

Appendix: Lessons from Productivity Comparisons of Germany, Japan, and the United States

Table A1: Total Factor Productivity Growth by Industry, US, Japan, and Germany

<i>Average annual rate of change</i>	United States				Japan				Germany			
	1991-1995	1995-2004	2004-2016	1991-2016	1991-1995	1995-2004	2004-2016	1991-2016	1991-1995	1995-2004	2004-2016	1991-2016
Agriculture, forestry and fishing	0.6	5.1	1.6	2.7	-	0.5	1.6	1.1*	-8.9	5.2	-2.4	-0.7
Mining and quarrying	6.2	-0.4	2.6	2.1	-8.8	3.0	-7.6	-4.0	4.7	-0.8	1.4	1.1
Manufacturing	3.1	4.4	0.7	2.4	0.1	2.0	1.8	1.6	1.4	2.5	1.9	2.0
Utilities	0.7	-0.8	-1.2	-0.8	-1.6	0.8	-3.3	-1.6	-1.5	1.7	1.2	1.0
Construction	0.1	-2.0	-1.7	-1.5	-	-1.2	0.9	0.0*	-1.8	0.2	0.3	-0.1
Wholesale and retail trade	3.1	4.0	0.6	2.2	4.2	1.7	0.0	1.3	-0.7	2.4	1.4	1.4
Transportation and storage	1.9	1.3	-0.2	0.7	0.6	-0.5	-0.8	-0.5	2.3	2.2	0.2	1.3
Information and communication	1.3	2.7	2.9	2.5	5.0	4.3	0.3	2.5	3.8	5.5	3.6	4.3
Financial and insurance activities	0.4	2.5	0.8	1.4	-1.3	-2.2	0.3	-0.9	-0.1	-2.5	1.1	-0.4
Real estate	1.3	-0.2	1.3	0.8	-	0.2	1.6	1.0*	3.3	1.1	0.3	1.1
Professional, scientific and technical activities; administrative and support service activities	-1.0	0.1	0.3	0.0	1.1	2.7	1.4	1.8	0.9	-2.6	-1.1	-1.3
Community, social and personal services	-0.6	-0.3	0.0	-0.2	-1.4	-0.5	-0.3	-0.6	1.6	0.4	0.4	0.6
Non-agriculture Business Sector excluding Real estate	2.0	2.6	0.5	1.5	0.2	1.2	0.7	0.8	0.2	1.3	1.1	1.0

Source: Calculations based on OECD Structural Analysis statistics (STAN).
Note: *1995-2016 for starred industries in Japan.

Table A2: Manufacturing Industries Total Factor Productivity Growth by Timeframe

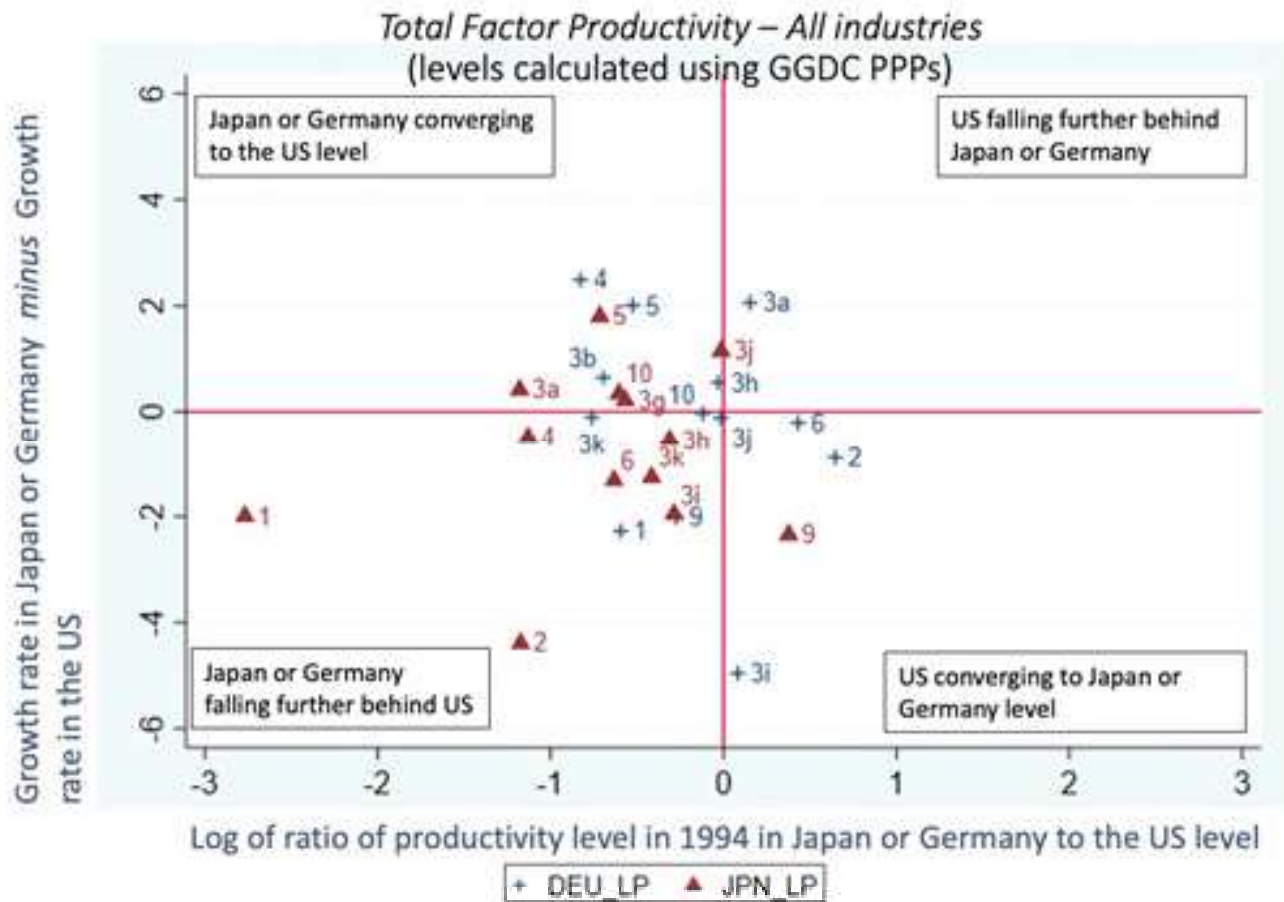
<i>Average annual rate of change</i>	United States				Japan			Germany			
	1991-1995	1995-2004	2004-2016	1991-2016	1995-2004	2004-2016	1995-2016	1991-1995	1995-2004	2004-2015	1991-2015
Food, beverages and tobacco	4.6	-0.8	-0.1	0.4	-0.1	0.0	0.0	-0.9	-0.5	1.7	0.4
Textiles, wearing apparel, leather and related	3.5	4.2	1.2	2.6	-0.5	0.3	-0.1	5.8	3.4	0.9	2.6
Wood and paper, and printing [†]	-3.1	2.2	1.3	0.9	0.6	0.1	0.3	2.3	2.7	2.3	2.5
Coke and refined petroleum	5.1	13.2	-1.0	5.1	-0.3	-0.9	-0.6	-	-	-	-
Chemical and pharmaceuticals	3.0	3.9	0.9	2.3	2.5	1.5	1.9	8.1	4.7	0.9	3.5
Rubber and plastics	1.4	4.7	0.3	2.0	-	-	-	4.5	2.3	1.3	2.2
Other non-metallic minerals	3.1	2.0	-0.1	1.2	2.7	-0.3	1.0				
Basic metals and fabricated metal products	2.3	2.7	0.4	1.6	0.9	0.3	0.5	3.2	2.4	0.7	1.8
Electrical, electronic and optical equipment	14.6	15.5	6.9	11.2	10.4	7.3	8.7	3.7	5.6	3.7	4.4
Machinery and equipment n.e.c.	0.1	2.0	0.5	1.0	1.8	3.1	2.6	3.9	1.6	-0.7	0.9
Transport equipment	0.2	4.1	2.3	2.6	2.1	0.5	1.1	1.3	1.4	4.5	2.8
Furniture; other manufacturing	0.7	3.7	1.3	2.1	-	-	-	2.0	3.4	0.7	1.9
Manufacturing	3.6	6.1	1.9	3.7	3.3	2.4	2.8	3.2	2.9	1.9	2.5

Source: Calculations based on OECD Structural Analysis statistics (STAN).
Note: †Paper and paper products for Japan.

**Table A3: JNS Industry Labels for
Chart 3**

Industry	Industry Name
1	Agriculture, Forestry, Fishery
2	Mining
3	Construction
4	Foods
5	Textile
6	Apparel and Leather Products
7	Woods and Related Products
8	Furniture and Fixture
9	Paper and Pulp
10	Printing and Publishing
11	Chemical Products
13	Stone, Clay, Glass
14	Primary Metal
15	Metal Products
16	Machinery
17	Computer and Electronic Products
18	Other Electric Machinery
19	Motor Vehicles
20	Other Transportation Equipment
21	Miscellaneous Manufacturing
22	Rail Transportation
23	Water Transportation
24	Air Transportation
25	Road Transportation
26	Other Trans and Storage
27	Communications
29	Wholesale and Retail
30	Finance and Insurance

Chart 1: Industry Productivity Growth Differentials (1995-2016) against Productivity Levels (1994) Relative to the United States. Japan and Germany, all industries, total factor productivity.



Source: Calculations based on GGDC PPPs and OECD STAN data.

Note: Major industry labels in Table 3. Manufacturing industry labels (subpart 3) in Table 4.