Rating of demand and supply of used car which brand is Mini Cooper on the market

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★ Used sheets:

1PopPod
4ElastyczPopPod

★ Research issue:

Practical verification of demand and supply laws at used cars market in 2015 (brand: Mini Cooper).

★ Research aims:

1. Verification of demand and supply working at used cars market in 2015 (brand: Mini Cooper).
2. Element of student's database of essays created to verificate demand and supply laws on different markets- category GOODS NORMAL LUXURY

★ Main research hypothesis:

Prices and quantity of goods available on the market as used cars (brand: Mini Cooper) are subject to demand and supply laws.

★ Detailed research hypothesis I:

Linear character of regression demand function on market of used cars (brand: Mini Cooper) (R2>6).

★ Detailed research hypothesis II:

Linear character of regression supply function on market of used cars (brand: Mini Cooper) (R2>6).

★ Detailed research hypothesis III:

Used cars (brand: Mini Cooper) are example of luxury good due to high price elasticity of demand.

★ Research sample:

Subject of the research will be group of 30 people chosen according to the following criteria:
1. Age of the examinated: 19-67 years.
2. Students and working people.
3. Inhabitants of Warsaw and suburbs.

★ Research methods:

Questionnaire consist of two questions:
1. Which is the highest price you would like to pay for used car (brand: Mini Cooper)?
2. Which is the lowest price you would like to sell used car (brand: Mini Cooper)?
Assumptions:
1. Used car, Mini Cooper
2. From 2005 year
3. Capacity: 1 600cm3
4. Distance: 100 000 km

★ Date and the method of conducting the survey:

The questionanire was conducted in person.
The survey was conducted in 16-18 november 2015.

★ Results of survey:

We take five average results from 30 opinion.

Car price (zł)	15000	16000	17000	18000	19000
Which is the highest price you would like to pay for used car (brand: Mini Cooper)?	12	9	6	2	1
Which is the lowest price you would like to sell used car (brand: Mini Cooper)?	1	2	3	8	16

Analysis of collected data:

Demand function		1	2	3	4	5
price P	t_1	15	16	17	18	19
	t_2	15	16	17	18	19
demand Q_D	t_1	12	9	6	2	1
	t_2	12	9	6	2	1

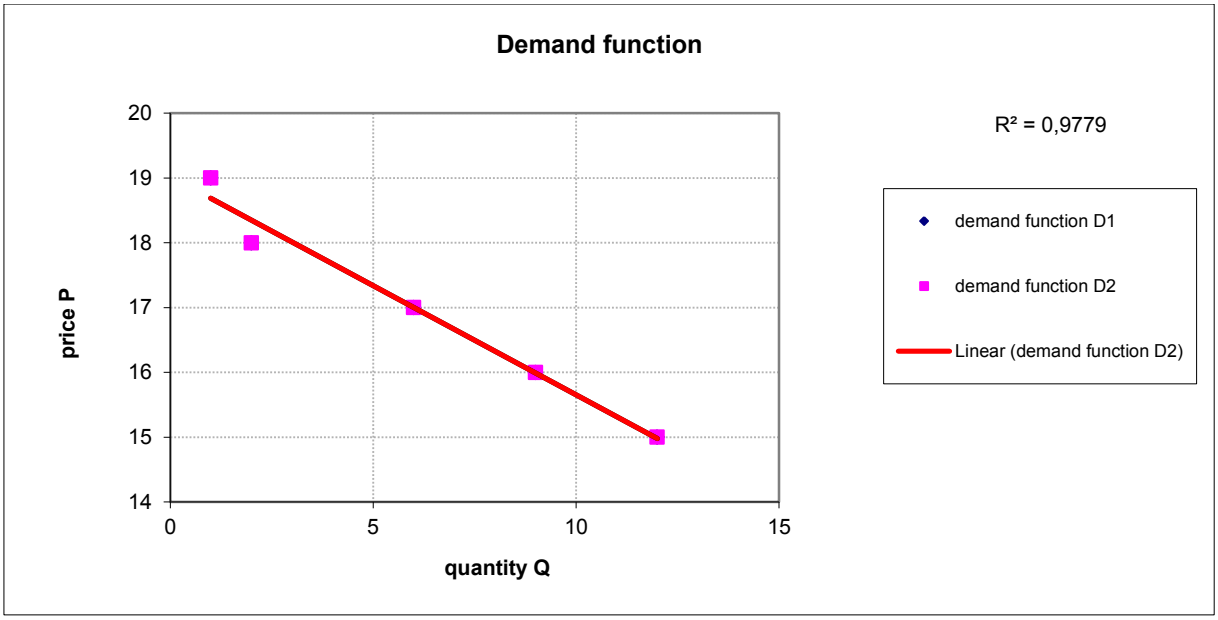
D1:	Q_{D1}=	55,30	+/-	-2,90	P
D2:	Q_{D2}=	55,30	+/-	-2,90	P

Supply function		1	2	3	4	5
price P	t_1	15	16	17	18	19
	t_2	15	16	17	18	19
supply Q_s	t_1	1	2	3	8	16
	t_2	1	2	3	8	16

S1:	Q_{s1}=	-55,20	+/-	3,60	P
S2:	Q_{s2}=	-55,20	+/-	3,60	P

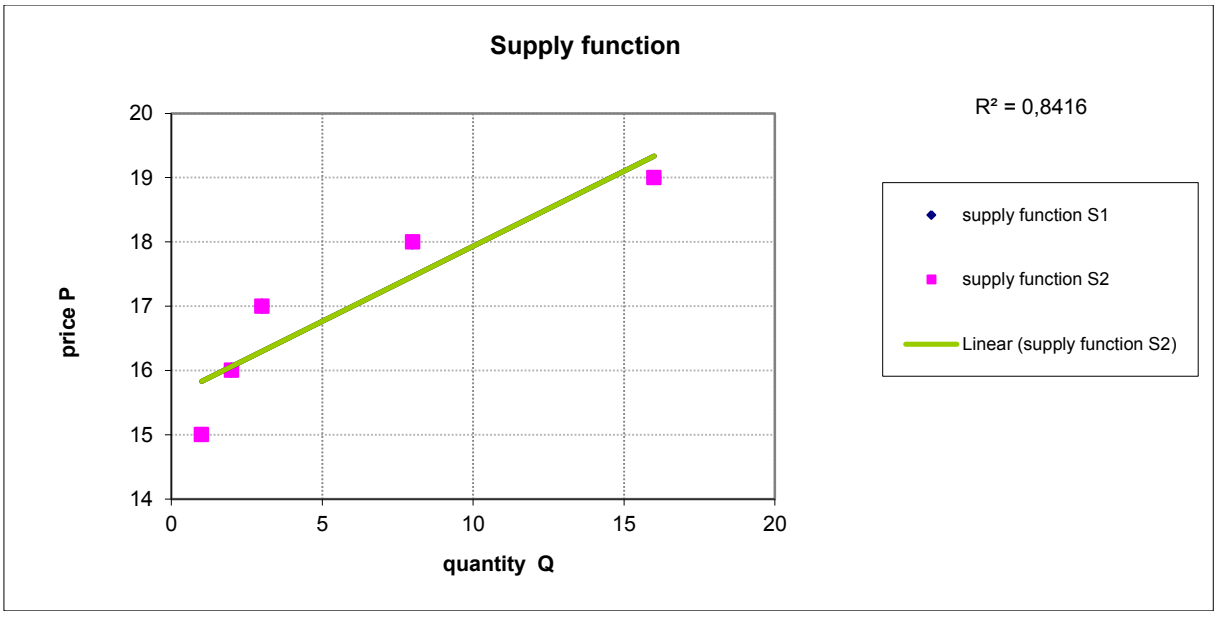
After entering the real data to model we obtained demand function:

QD = -2,9P + 55,3



and supply function:

QS = 3,6P – 55,2



Obtained functions we enter to sheet **4ElastyczPopPod** in order to compute the price of elasticity of demand and supply in equilibrium point.

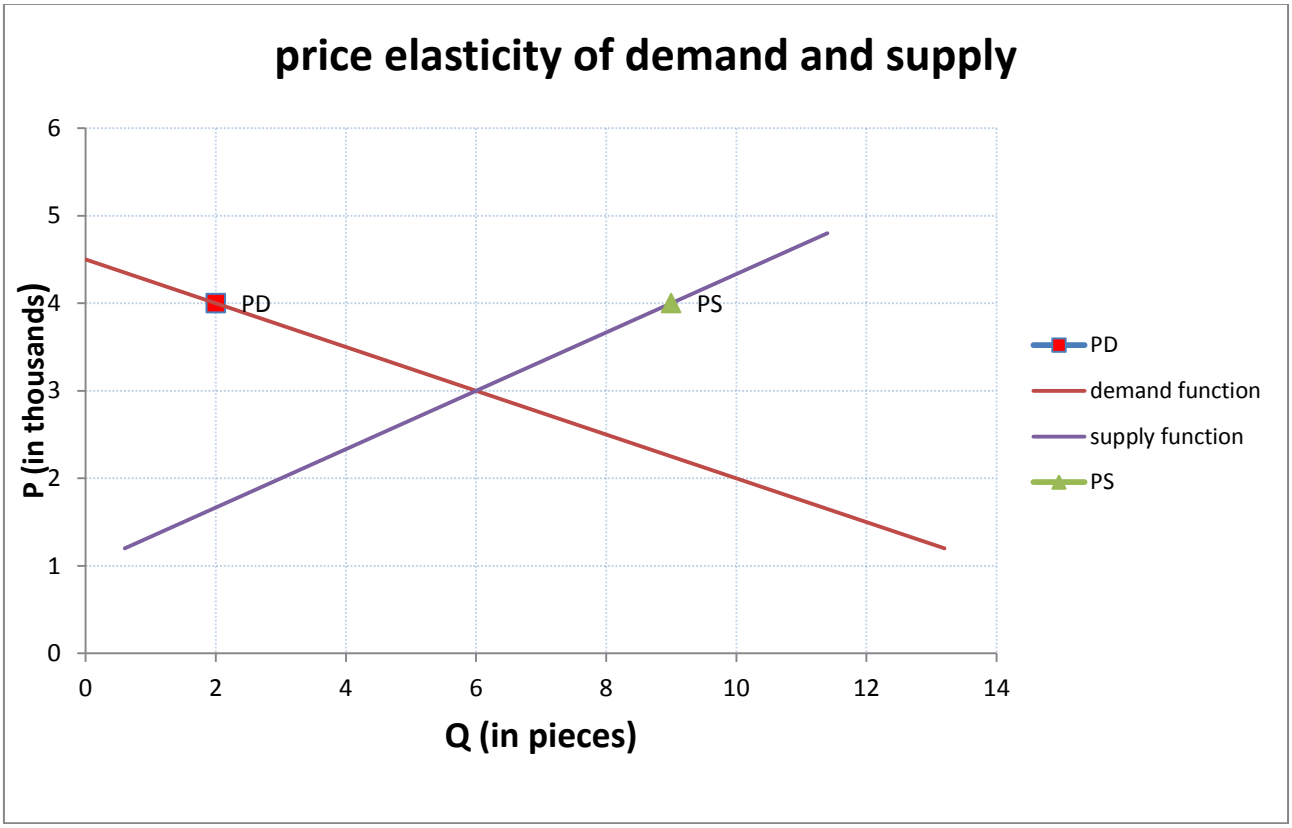
Ramka**2** **price elasticity of demand and supply**

	Demand function				Supply function			
	Q_D=	18	+/-	-4 P	Q_S=	-3	+/-	3 P

Equilibrum price

P_e=	3,0	Q_e=	6,0
D =	6,0	S =	6,0

point elasticity price of demand	E_{yd}=	-2,00	point elasticity price of supply	E_{ys}=	1,50
demand price of demand	P =	4			
	D =	2		S =	9
Point price elasticity of demand		-8,00	Point price elasticity of supply		1,33



Price elasticity of demand in equilibrium point:

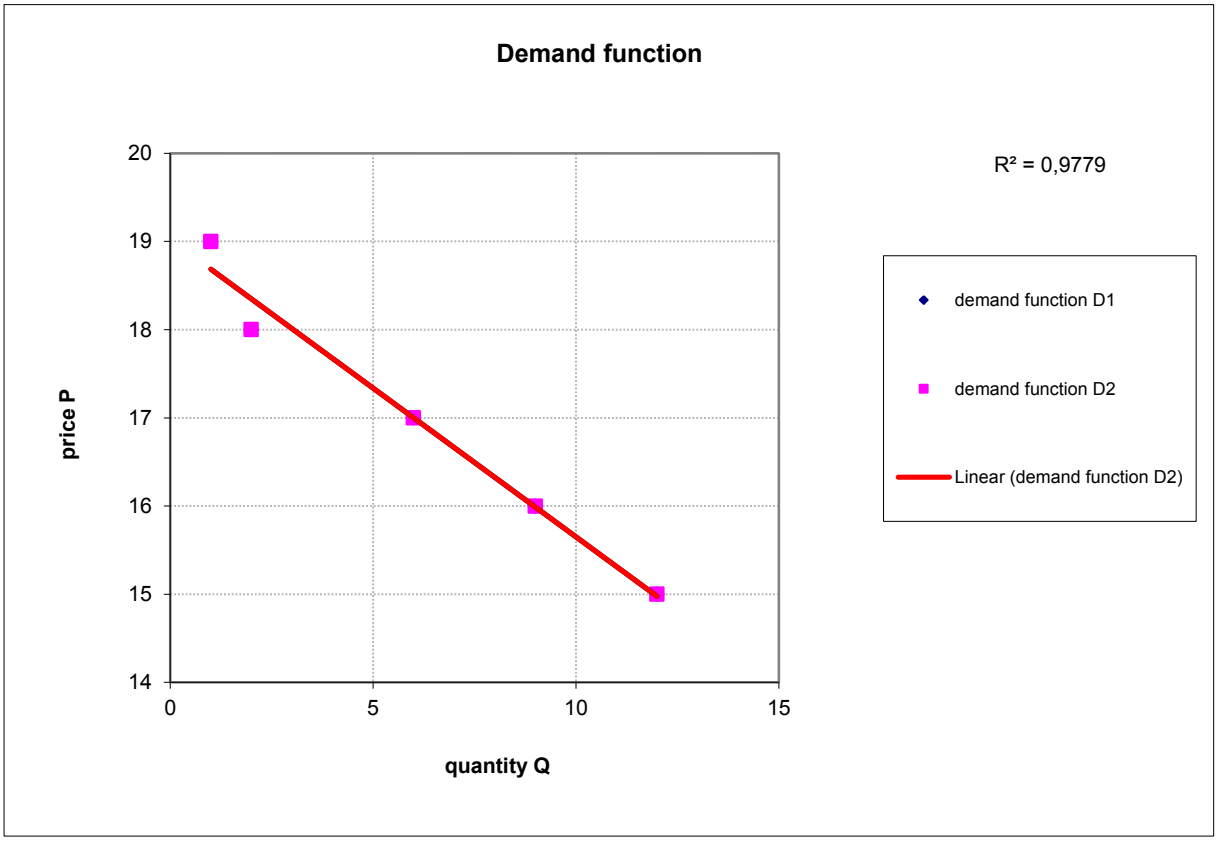
Eyd=-8,22

After entering real data to sheet we receive that in equilibrium point on market of used cars (brand: Mini Cooper) we have elastic demand and elastic supply. For price P=17 thousand zł, each change of price result in percentage change of quantity of demand, which is equal to -8,22 percentage change of price. Each change of price induce percentage change of quantity of supply, which equal 10,20 percentage change of price. It proves that it is normal luxury good, because |Epd| and |Eps| are bigger than 1. Demand and supply are elastic, an unit change (rise or fall) of price cause more than unit change of demand and supply quantity. For price P=18 thousands zł, which is above equilibrium price, we have surplus market equals 6,5 cars. At this level of price, price elasticity of demand is still elastic, but it is higher than elasticity in equilibrium point. Point price elasticity of supply is still elastic and lower than in equilibrium point.

★ Verification of detailed hypothesis:

Detailed research hypothesis I:

Linear character of regression demand function on market of used cars (brand: Mini Cooper) (R2>6).



The function of demand suitable to collected data:

QD = -2,9P + 55,3

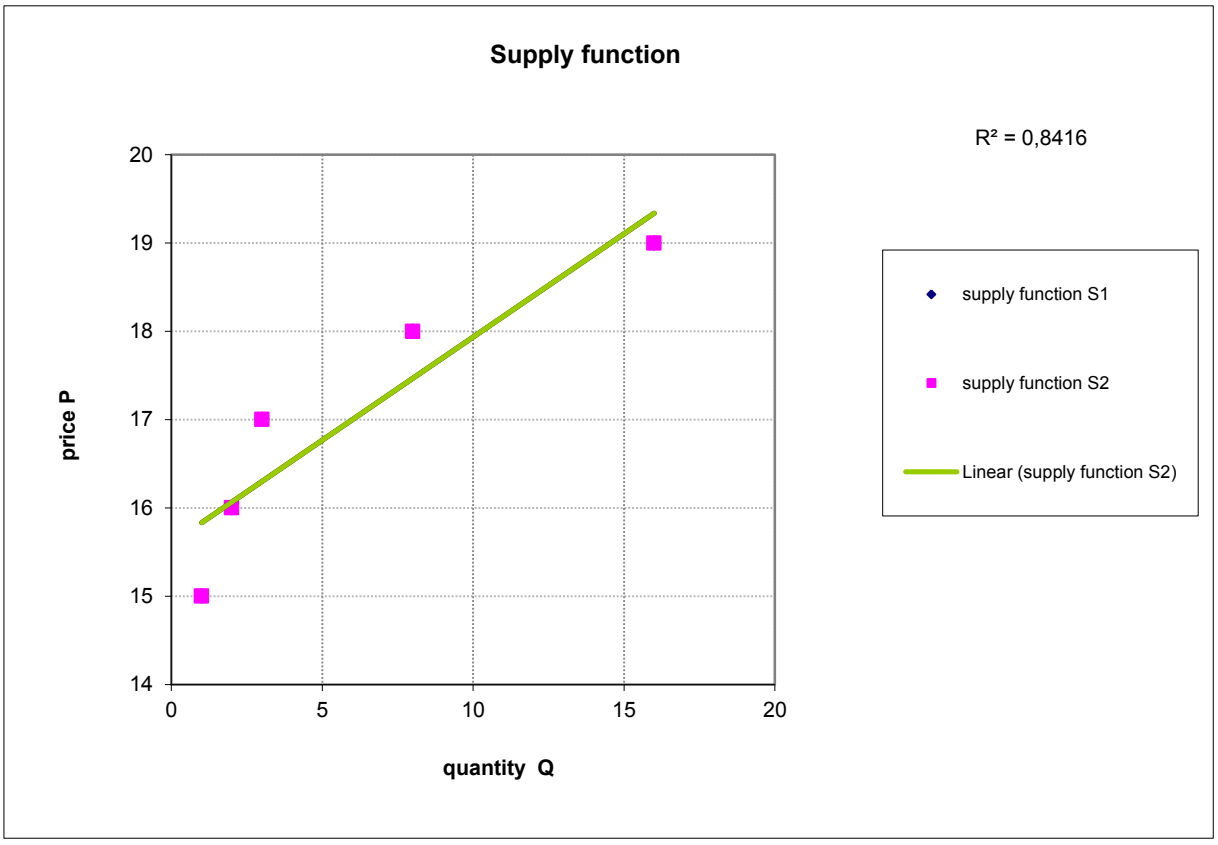
Factor adjustment function to the data:

R^2 = 0,9779

It meets the requirement which confirm the truth of detailed hypothesis.

Detailed research hypothesis II:

Linear character of regression supply function on market of used cars (brand: Mini Cooper) (R2>6).



The function of supply suitable to collected data:

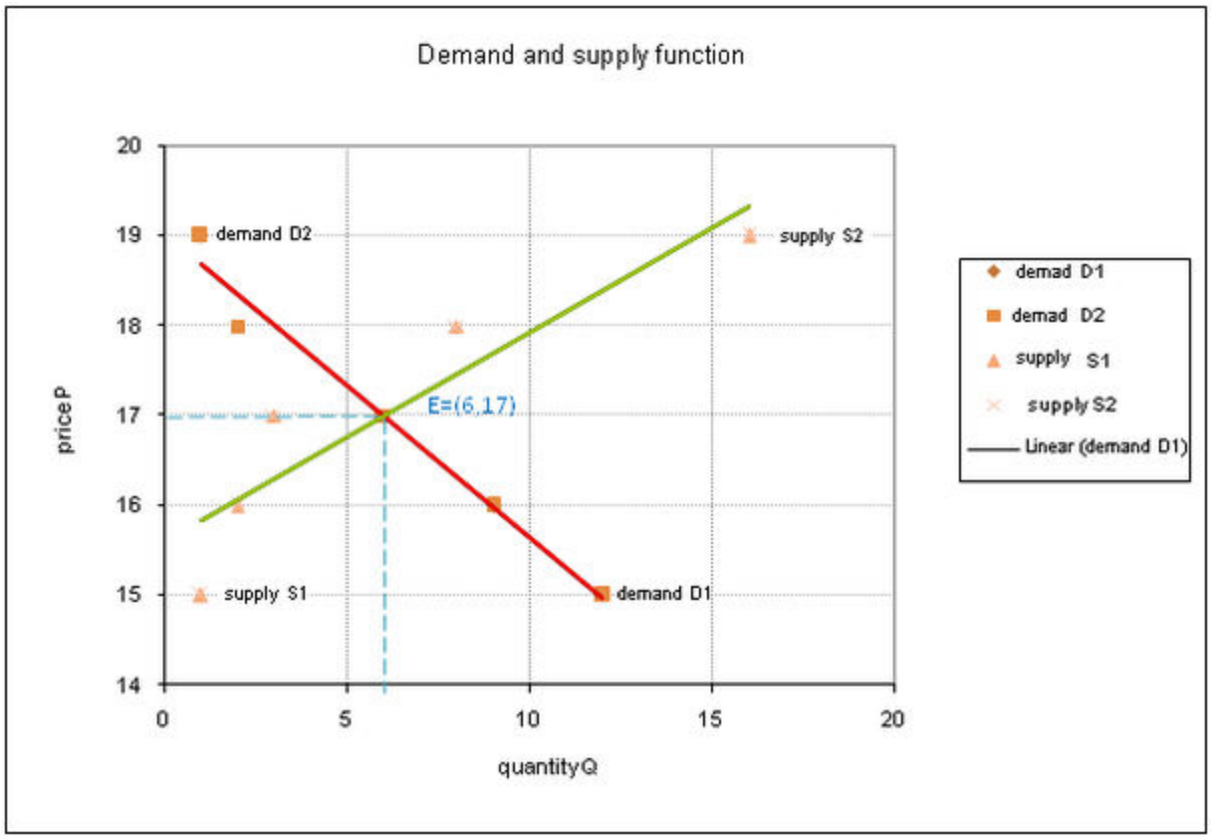
QD = 3,6P + 55,2

Factor adjustment function to the data:

R^2 = 0,8416

It meets the requirement which confirm the truth of detailed hypothesis.

Detailed research hypothesis III:
Used cars (brand: Mini Cooper) are example of luxury good due to high price elasticity of demand.



		demand			
		D1		D2	
supply	S1	**Pe =**	**17,00**	**Pe =**	**17,00**
		Qe =	**6,00**	**Qe =**	**6,00**
	S2	**Pe =**	**17,00**	**Pe =**	**17,00**
		Qe =	**6,00**	**Qe =**	**6,00**

We obtain following cross point:
Equilibrum on market of Mini Cooper cars is reached at the equilibrum price P=17 thousands zł and the quantity of 6 used cars: brand Mini Cooper.

★ Conclusions:

All detailed research hypothesis have been proved through analysis of collected data. It appears that

Prices and quantity of goods available on the market as used cars (brand: Mini Cooper) are subject to demand and supply laws.

was proved and become thesis. Demand and supply laws function on used cars market brand Mini Cooper.