TWO LOGICAL THOUGHT OF RESEARCH
INDUCTIVE & DEDUCTIVE

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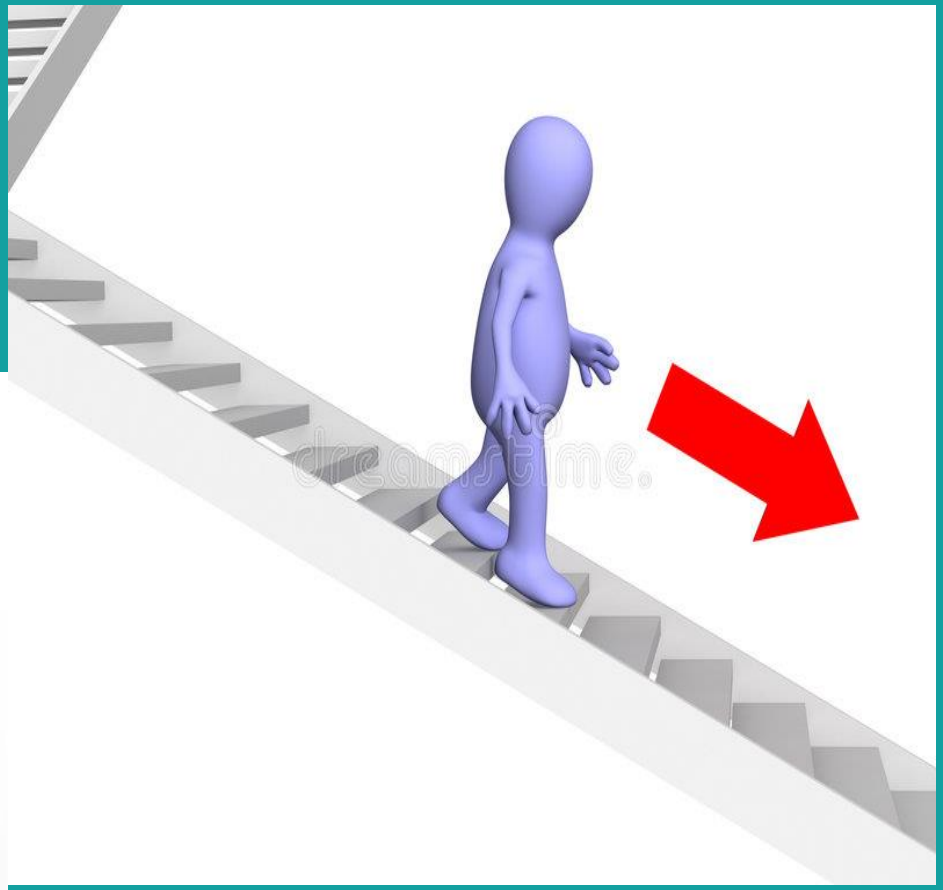
Problem

- Why price of vegetable is unstable?
- Why gold price is rising?
- Why children drop out without complete school education?
- Why trade balance of Nepal is always deficit?
- How remittance contribute in Nepalese economy?
- How control the inflation?
- What are the contributing factor of pollution in Kathmandu valley?
- What are the causes of increasing inflation?/deflation?
- GDP growth and per capita income?

Ideas to solve the problem

DEDUCTIVE LOGICAL THOUGHT



INDUCTIVE LOGICAL THOUGHT

Inductive & deductive logical thought

- When professionals carrying experiments, they use different methods to understand a problem.
- For instance, a expert could use **inductive reasoning,** which is drawing conclusions from evidence,
- **And deductive reasoning,** which is finding evidence to support or disprove conclusions.

Inductive and Deductive reasoning

- Deductive and Inductive these two methods of reasoning have a very different "composition" to them when you are **verifying of theoretical idea from class room knowledge in real world.**

DEDUCTIVE AND INDUCTIVE

- A particular study may look like it is purely deductive most science social science & management and many more range involves both inductive and deductive reasoning processes at some time in the project.

Deductive Reasoning

- Deductive reasoning works from the more general to the more specific. Sometimes this is informally called a

"TOP-DOWN"

approach.

- We might begin with thinking up a *theory* about our topic of interest. We then narrow that down into more specific *hypotheses* that we can test.

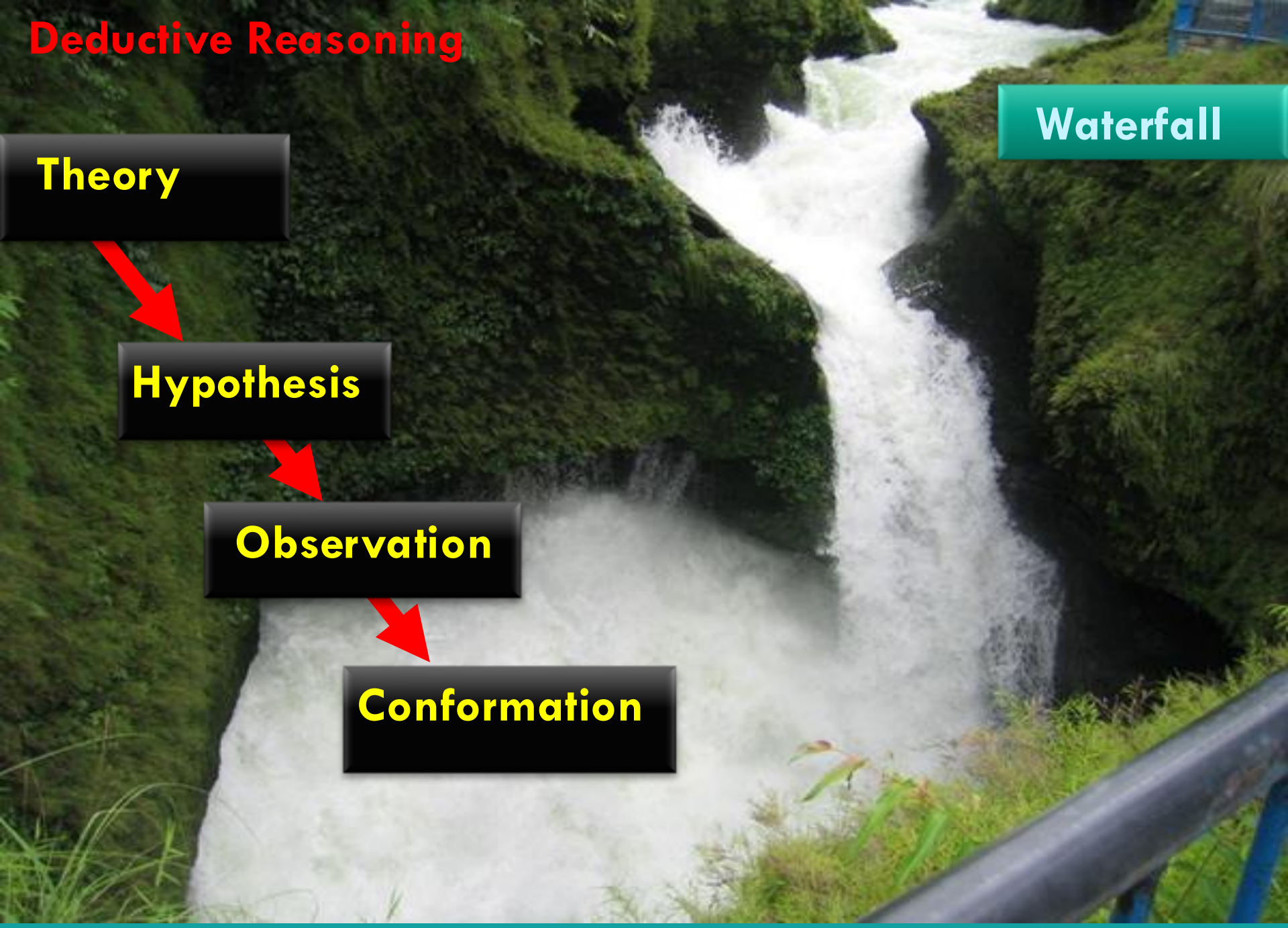
Deductive Reasoning

- We narrow down even further when we collect *observations* to address the hypotheses.

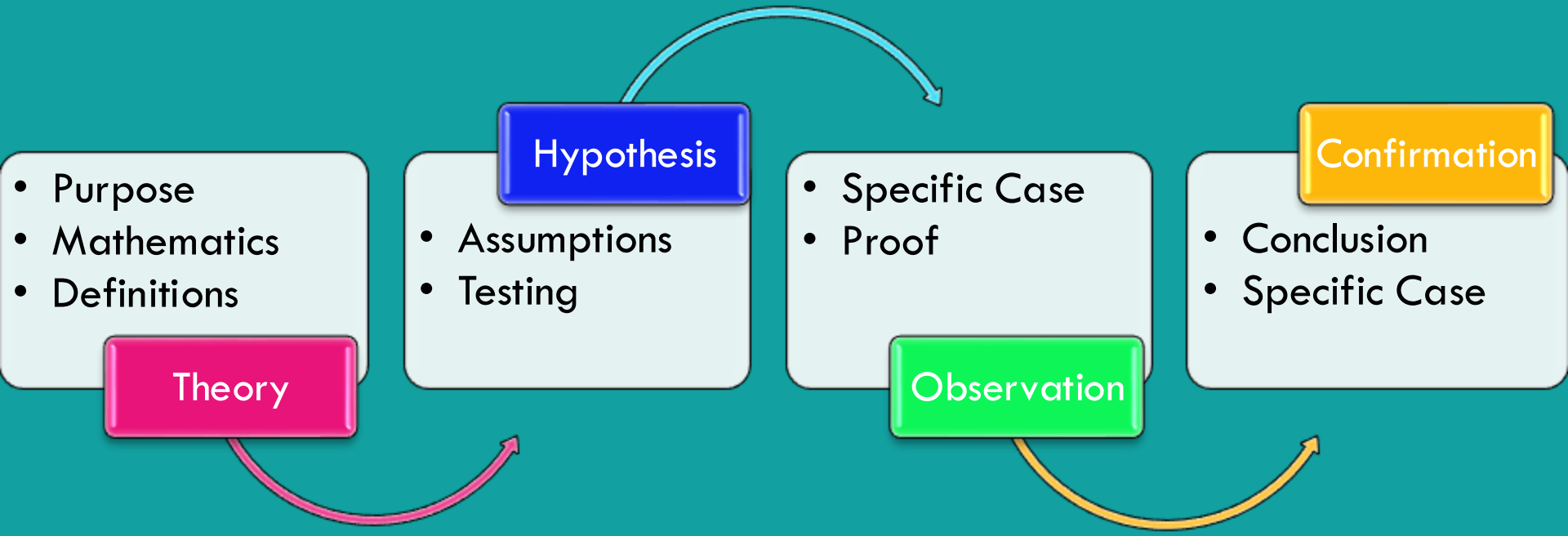
- Deductive reasoning is more narrow in nature and is concerned with testing or confirming hypotheses.

- This ultimately leads us to be able to test the hypotheses with specific data - a *confirmation* (or not) of our original theories.

Deductive Reasoning



Deductive Reasoning: Flow Chart



Deductive Reasoning

Deductive reasoning works from the more general to the more specific

- **Have Theories then Hypotheses: theory and hypothesis should also accurate**
- **Data are Gathered to Test**
- **Referred to as: "THEORY-DRIVEN"**
- **Conformation or testing of hypothesis**
- **Most Common Approach and Usually Quantitative**

The Method of Deduction and Empirical Testing

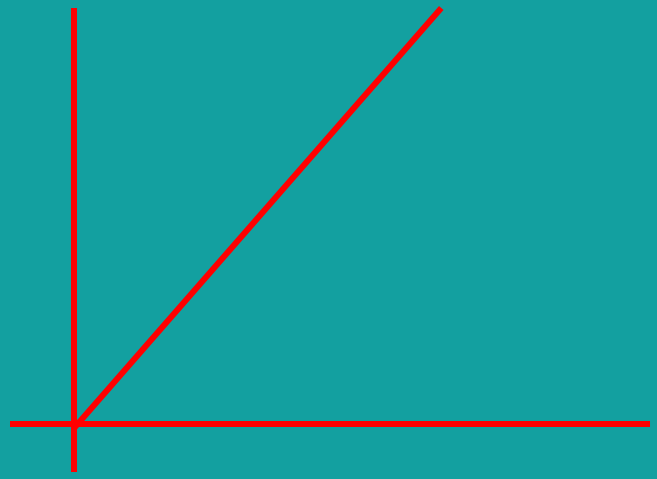
- The process of deduction and empirical testing is the most important method of approach followed by modern entrepreneurs & economists. It is illustrated in sequence of following steps
- It provides a specific example of the way in which the *deductive method* works; it provides a good illustration of *modern business & economic methodology*

- **A priori theory: Theory of Alfred Marshall**

Example: The market price of a good is determined by the demand for and supply of the good.

- **Law of Supply**

The law of supply states that, other things remaining the same, the quantity supplied of a commodity is positively related to its price.

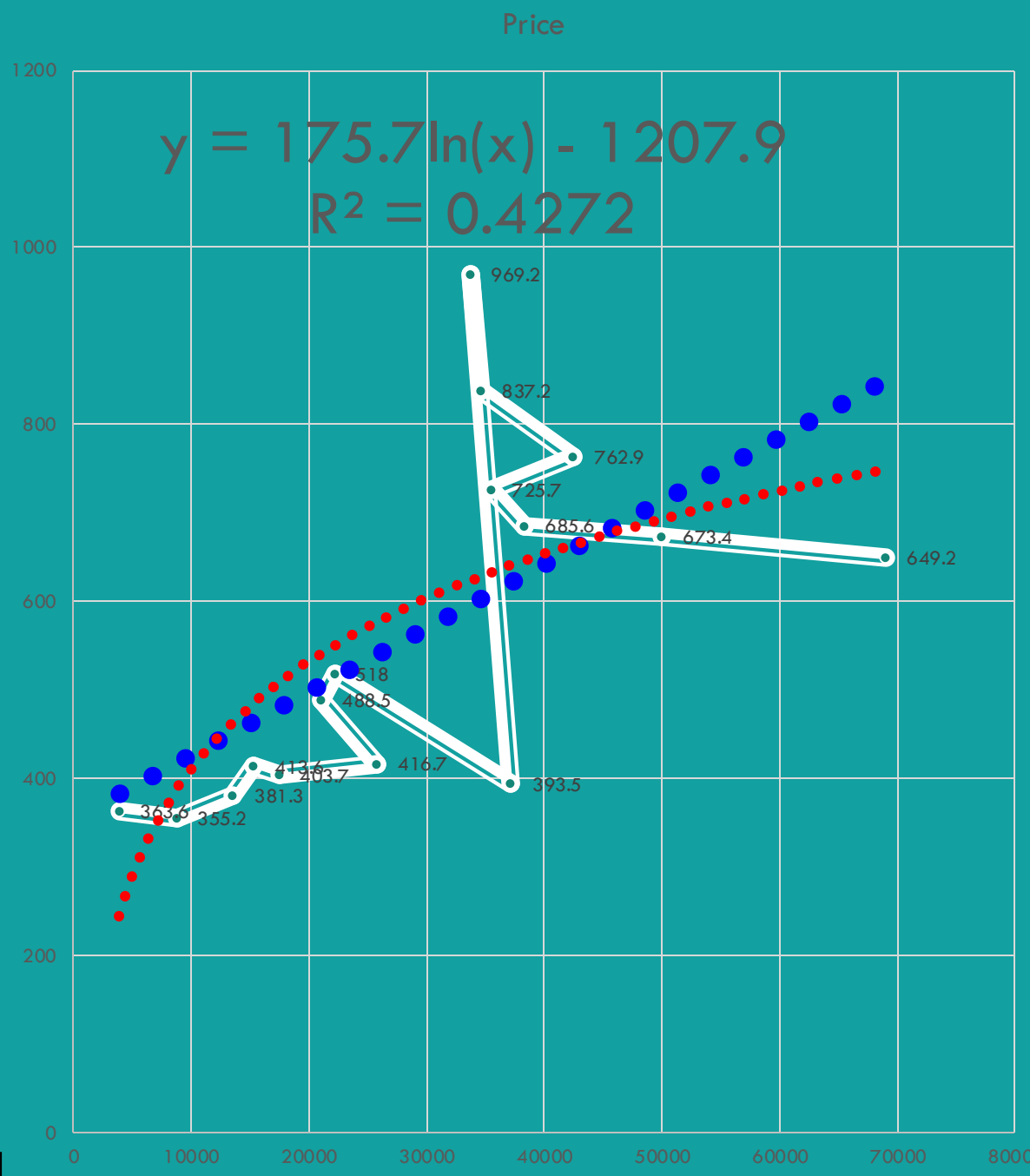


Example: Market Equilibrium

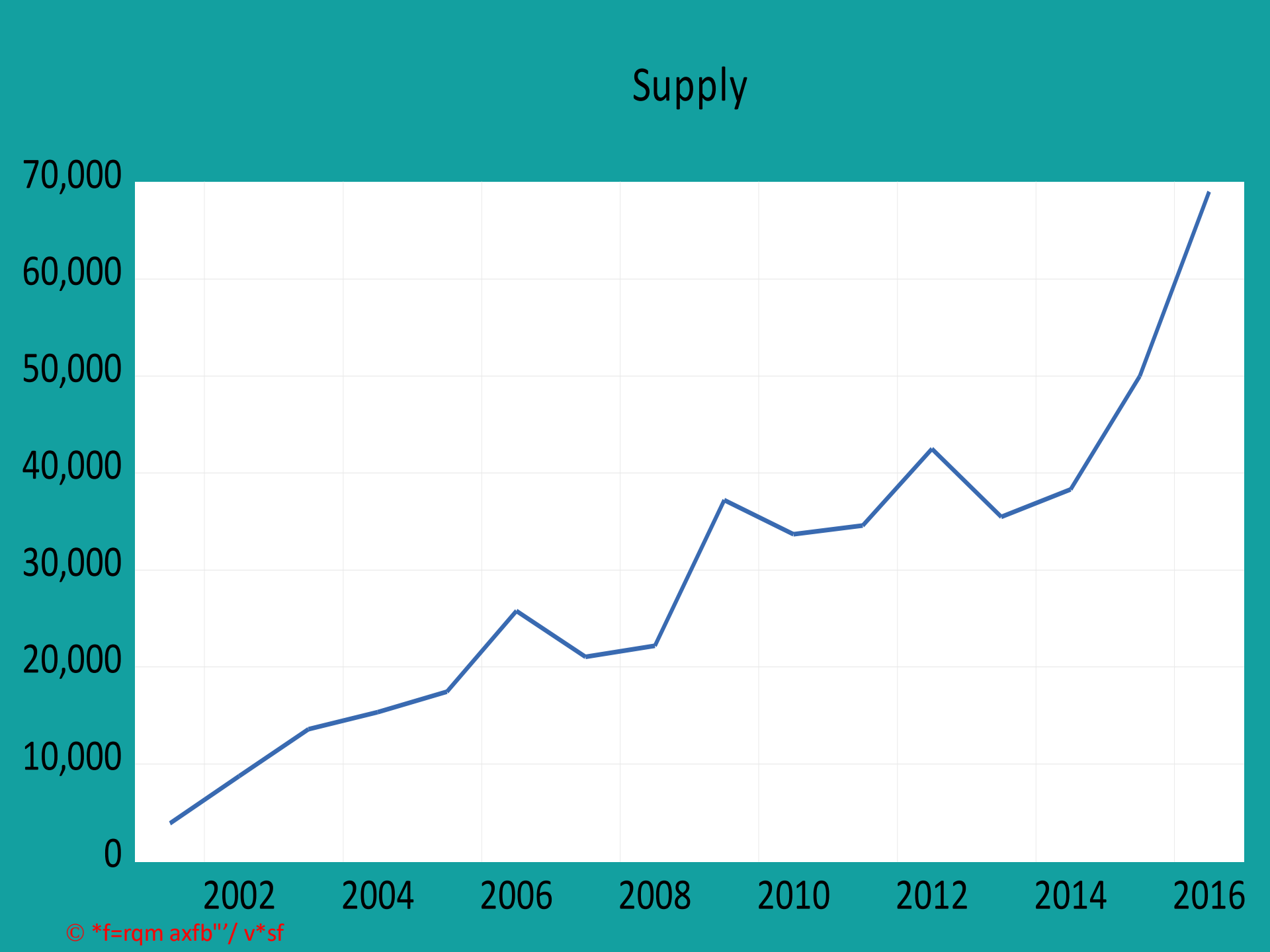
1. Application of Marshallian supply function is in Kalimati vegetable market: A study about apple market.
2. Hypothesis

There is positive relation between apple price and supply.

Year	Supply	Price
2001	3880	363.6
2002	8746	355.2
2003	13604	381.3
2004	15344	413.6
2005	17451	403.7
2006	25776	416.7
2007	21040	488.5
2008	22173	518
2009	37201	393.5
2010	33700	969.2
2011	34600	837.2
2012	42500	762.9
2013	35500	725.7
2014	38300	685.6
2015	50000	673.4
2016	69000	649.2



Data source: Pravigya



- | | PRICE | SUPPLY |
- PRICE | 1.000000 | 0.617425 |
- SUPPLY | 0.617425 | 1.000000 |
-

Example: Keynesian consumption Function

1. 2. Consumption behavior of urban population is according to the Keynesian Consumption

Hypothesis: Null H_o: $\beta = 0$

Alternative H_1: $\beta \neq 0$

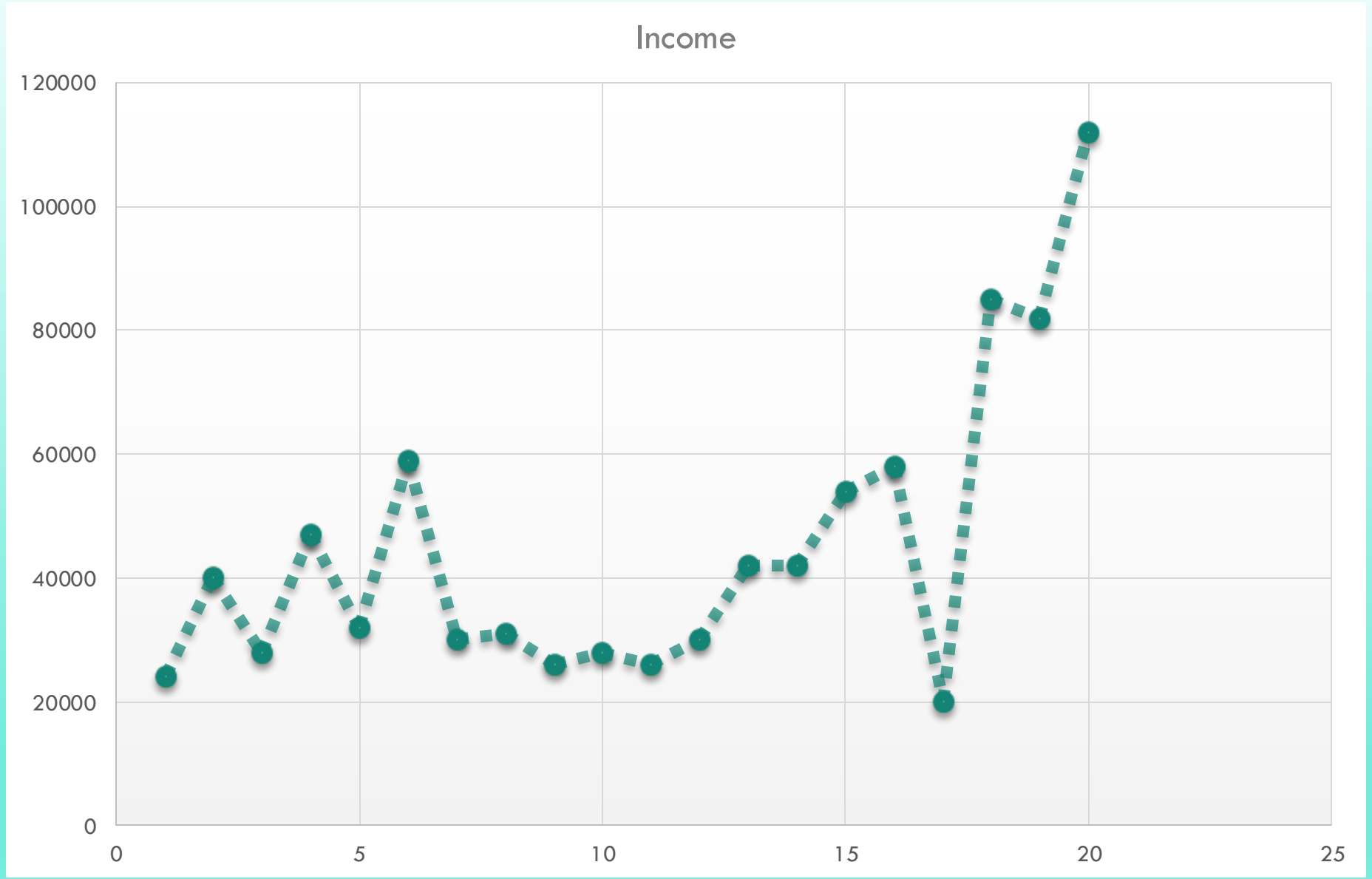
Keynesian Consumption Function: A Study of Urban Population Of Nepal

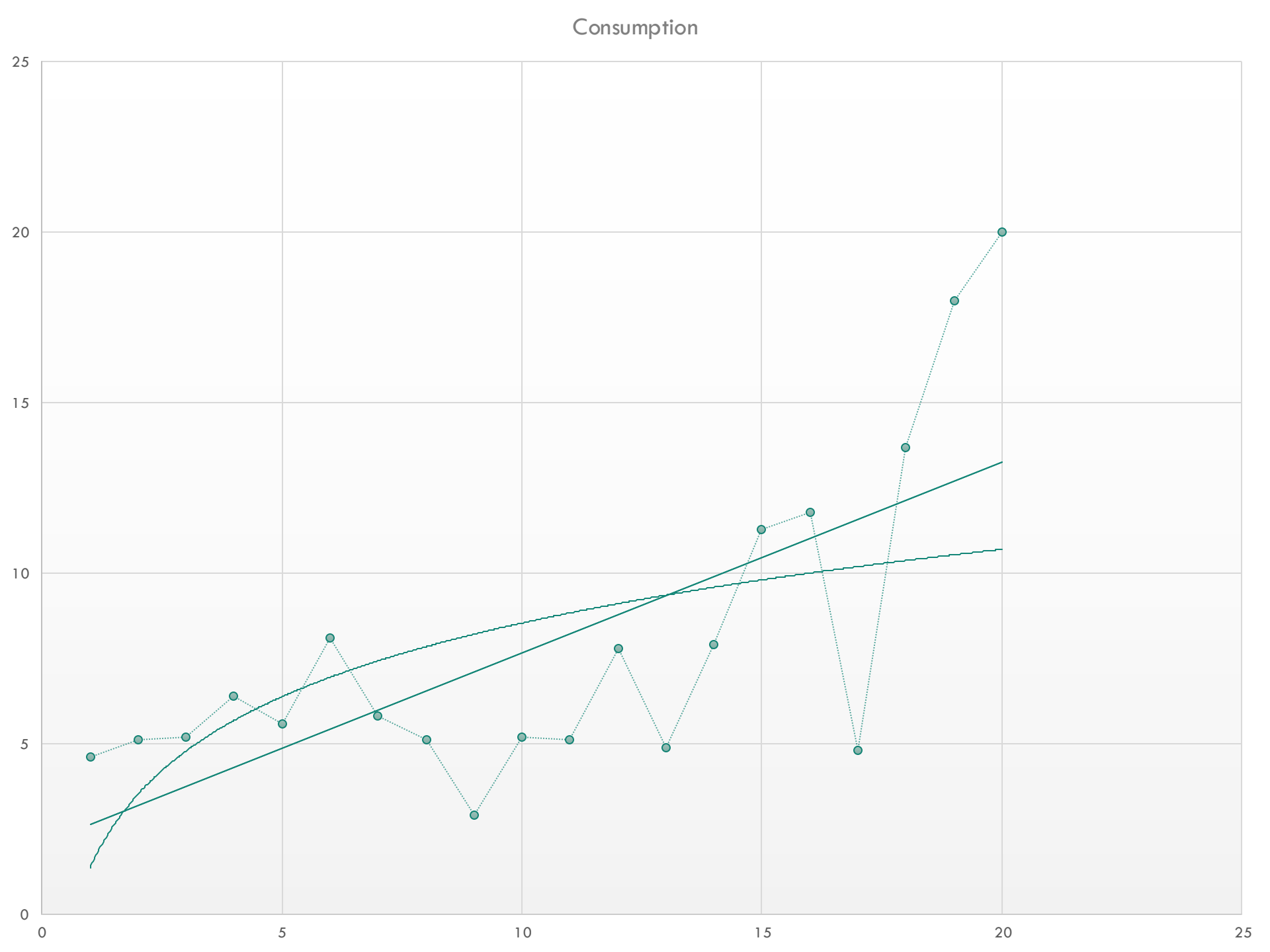
	c	y	f	lnc	lny	lnf
1	5.20	28.00	3.00	.72	1.45	.48
2	5.10	26.00	3.00	.71	1.41	.48
3	5.60	32.00	2.00	.75	1.51	.30
4	4.60	24.00	1.00	.66	1.38	.00
5	11.30	54.00	4.00	1.05	1.73	.60
6	8.10	59.00	2.00	.91	1.77	.30
7	7.80	44.00	3.00	.89	1.64	.48
8	5.80	30.00	2.00	.76	1.48	.30
9	5.10	40.00	1.00	.71	1.60	.00
10	18.00	82.00	6.00	1.26	1.91	.78
11	4.90	42.00	3.00	.69	1.62	.48
12	11.80	58.00	4.00	1.07	1.76	.60
13	5.20	28.00	1.00	.72	1.45	.00
14	4.80	20.00	5.00	.68	1.30	.70
15	7.90	42.00	3.00	.90	1.62	.48
16	6.40	47.00	1.00	.81	1.67	.00
17	20.00	112.00	6.00	1.30	2.05	.78
18	13.70	85.00	5.00	1.14	1.93	.70
19	5.10	31.00	2.00	.71	1.49	.30
20	2.90	26.00	2.00	.46	1.41	.30
21						
22						

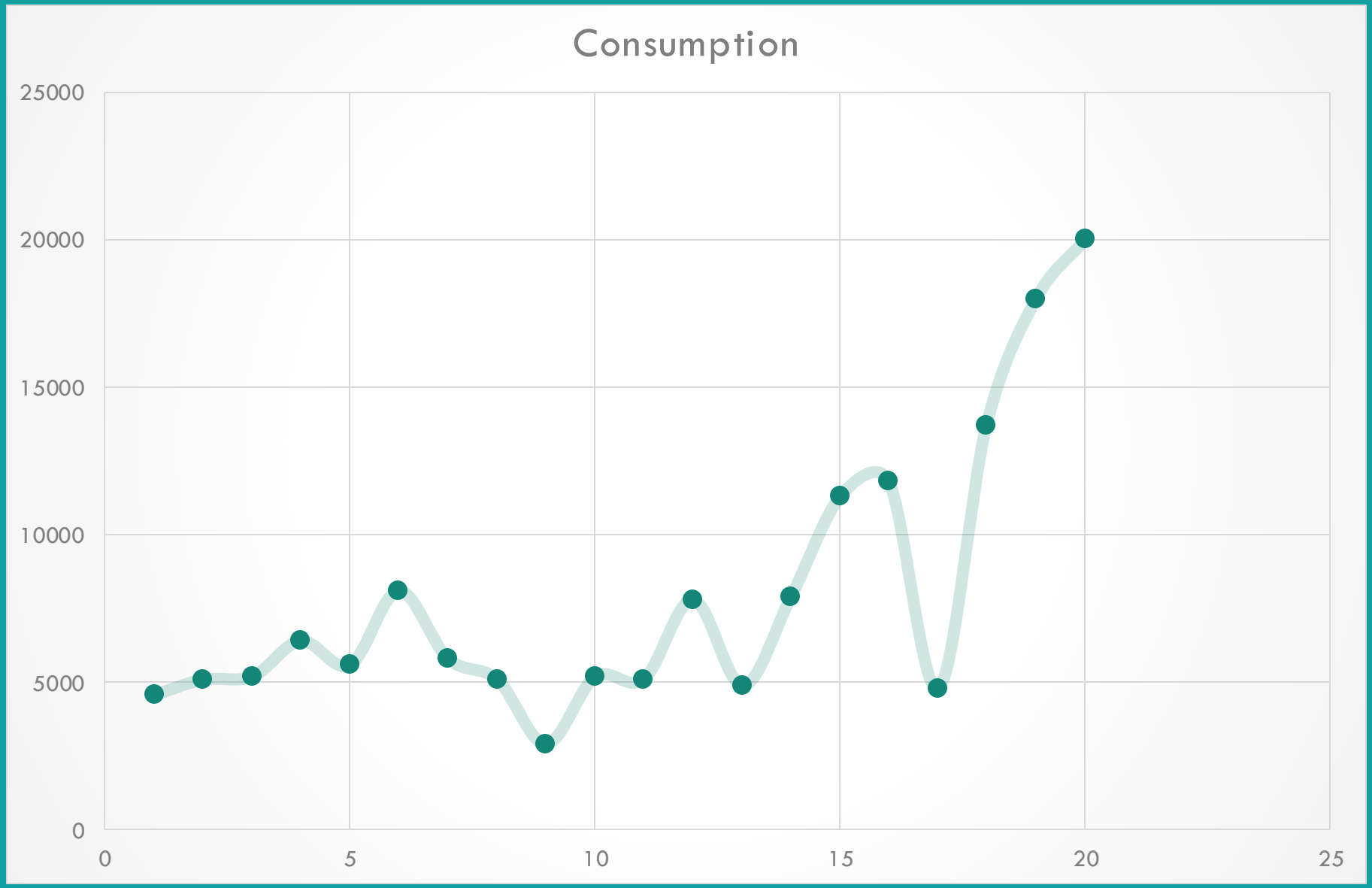
Keynesian Consumption Function: A Study of Urban Population Of Nepal, Regression Result

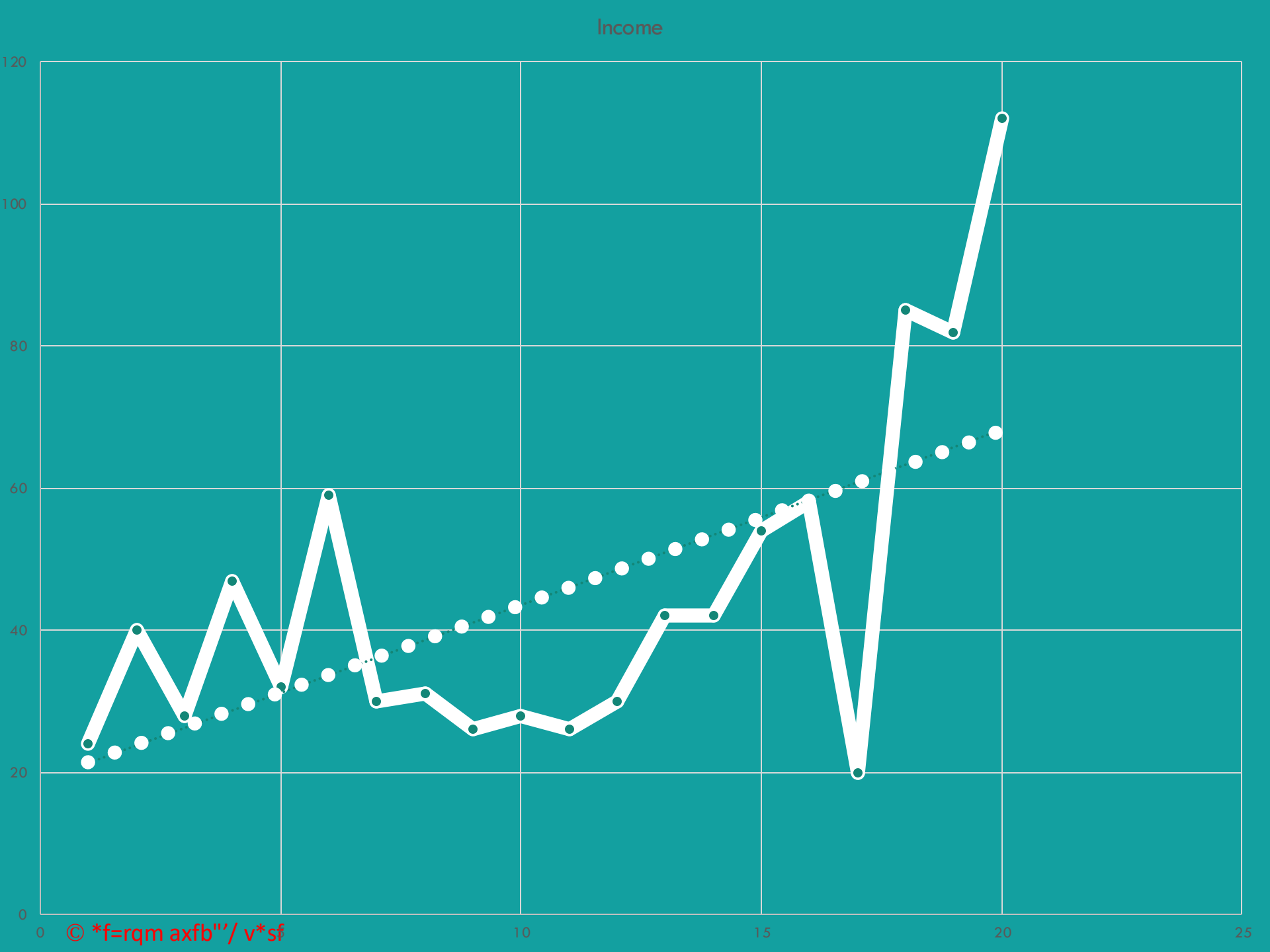
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.935(a)	.874	.859	.08182	1.870

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Variables	B	Std. Error	Beta		
1	(Constant)	-.599	.159		-3.765	.002
	LNY	.842	.107	.782	7.886	.000
	LNF	.216	.084	.256	2.580	.019




Consumption
25
20
15
10
5
0
0
5
10
15
20
25




Income
120
100
80
60
40
20
0
0
10
15
20
25
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- **A priori theory: The Environmental Kuznet Curve (EKC)**

Example: One explanation for the environmental Kuznets curve is that the income elasticity of marginal damage is increasing in income. So, at low levels of income, pollution will rise with neutral growth because the policy response is weak. As income rises, the policy response becomes stronger, and if at some point the income elasticity of marginal demand is sufficiently high, pollution will start to fall as income increases.

- **A priori theory: The Environmental Kuznet Curve (EKC)**

Assumptions:

  - A natural progression of economic development from clean rural life economies to polluting industries to clean service economies.
  - Advanced economies exporting their pollution to less developed countries.
  - The internalization of externalities requires relatively advanced institutions for collective decision-making.
  - Environmental quality is a stock resource that degrades over time.
  - Demand for environmental quality overtakes supply ultimately.

- **A priori theory: The Environmental Kuznet Curve (EKC) Assumptions:**

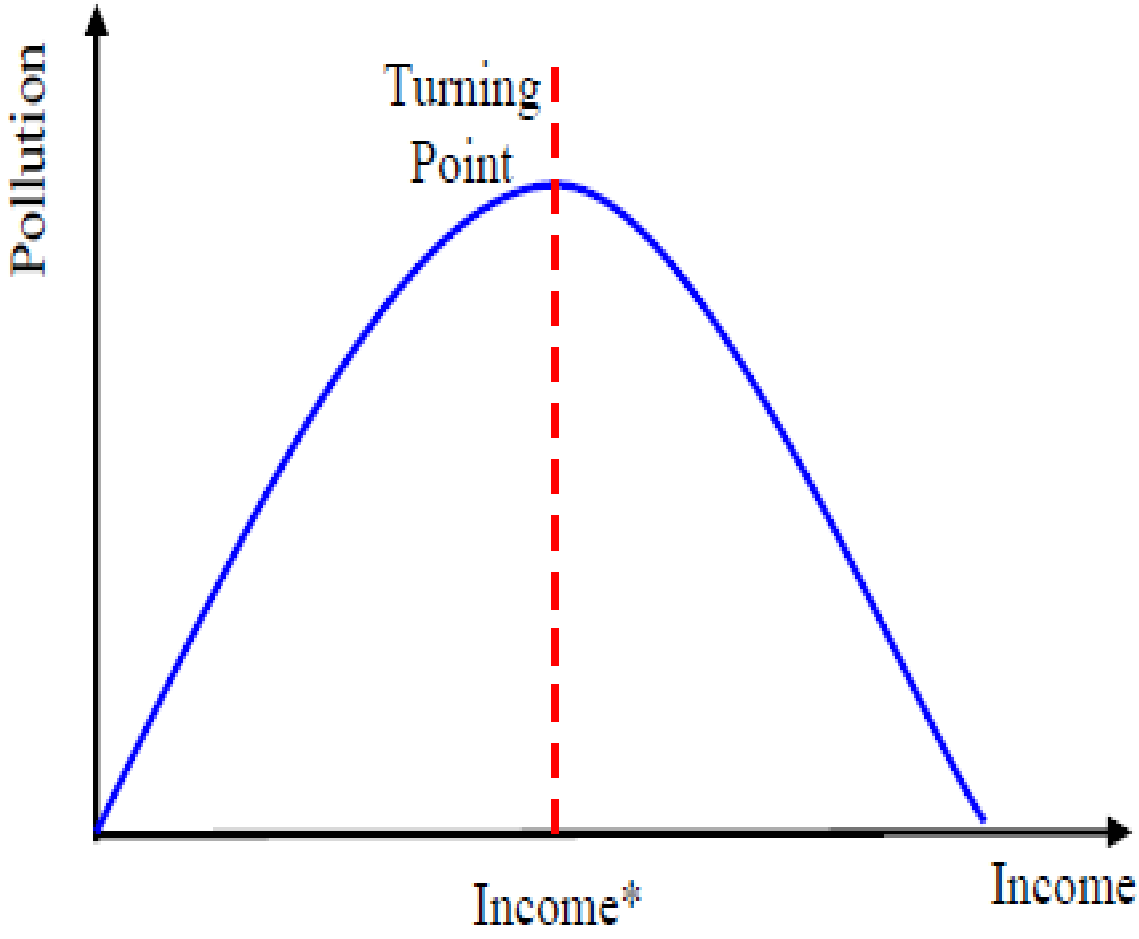


Figure 1: The Environmental Kuznets Curve (EKC)

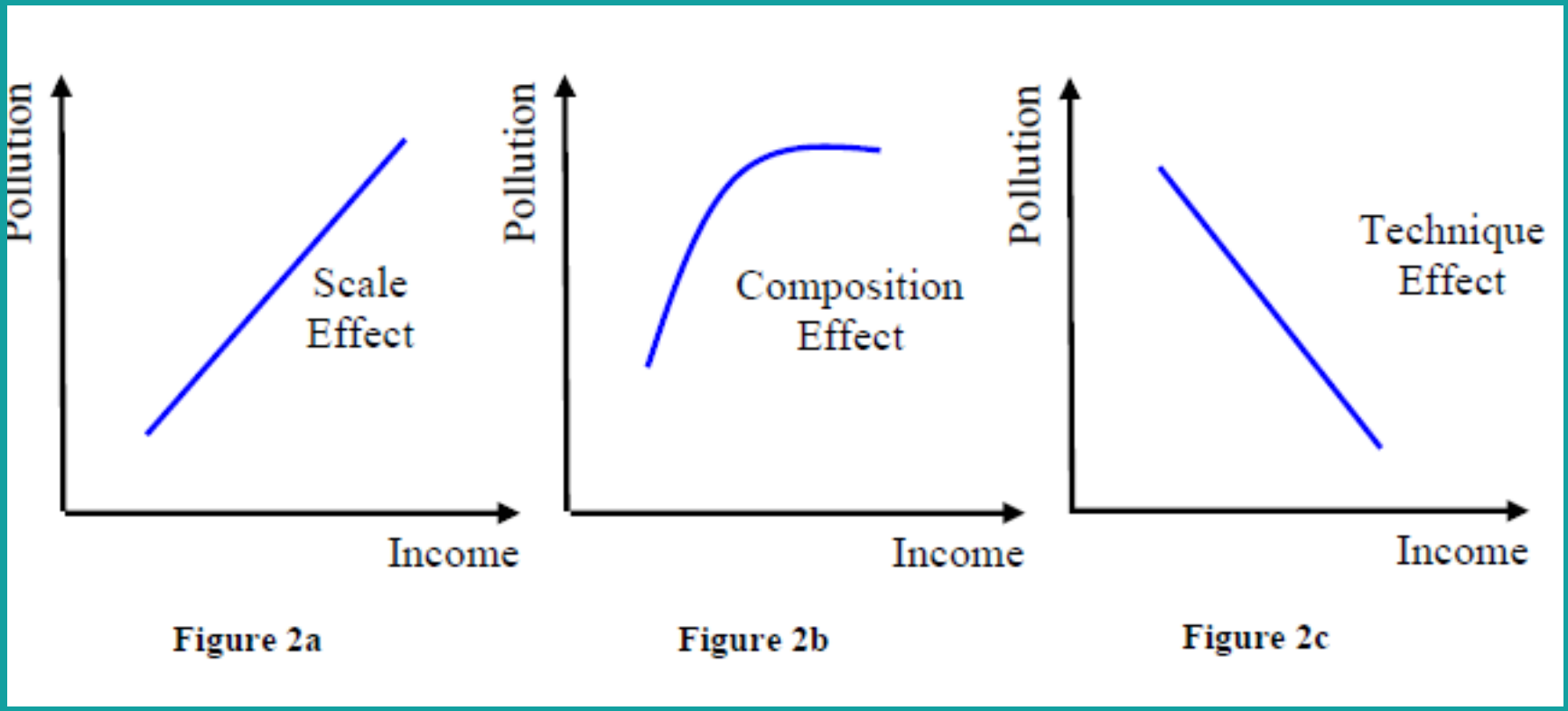
The Environmental Kuznet Curve: Hypothesis

- The EKC hypothesis contends that pollution increases initially as a country develops its industry and thereafter declines after reaching a certain level of economic progress (Figure 1).
- This implicitly suggests that environmental damage is unavoidable in the initial stage of economic development and therefore, has to be tolerated until the inversion effect kicks in.
- It is oxymoronic that irreversible damage is to be accepted in return for future improvement, which will definitely not be able to restitute the environment to its pristine state.

The Environmental Kuznet Curve: Hypothesis

- When a country begins industrialization, the scale effect will take place and pollution increases (Figure 2a).
- Further along the trajectory, firms switching to less-polluting industries results in the composition effect, which levels the rate of pollution (Figure 2b).
- Finally, the technique effect comes into play when mature companies invest in pollution abatement equipment and technology, which reduces pollution (Figure 2c).

The Environmental Kuznet Curve: Hypothesis



Example: EKC

1. Application of EKC: levels of income, pollution will rise with neutral growth because the policy response is weak.
2. Environmental quality is a stock resource that degrades over time.

Hypothesis: Null H_o: $\beta = 0$

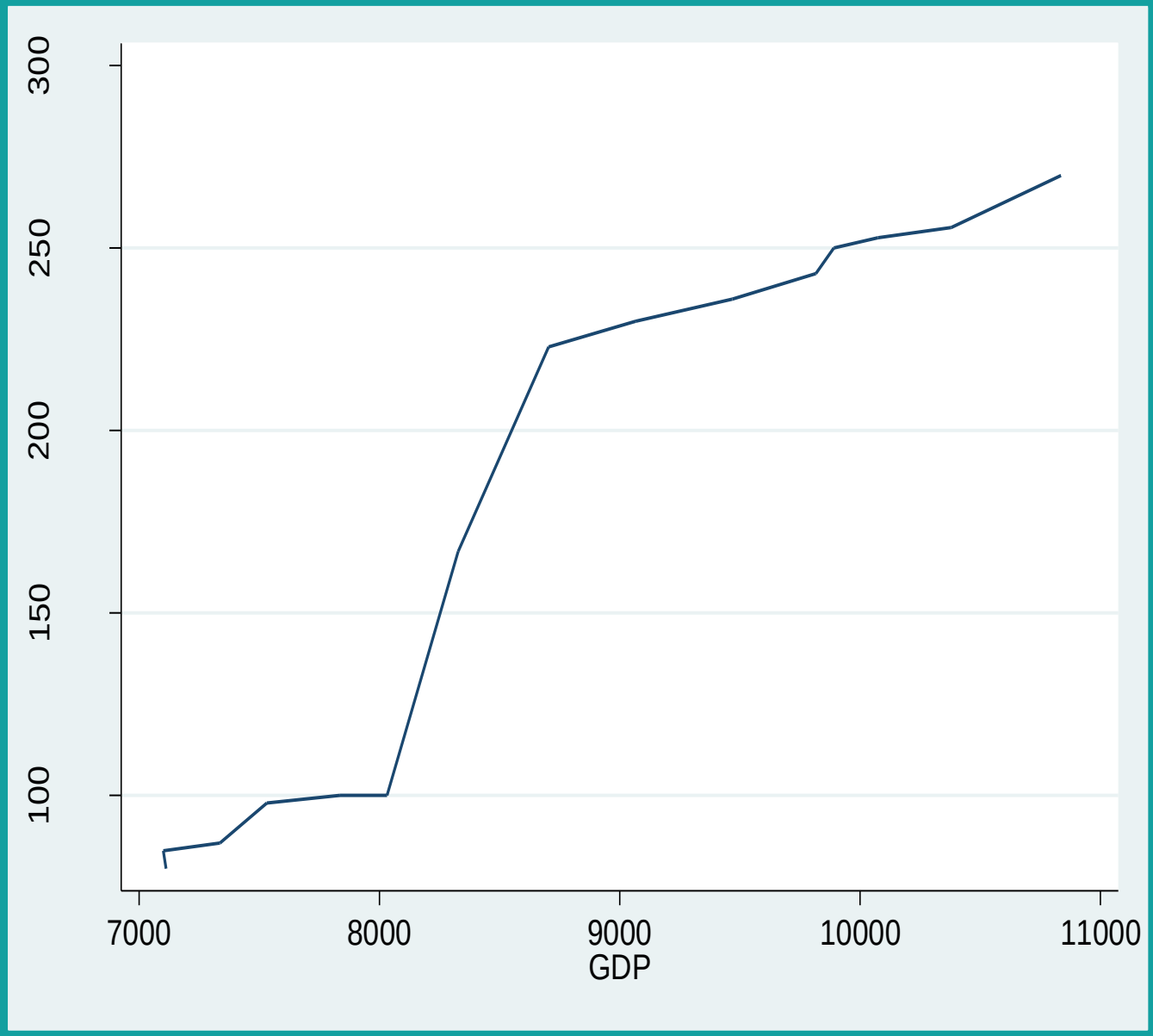
Alternative H_1: $\beta \neq 0$

$Y = a + b_1x_1 + b_2x_2$ (i)

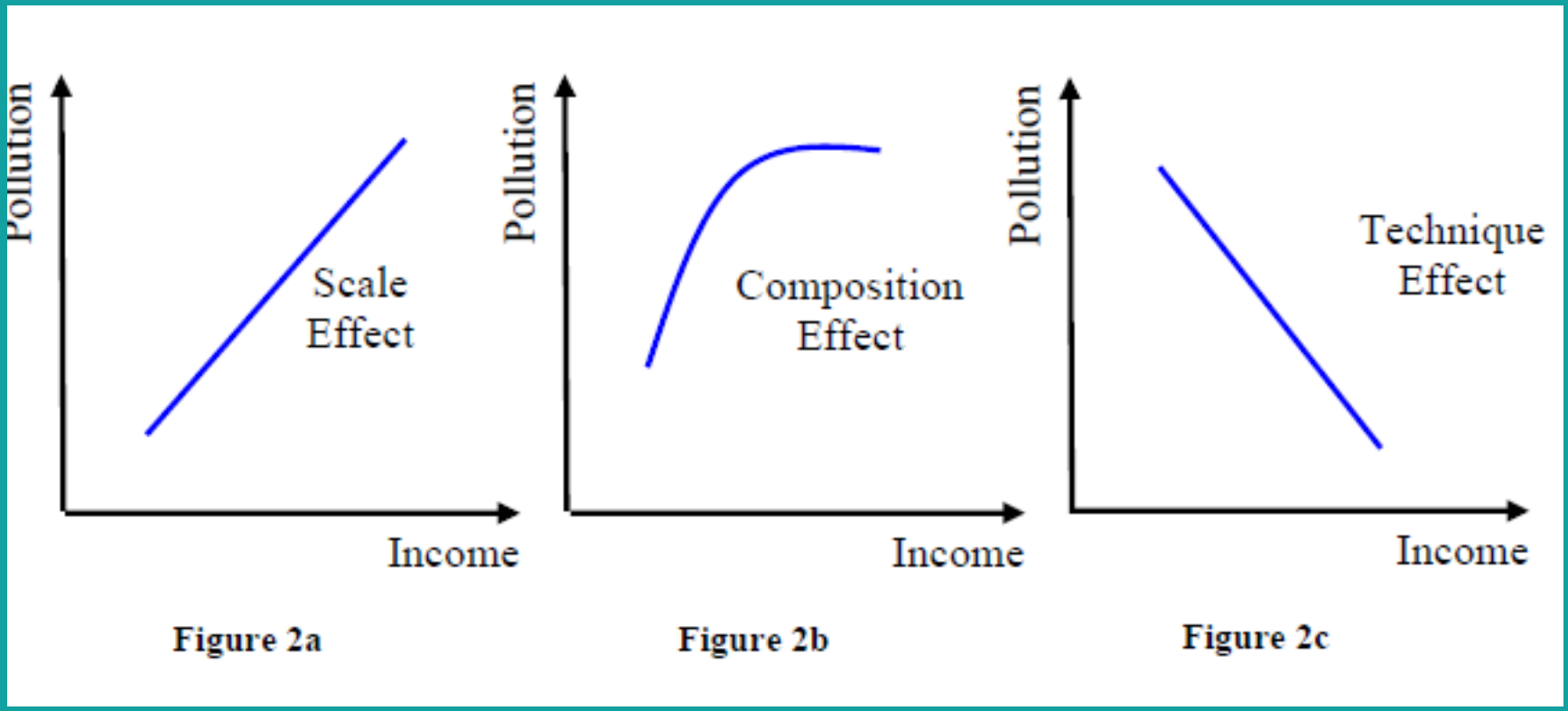
GDP $= a + b_1$MP10$+ b_2$numbers of vehicle (ii)

Application of EKC in Nepal: Analysis of KTM valley Report

Year	GDP	PM10
1990	7113	80
1991	7101	85
1992	7337	87
1993	7533	98
1994	7836	100
1995	8032	100
1996	8329	167
1997	8704	223
1998	9067	230
1999	9470	236
2000	9817	243
2001	9891	250
2002	10075	252.8
2003	10381	255.6
2004	10837	270



The Environmental Kuznet Curve: Hypothesis



Keynesian Consumption Function: A Study of Urban Population Of Nepal, Regression Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F
1	.95	.91	.906	384	1.70	137

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	Variables	B	Std. Error	Beta		
1	(Constant)	5972	258		23.0	.002
	PM10	.1566	1.3	.782	11.0	.000

THANK YOU