

HUMAN CAPITAL OF PLOVDIV

Demographics

Education System

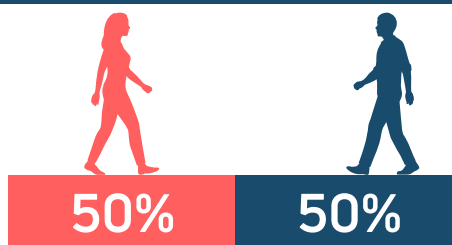
Labor Supply

Wages in Manufacturing

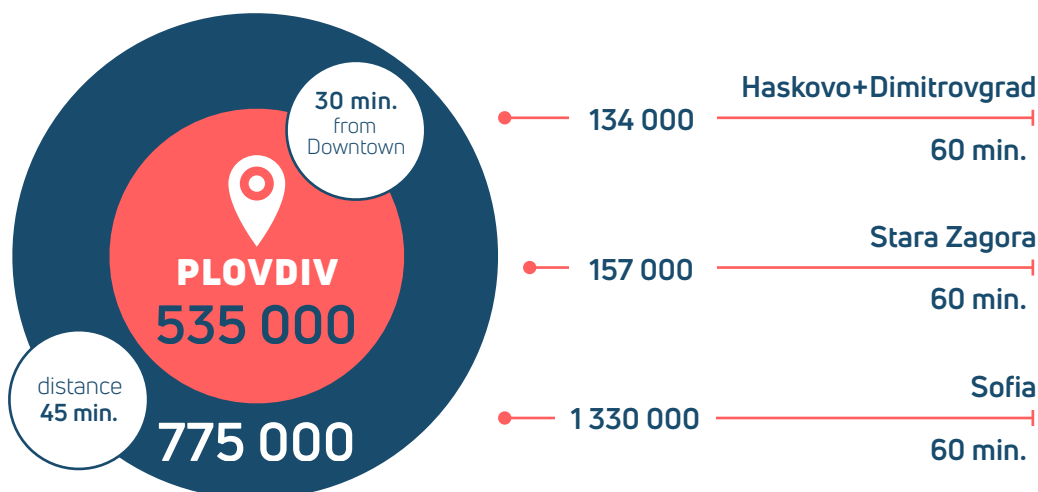
DEMOGRAPHICS

Population in the city of Plovdiv is marking steady growth since 2012, reaching 347 000 people in 2018. Almost two-thirds of them are aged 20-64 years. With its strategic location and good transport connectivity, the city and its industrial zones are accessible in less than 45 minutes by additional 428 000 people. More than half of them are in working age.

POPULATION IN WORKING AGE IN WIDER PLOVDIV REGION



POPULATION STRUCTURE IN WIDER PLOVDIV REGION (distance 45 min.)



POPULATION IN WIDER PLOVDIV

(distance 45 min.)

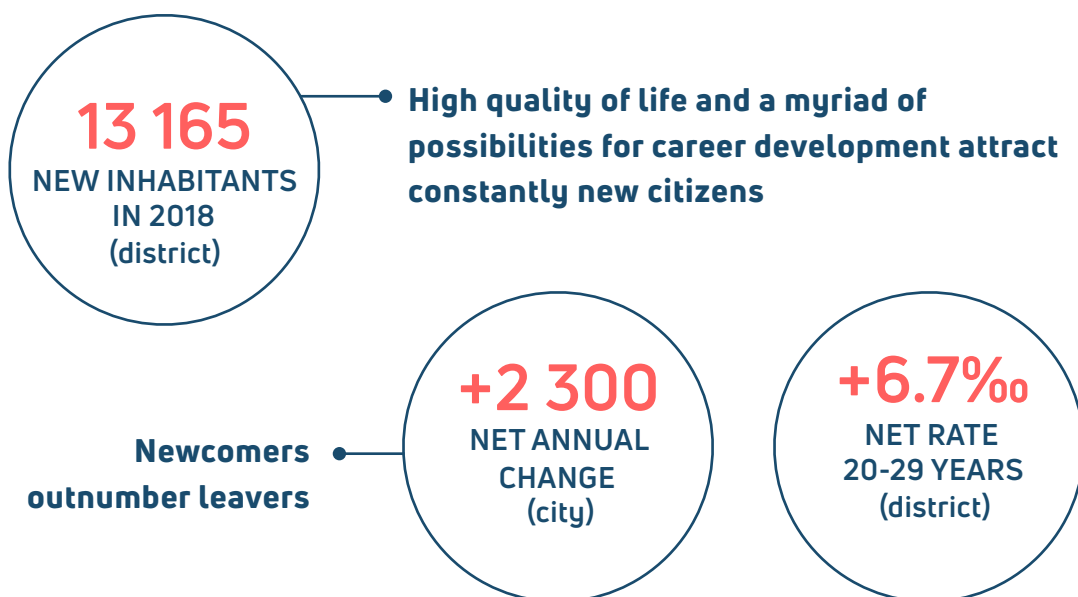
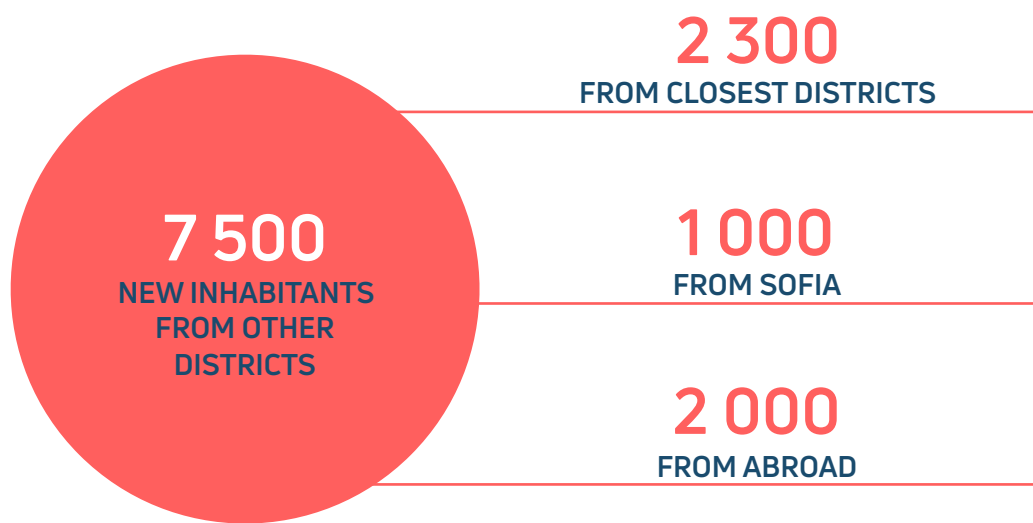
AGE	UNDER 20	20 – 44	45 – 64	65 – 74	75 +
NUMBER	151,000	251,000	212,000	91,000	70,000
SHARE OF TOTAL	20%	32%	27%	12%	9%

Source: NSI, 2018

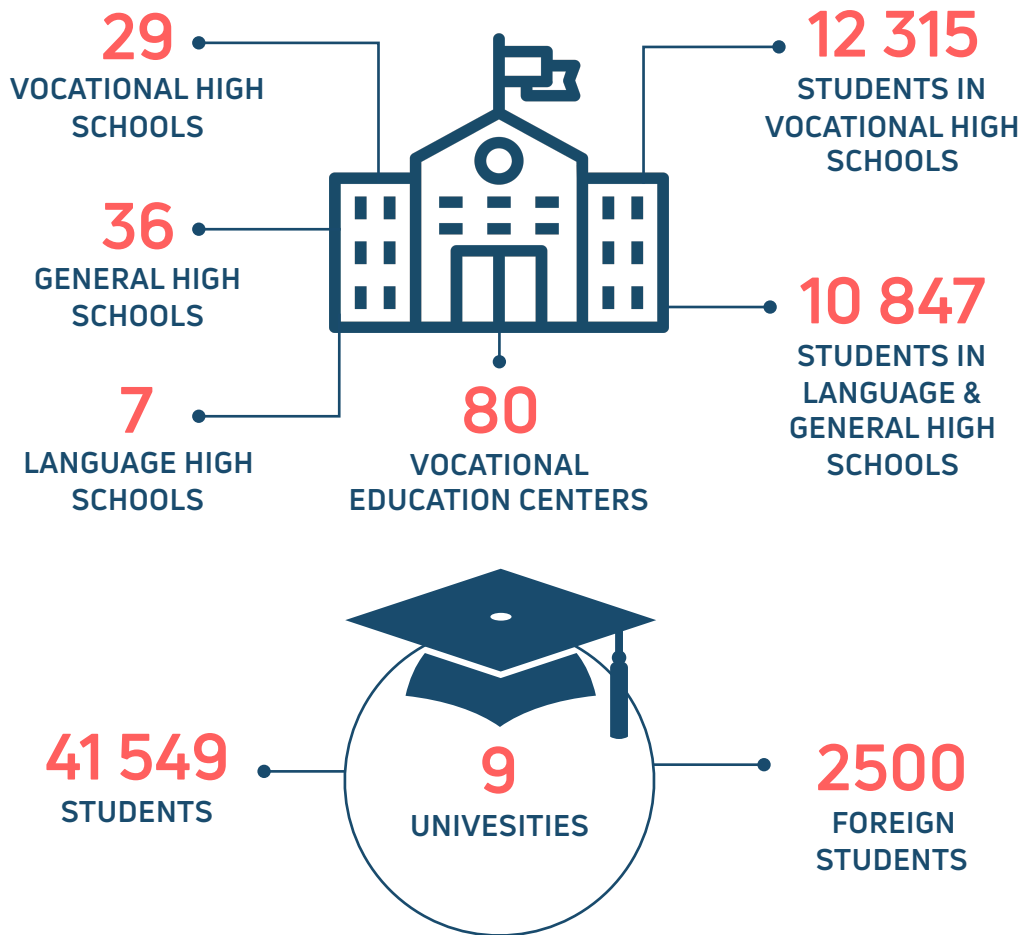
In recent years, the demographic replacement rate (ratio of persons entering working age to persons leaving working age) in Plovdiv district is on the rise. In 2018 it reached 67.8%, which is one of the highest in the country.

High quality of life and a myriad of possibilities for career development attract constantly new citizens. For the last 7 years, both the city and the district see a positive net migration – newcomers

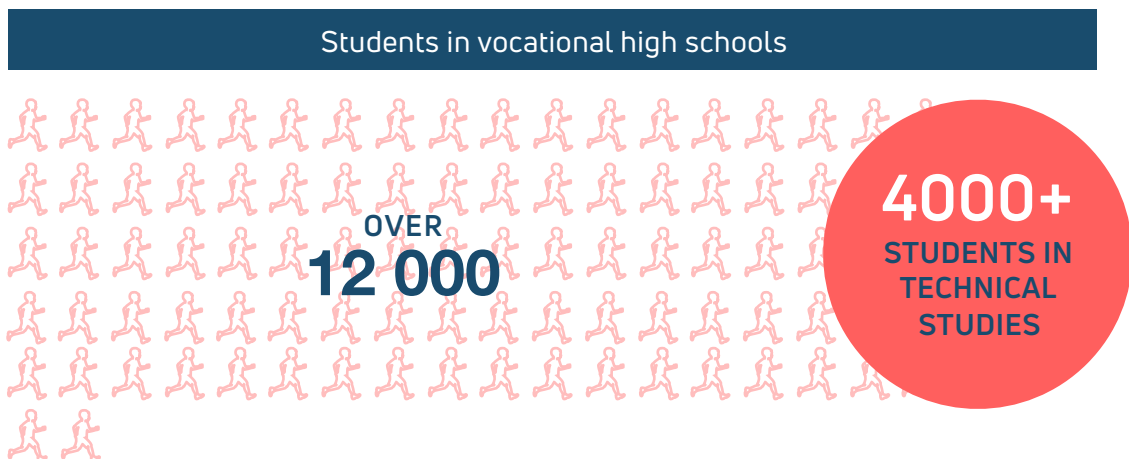
outnumber leavers - while nation-wide figures are negative. Plovdiv is particularly attractive for high-school and university students, as well as for young professionals, with high positive net migration rate in the age group 10-29 years. The number of expats and Bulgarians returning from abroad grows steadily and since 2017 Plovdiv district sees a positive net migration vis-à-vis other countries.



EDUCATION SYSTEM



Source: Plovdiv Municipality based on data from universities, NSI, NAVET, data on district level for 2018



Source: Plovdiv Municipality 2018/2019

Fastest growing technical studies in high schools:

ELECTRICIAN

ELECTRONICS
TECHNICIAN

MECHANICAL
TECHNICIAN

COMPUTER
SYSTEMS
TECHNICIAN

Major fields by number of enrolled students

Business Services	7,652
Engineering and technical studies	5,402
Food technologies and Agricultural studies	4,900
Natural Sciences	1,896

Source: Plovdiv Municipality based on data from universities, data on district level for 2018



Source: NSI, data on district level for 2017

Top 5 biggest universities in Plovdiv

UNIVERSITY	NUMBER OF STUDENTS	MAJOR FIELDS
Plovdiv University	25211	Informatics and Computer Science; Business services; Language studies
Medical University of Plovdiv	5311	Medicine and dental medicine; Healthcare
Agricultural University Plovdiv	4324	Agronomy; Plant protection
University of food technologies	2867	Food and beverages technologies; Machine building
Technical University Sofia - branch Plovdiv	2019	Electronics and Automation; Mechanical Engineering

Source: Plovdiv Municipality based on data from universities, data on district level for 2018

University students in technical studies	
Information Technologies	1975
Communication & Computer Technologies	849
Mechanical Engineering	843
Electrical Engineering, Electronics & Automation	678
General Engineering	553
Transport, Navigation & Aviation	260
Energy Studies	244
TOTAL NUMBER OF STUDENTS	

Source: Plovdiv Municipality based on data from universities, data on district level for 2018

LABOR SUPPLY

Plovdiv district has a robust labor market that continues to expand in recent years. Just in 2017, its labor market marked growth with 37 000 people – more than any other region in the country. As of 2018, its labor force consists of over 310 000 people.

In terms of employment, Plovdiv has a strong industrial profile. There are approximately 75 000 jobs in the manufacturing sector, which constitute 1/3 of all employed in Plovdiv district. Plovdiv is also the region with most people working in manufacturing companies in Bulgaria.

Vibrant medium-technology cluster has formed in the industrial zones around Plovdiv, employing more than half of the local industrial workers. This includes many auto suppliers, as well as other producers of machinery, metal, electrical and plastics products. The labor force is specialized but nevertheless readily adaptable to the demands of the automotive producers and suppliers.

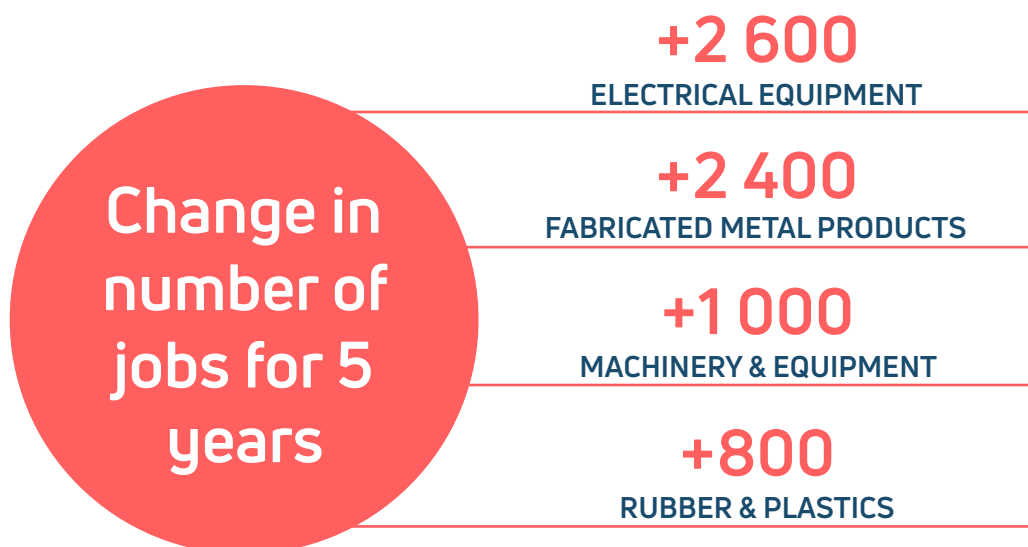
EMPLOYMENT IN MEDIUM-TECH SECTORS

FABRICATED METAL PRODUCTS	11 000
ELECTRICAL EQUIPMENT	6 400
RUBBER & PLASTICS	6 100
MACHINERY & EQUIPMENT	5 400
CHEMICAL PRODUCTS	2 700
BASIC METALS	2 300
GLASS & MINERAL PRODUCTS	2 000
REPAIR & INSTALLATION OF MACHINERY	1 700
TRANSPORT EQUIPMENT	1 600

+ 1 500

**IN HIGH-TECH PRODUCTION OF
COMPUTER, OPTICS &
ELECTRONICS**

Source: NSI, 2017



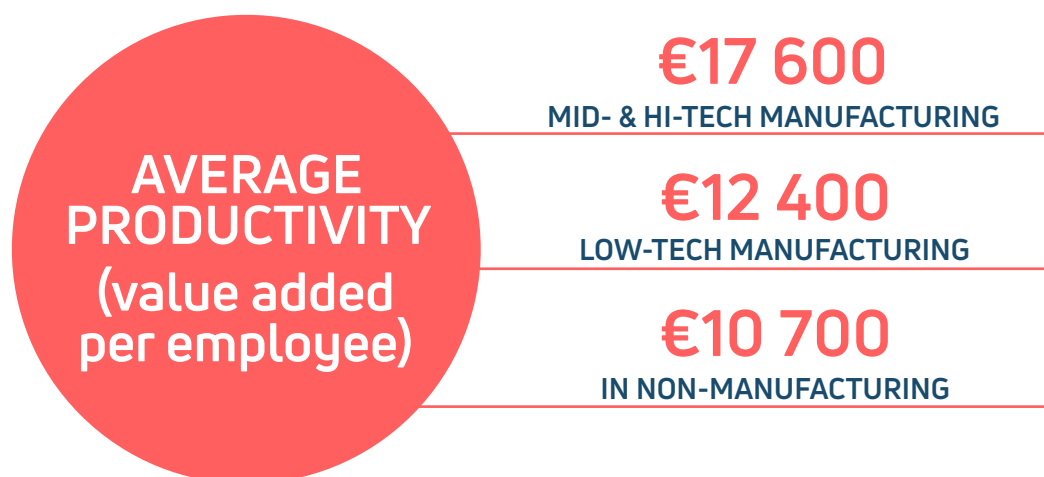
Source: NSI, 2012-2017

Automotive producers that choose Plovdiv as their investment destination have also access to human capital, consisting of well-prepared workers from other sectors of the economy, with lower added value and labor productivity. The average productivity (value added per employee) in the medium-tech cluster is €17 400, compared to €12 400 in low-tech sectors and €10 700 in non-manufacturing. Despite high activity rate and low unemployment, automotive companies will manage to attract human capital from the wider Plovdiv area and other districts, as well as to mobilize economically inactive population.

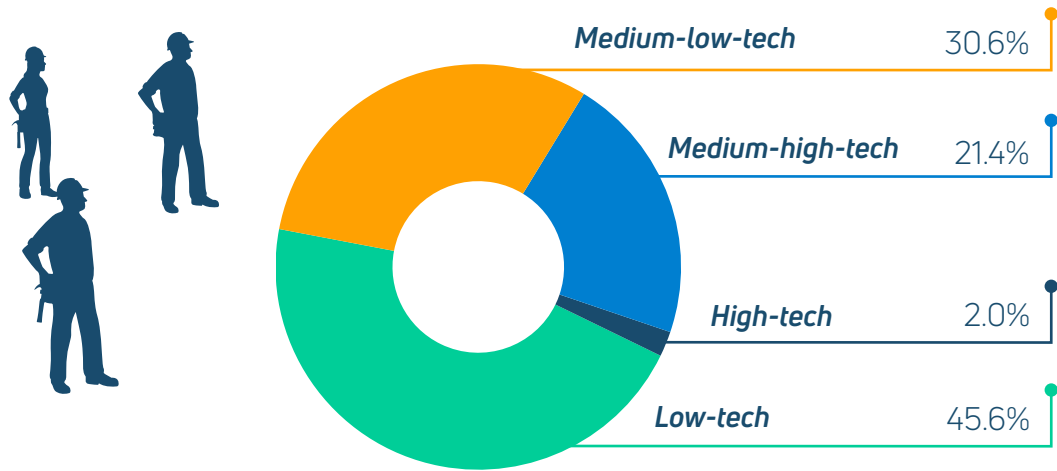
OPPORTUNITIES FOR ATTRACTING HUMAN CAPITAL

NON-MANUFACTURING EMPLOYMENT	145 000
ECONOMICALLY INACTIVE (15-64 YEARS)	115 000
FREELANCERS & SEASONAL WORKERS	96 000
LOW-TECH MANUFACTURING EMPLOYMENT	35 000
UNEMPLOYED (15-64 YEARS)	15 000

Source: NSI, 2017



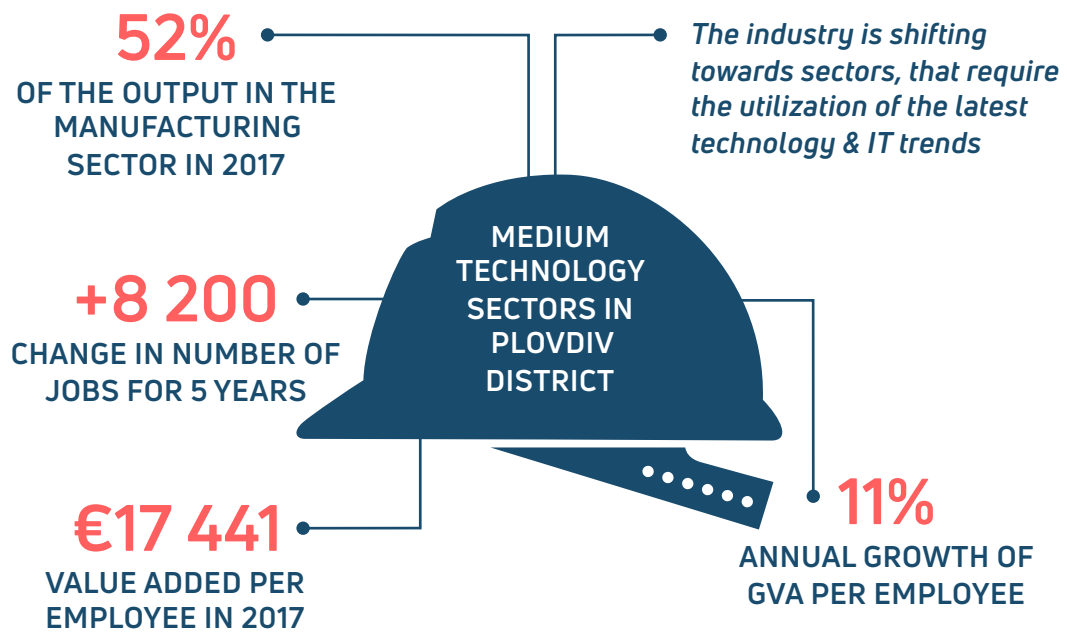
Structure of industry by level of technology (% in manufacturing employment)



Plovdiv district has a well-developed medium-tech cluster of companies, including automotive suppliers, producers of electrical and electronic equipment, rubber, plastics and metal products and machine building companies

Source: Trakia Tech based on NSI (data on district level for 2017)

Medium technology sectors in Plovdiv district



Source: Trakia Tech based on NSI (data on district level for 2012-2017)

More than any other region in the country

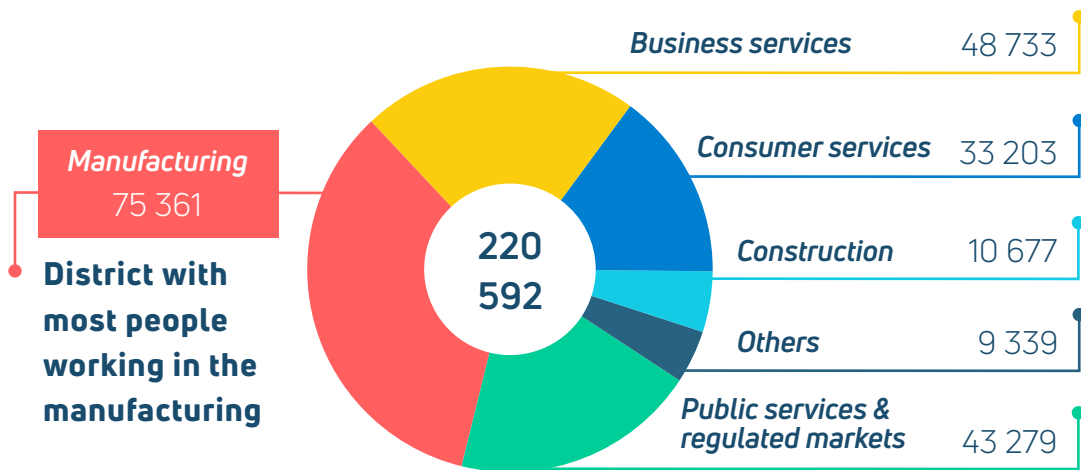


70.1%
EMPLOYMENT RATE
(15-64 years)
EU average: 67.7%



Source: NSI (data on district level for 2017)

Local economy structure (by employment)



District with most people working in the manufacturing

+ 96 000 *freelancers & seasonal workers*

Source: Trakia Tech based on NSI (data on district level for 2017)

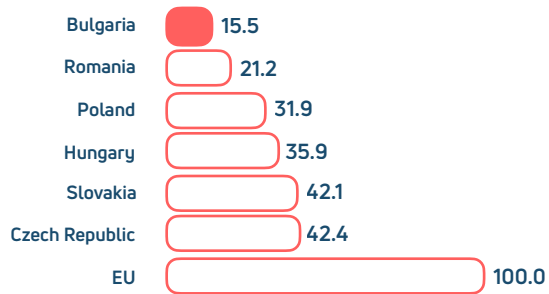
WAGES IN MANUFACTURING

Manufacturing labor costs in Bulgaria are still the lowest in the EU, being between two and three times lower than those in the Visegrad Group, as well as with 1/3 lower than those in neighboring Romania.

Wages in manufacturing, both in Plovdiv district and in the country on average, typically have a slightly higher growth rate than the average. Even though Plovdiv has one of the highest wage growth rates in manufacturing, wages in absolute terms are still lower than those in Sofia, Varna, Burgas and Stara Zagora.

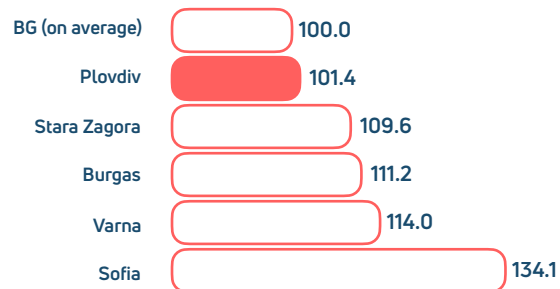
Wage growth is preceded by productivity gains in the manufacturing sector. The growth of labor productivity in Plovdiv district outpaces increases in wages. Due to significant capital investments, process optimization and employee training, labor productivity in mid-tech companies has increased with almost 70% for the 2012-2017 period.

LABOR COST IN MANUFACTURING (EU = INDEX 100)

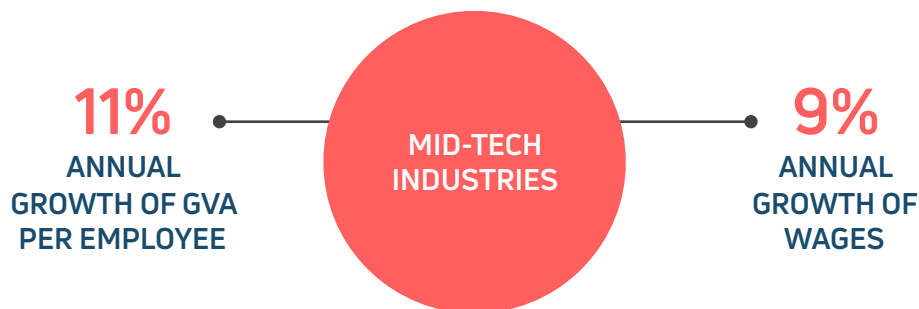


Source: Eurostat, 2016

GROSS WAGES IN MANUFACTURING (BG on average = INDEX 100)



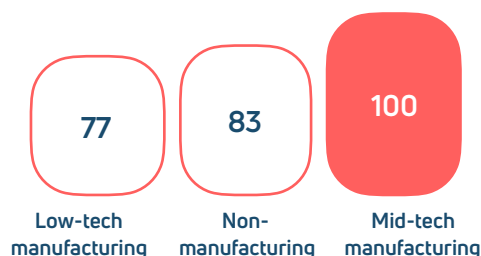
Source: NSI, 2017



Source: NSI, 2012-2017

Hiring labor for mid-tech industries is generally higher than employing a worker in the low-tech sectors. The competitive salaries create opportunities for attracting and re-qualifying workers from such low-tech sectors as apparel and food production, as well as from other non-manufacturing sectors like trade and construction.

LABOR COST LEVELS BY SECTORS IN PLOVDIV (MID-TECH = INDEX 100)



Source: NSI, 2017

Total labor cost includes gross wage plus 18.9% mandatory social security contributions paid by employer

GROSS WAGES IN MANUFACTURING IN PLOVDIV, €/MONTH (2020 FORECAST)

	ENTRY LEVEL	SKILLED WORKERS
PRODUCTION ASSEMBLY WORKER	530	690
CNC MACHINE OPERATORS	600	860
ENGINEERS - INDUSTRIAL MACHINES AND SYSTEMS	800	1140
ELECTRICAL ENGINEERS	750	1060
ENGINEERS – CONSTRUCTORS	800	1230
FIRST-LINE MANAGERS, SUPERVISORS, TECHNICIANS	840	1150
WELDERS, LATHE AND METAL WORKERS	710	1130

***€1534 is the maximum insurance base on which social security contributions are due**

Source: Trakia Tech on the basis of survey of net pay among employers

**GROSS WAGES IN IT&BPO IN PLOVDIV, €/MONTH
(2020 FORECAST)**

IT COMPANIES	ENTRY & JUNIOR LEVEL	EXPERIENCED
QA manual	660-1190	1 580-2 030
QA automated	790-1320	1 920-2 370
Developers	990-1690	1 920-2 830
Web content publishers & CMS administrators	530-790	990-1450
Graphic designers - pre-press	530-790	1050-1450
Graphic designers - creative	660-990	1190-1580
System administrators	660-990	1450-1800
CALL-CENTERS & SHARED-SERVICES CENTERS	JUNIOR LEVEL	EXPERIENCED
Customer support representatives	590-730	860-1190
Sales specialists	730-790	860-1190
Office managers & assistants	660-730	860-990
Finance & accounting	730-920	1120-1450

Source: Trakia Tech survey