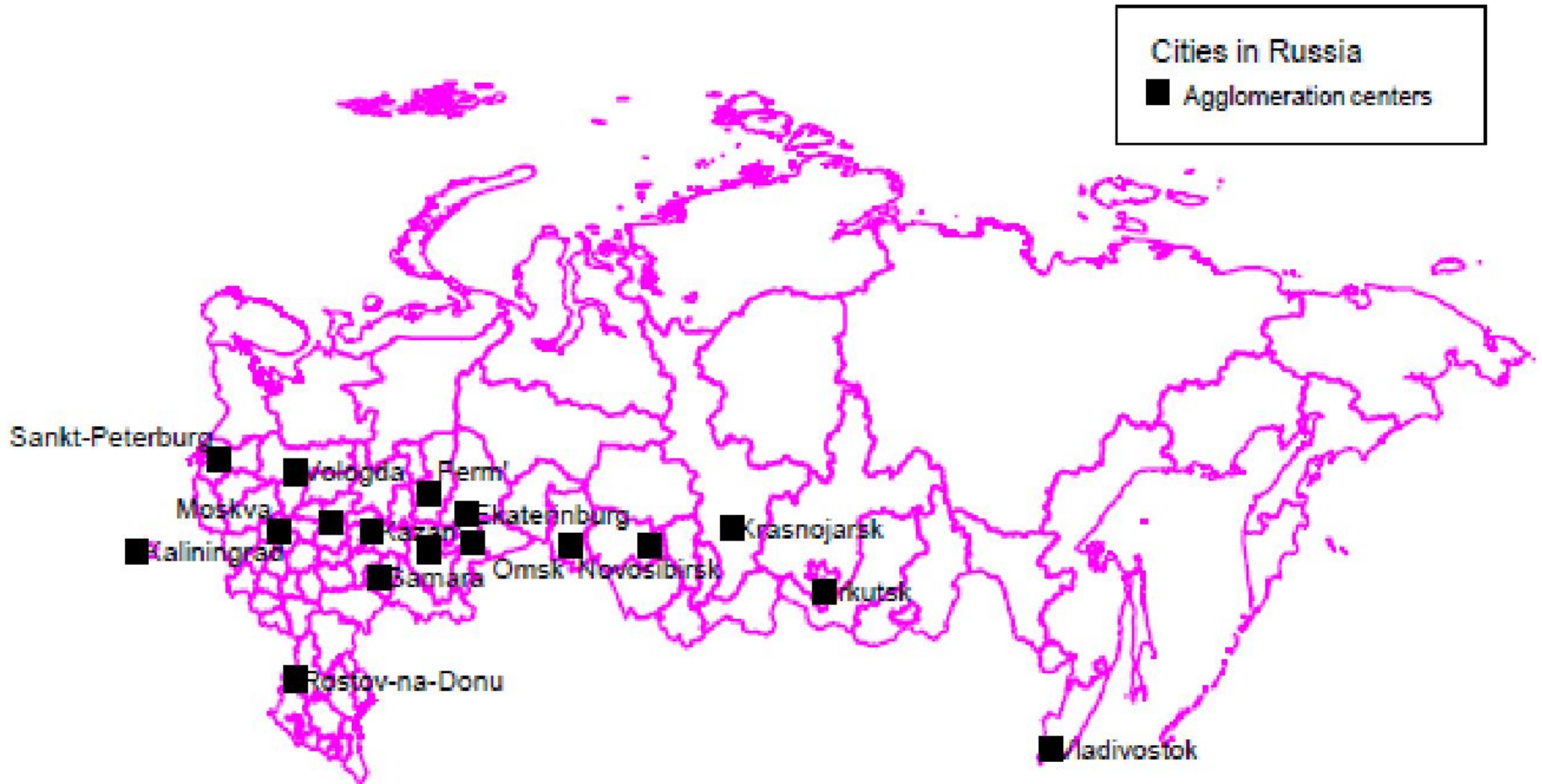**Cities in Russia**
■ Agglomeration centers

Source: Davidson (2013)

List of agglomeration centers – 17 cities (Gonchar (2008), Vorobyev et al. (2010))

Lists of monotowns: Monotowns in Russia: how to survive crisis? *Institute for regional policy* (2008) , Zubarevich (2010)

(3.5) Example: FDI location choice in Russia

Spatial distribution of FDI firms in the sample: FDI firms in the region as a percentage of the total number of foreign firms in the country.

Distribution of FDI firms in Russia
Regional share of the whole sample
- ■ >5%
- ■ 1 - 5%
- ■ 0.5 - 1%
- ■ 0.25 - 0.5%
- ■ 0.1 - 0.25%
- □ <0.1%

Source: Sample data, Greenfield and M&A investments are taken into account

Source: Gonchar, Marek (2013) Natural resource or market seeking FDI in Russia?... (data: 2000-2009)

ARCTIC OCEAN

BARENTS SEA

NORWAY
SWEDEN
FINLAND
OSLO
STOCKHOLM
HELSINKI
BALTIC SEA
ESTONIA
TALLINN
RIGA
LATVIA
LITHUANIA
Kaliningrad
VILNIUS
MINSK
BELARUS
POLAND
KYIV/KIEV
UKRAINE

Murmansk
MURMANSKAYA OBLAST'
Petrozavodsk
RESPUBLIKA KARELIYA
St Petersburg
Pskov
Velikiy Novgorod
Vologda
Tver
Yaroslavl'
Kostroma
MOSKVA/MOSCOW
Bryansk
Kaluga
Tula
Ryazan'
Vladimir
Ivanovo
Nizhniy Novgorod
Kursk
Belgorod
Lipetsk
Voronezh
Tambov
Saransk
Penza
Cheboksary
Yoshkar-Ola
Kazan
Izhevsk
Naberezhnyye Chelny
Ul'yanovsk
Simbirsk
Tol'yatti
Samara
Saratov
Volgograd
Rostov-na-Donu
Krasnodar
Maykop
Stavropol'
Cherkessk
Pyatigorsk
Nal'chik
Nazran'
Grozny
Makhachkala
Vladikavkaz
T'BILISI
GEORGIA
YEREVAN
ARMENIA
BAKU
AZERBAIJAN
CASPIAN SEA
BLACK SEA

ARKHANGEL'SKAYA OBLAST'
Arkhangel'sk
Nar'yan Mar
RESPUBLIKA KOMI
Syktyvkar
Salekhard
YAMALO-NENETSKIY AVTONOMNY OKRUG
KHANTY-MANSIYSKIY AVTONOMNY OKRUG
Khanty-Mansiysk
Perm'
Yekaterinburg
SVERDLOVSKAYA OBLAST'
Ufa
Chelyabinsk
Kurgan
Tyumen'
Orenburg
OMSKAYA OBLAST'
Omsk
Novosibirsk
Barnaul
ALTAYSKIY KRAY
Gorno-Altaysk
RESPUBLIKA ALTAY

Novaya Zemlya
KARSKOYE MORE / KARA SEA
Dudinka
TAYMYRSKIY AVTONOMYY OKRUG
EVENKIYSKIY AVTONOMYY OKRUG
Tura
TOMSKAYA OBLAST'
Tomsk
Kemerovo
Krasnoyarsk
Novokuznetsk
Abakan
KRASNOYARSKIY KRAY
Kyzyl
RESPUBLIKA BURYATIYA
Irkutsk
IRKUTSKAYA OBLAST'
Ust'-Ordynskiy
Ulan-Ude
Chita
CHITINSKAYA OBLAST'
Aginskoye

MORE LAPTEVYKH / LAPTEV SEA
VOSTOCHNO-SIBIRSKOYE MORE / EAST SIBERIAN SEA
RESPUBLIKA SAKHA-YAKUTIYA-
Yakutsk
MAGADANSKAYA OBLAST'
Magadan
OKHOTSKOYE MORE / SEA OF OKHOTSK
KHABAROVSKIY KRAY
AMURSKAYA OBLAST'
Blagoveshchensk
Khabarovsk
Birobidzhan
PRIMORSKIY KRAY
Vladivostok
SAKHALINSKAYA OBLAST'
Sakhalin
Yuzno-Sakhalinsk

CHUKOTSKIY AVTONOMYY OKRUG
Anadyr
KORYANSKIY AVTONOMYY OKRUG
Palana
KAMCHATKA OBLAST'
Petropavlovsk-Kamchatsky
BERING SEA
Chukchi Sea
Bering Strait
UNITED STATES OF AMERICA

KAZAKHSTAN
ASTANA
UZBEKISTAN
TASHKENT
BISHKEK
KYRGYZSTAN
DUSHANBE
TAJIKISTAN
TURKMENISTAN
ASHGABAT/ASHKHABAD
IRAN
TEHRAN
MONGOLIA
ULAANBAATAR/ULAN BATOR
CHINA
BEIJING/PEKING
NORTH KOREA
PYONGYANG
SOUTH KOREA
SEOUL
SEA OF JAPAN
Hokkaidō
Honshū
YELLOW SEA
EAST CHINA SEA
AFGHANISTAN

(3.5) Example: FDI location choice in Russia

Table 1: Distribution of FDI firms across sectors

Sectors	Entire period		Period 2000-2003		Period 2004-2009	
	Percentage	No. of obs	Percentage	No. of obs	Percentage	No. of obs
Industry	19.7	1,264	22.6	505	18.9	795
- extraction industry (Nace1 10-14)	0.8	51	0.9	20	0.7	31
- manufacturing (Nace1 15-37)	18.9	1,209	21.7	485	18.2	764
Services	80.3	5,140	77.4	1,729	81.1	3,411
- wholesale trade (Nace1 51)	45.5	2,911	42.3	946	46.7	1,965
- other services (Nace1 40-74 excl. 51)	35.9	2,299	35.0	783	34.9	1,466
Total	100	6,404	100	2,234	100	4,206

Source: Sample data. Only Greendfield investments. M&A excluded.

Source: Gonchar, Marek (2013) Natural resource or market seeking FDI in Russia?...

(3.5) Example: FDI location choice in Russia

Example 1: **automobile industry**

- Intermediate goods producers for automobile industry

Foreign producers of glass and of tires: from import to location in Russia

Source: Expert, September – December 2013

- Avtovaz (Public joint stock company): automobile brands Lada and Nissan. <u>Partner of Renault-Nissan Alliance (31.12.12: Renault s.a.s.: 25% of authorized capita; 26.03.13: Alliance Rostec Auto B.V. 74.51%)</u>. Production in Tolyatti and Izhevsk. About 20% of passenger cars market in Russia. Total number of employees is about 66,000. Avtovaz works in 46 countries.

  Avtovaz group works in more than 17 countries and contains 270 affiliates. It is involved in telecommunications, power engineering, construction, financial services and insurances.

Source: http://group.avtovaz.ru/; 2012 report.

Example 2: **Sverdlovsk region**

Over **400 joint ventures with foreign investment from 64 countries,** over 300 representative offices of foreign firms: Cyprus, Germany, USA, Great Britain etc

Companies: Philips, ABB, National Oilwell, Duferco, Lufthansa, Coca-cola, Pepsi, Henkei, Wrengley's, Ford, Audi, Volvo and others

Companies with100% of foreign capital: 'Pepsi International Bottlers ltd.', 'VIZ-Steel ltd', and others

Source: Information agency http://polpred.com/?cnt=195&fo=5&obl=58&dsc=1

Homework

Start revising for the exam.

Office hours: Upon agreement (i.e. if you need additional consultation, tell me, please)

E-mail: natalya.davidson@gmail.com (Наталья Борисовна Давидсон)

Thank you!