Assignment #1 ECO612

PRANAV KUMAR ANUPAM (231270017)
SARTHAK MOTWANI (200887)
SHOBHAN SARKAR (231270024)
VIDHI SINGH (231270030)

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1. a) GNP at market prices:
   GNP at market prices = GNP at factor cost + Indirect taxes - Subsidies
   GNP at market prices = Rs. 1,24,601 + Rs. 16,345 - Rs. 2,322
   GNP at market prices = Rs. 1,38,624
   Answer: GNP $_{MP}$ = Rs. 1,38,624.

   b) NNP at market prices:
   NNP at market prices = GNP at market prices - Depreciation
   NNP at market prices = Rs. 1,38,624 - Rs. 8,062
   NNP at market prices = Rs. 1,30,562
   Answer: NNP $_{MP}$ = Rs. 1,30,562

   c) NDP at market prices:
   NDP at market prices = GDP at market prices - Depreciation
   NDP at market prices = GNP at market prices - NFIA - Depreciation
   NDP at market prices = Rs. 1,38,624 - Rs. 320 - Rs. 8062
   NDP at market prices = Rs. 1,30,242
   Answer: NDP $_{MP}$= Rs. 1,30,242

   d) NDP at factor cost:
   NDP at factor cost = NDP at market prices - Net Indirect Taxes
   NDP at factor cost = Rs. 1,30,242 - (Rs. 16,345 - Rs. 2322)
   NDP at factor cost = Rs. 1,16,219
   Answer: NDP $_{FC}$ = Rs. 1,16,219

2. a) NNP at market prices:
   NNP at market prices = NDP at market prices + Net factor income from abroad
   NNP at market prices = Rs. 83,686 + (-233) = Rs. 83,453
   Answer: NNP $_{MP}$ = Rs. 83,453

   b) GNP at market prices:

GNP at market prices = NNP at market prices + Depreciation
GNP at market prices = Rs. 83,453 + Rs. 4957 = Rs. 88,410
Answer: GNP $_{MP}$ = Rs. 88,410

c) GNP at factor cost:
GNP at factor cost = GNP at market prices - Indirect taxes + Subsidies
GNP at factor cost = Rs. 88,410 - Rs. 9,689 + Rs. 1,772 = Rs. 80,493
Answer: GNP $_{FC}$= Rs. 80, 493

d) NDP at factor cost:
NDP at factor cost = GNP at factor cost - Depreciation
NDP at factor cost = Rs. 80,493 - Rs. 4957
NDP at factor cost = Rs. 75,536
Answer: NDP $_{FC}$ = Rs. 75,536

3. a) Depreciation:
Depreciation = GNP at market price- NNP at market prices
Depreciation = 1,03,000 - Rs. 99,000 = Rs. 4000
Answer: Depreciation = Rs. 4000

b) Net factor income from abroad:
Net factor income from abroad = NNP at market prices - NDP at market price
Net factor income from abroad = Rs. 99,000 - Rs. 1,01,422 = - Rs. 2422
Answer: NFIA = - Rs. 2422

c. Subsidies:
Subsidies = GNP at factor cost - GNP at market price + Indirect taxes
Subsidies = Rs. 1,03,000 - Rs. 14,000 + Rs. 14,000 = Rs. 9,000
Answer: subsidies = Rs. 9,000

d. NDP at factor cost:
NDP at factor cost = NDP at market prices - Net Indirect Taxes + Subsidies
NDP at factor cost = Rs. 1,01,422- Rs. 14,000 + Rs. 9000
Answer: NDP $_{FC}$ = Rs. 96,422

e. National income:
National income = NNP at factor prices - Indirect taxes + Subsidies
National income = Rs. 99,000 - Rs. 14,000 + Rs. 9,000 = Rs. 94,000
Answer: NI= Rs. 94,000

Q4

Chhattisgarh

Chhattisgarh had real GSDP growth in 2019-20 2020-21 2021-22 & 2022-23 of 2.8 -1.8 8.5 8.0 percent against that of India at 3.9, -5.8, 9.1 & 7.2 percent respectively.

Slowdown due to covid-19 in percentage of GDP term was not as severe as over India as a whole. GSDP did not go below 2018-19 level and Recovery has been comparable to India.

Coming to Revenue Deficit – in 2020-21 2021-22 & 2022-23 is at 2.0, 0.3 & -0.3 . Revenue deficit has decreased and came down below 0 in this year's budget estimate which is a good sign.

Gross Fiscal deficit in 2020-21 2021-22 & 2022-23 is at 4.5, 3.8, 3.3 percent which is well below the target of 4% set down by center.

GSDP (% Growth over previous year) (Source: calculated based on data from MoSPI)											
State/Country	**2012-13**	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Chhattisgarh	5.0	10.0	1.8	2.6	12.1	3.0	11.1	2.8	-1.8	8.5	8.0
Madhya Pradesh	11.5	3.8	5.2	9.1	12.4	5.6	9.3	4.5	-4.2	10.4	7.1
Rajasthan	4.5	7.0	7.3	8.0	5.9	5.2	2.4	5.2	-2.0	11.4	8.2
Telangana	3.0	5.4	6.8	11.6	9.3	9.7	9.2	5.4	-6.0	12.0	7.8
India(GDP)	5.5	6.4	7.4	8.0	8.3	6.8	6.5	3.9	-5.8	9.1	7.2

Madhya Pradesh

Madhya Pradesh had real GSDP growth of 4.5 -4.2 10.4 & 7.1 percent in 2019-20 2020-21 2021-22 & 2022-23 respectively. GSDP did not fell down below 2018-19 level .

Coming to Revenue Deficit – in 2020-21 2021-22 & 2022-23 is at 1.9, 0.5 & 0.3. Revenue deficit has came down which was at peak due to pandemic but still it is not below zero.

Gross Fiscal deficit in 2020-21 2021-22 & 2022-23 is at 5.1, 3.7 & 4.0 which is within the target set by union govt. but just marginally and revised estimate may change that.

Rajasthan

Rajasthan has real GSDP growth in 2019-20 2020-21 2021-22 & 2022-23 of 5.2 -2.0 11.4 & 8 .2 percent. Clearly slowdown due to pandemic was not extreme and recovery have been rapid after that.

Revenue deficit in 2020-21 2021-22 & 2022-23 is 4.3, 3 & 2.8 percent of GSDP. It has gone down it requires more attention. The main reason for this has been around 11% increase in expenditure due to salary and 6% in pension.

Gross fiscal deficit in 2020-21 2021-22 & 2022-23 is 5.9, 5.2 & 4.4. It well beyond the target set by FRBM Act. Half of the contribution of this has been revenue deficit and other half is due to 24% increase in capital outlay. Highest of which is for irrigation and flood control and water supply and sanitation which is going to improve the condition of farmers and these infrastructure are needed to offset the damage caused by unusual change in weather pattern. Capital expenditure on health and education is expected to increase by 49% and 76%. With cost of private education and healthcare rising it is necessary for govt. to invest more in these sector to improve human resources.

Government needs to do cost cutting measures to decrease the deficits.

Deficit Indicator (deficit/GSDP) (Source:RBI)									
	2020-21			2021-22			2022-23		
State	RD	GFD	PD	RD	GFD	PD	RD	GFD	PD
Chattishgarh	2	4.5	2.9	0.3	3.8	2.1	-0.2	3.3	1.7
Madhya Pradesh	1.9	5.1	3.5	0.5	3.7	1.9	0.3	4	2.3
Rajasthan	4.3	5.9	3.4	3	5.2	2.8	1.8	4.4	2.2
Telangana	2.3	5.1	3.3	-0.4	3.9	2.4	-0.3	4	2.6
All State	1.9	4.1	2.1	0.9	3.7	1.9	0.3	3.4	1.6

Telangana

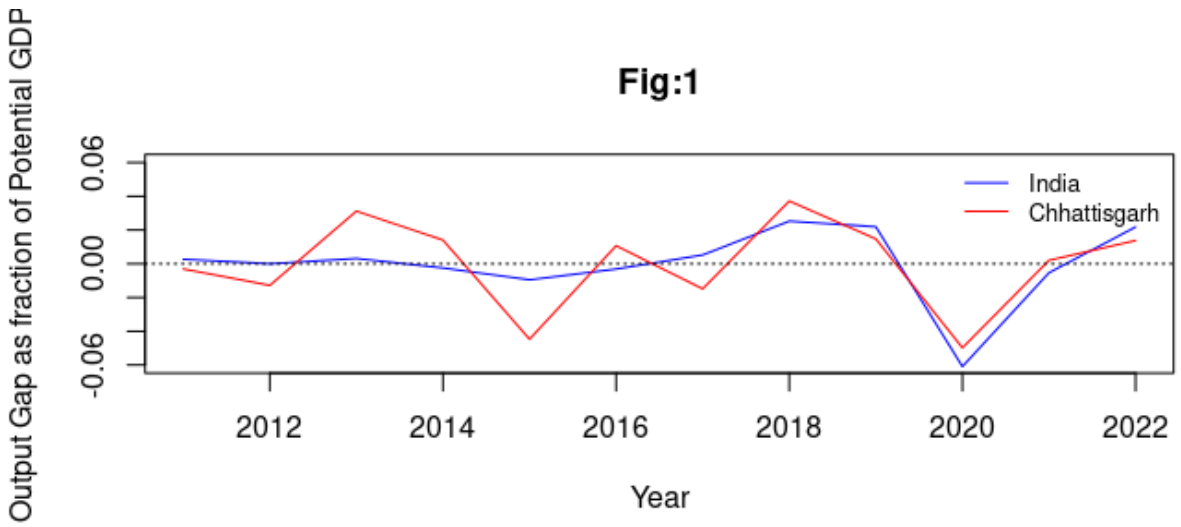
Telangana has real GSDP growth in 2019-20 2020-21 2021-22 & 2022-23 of 5.4 -6.0 12.0 & 7.8 percentage. GSDP went down below 2018-19 period in 2020-21. Pandemic was difficult period for the state, but economy did bounce back after that rapidly, but the growth rate has not caught up to pre-pandemic level.

Revenue deficit in 2020-21 2021-22 & 2022-23 is 2.3, -0.4, -0.3 which is good as it is below zero.

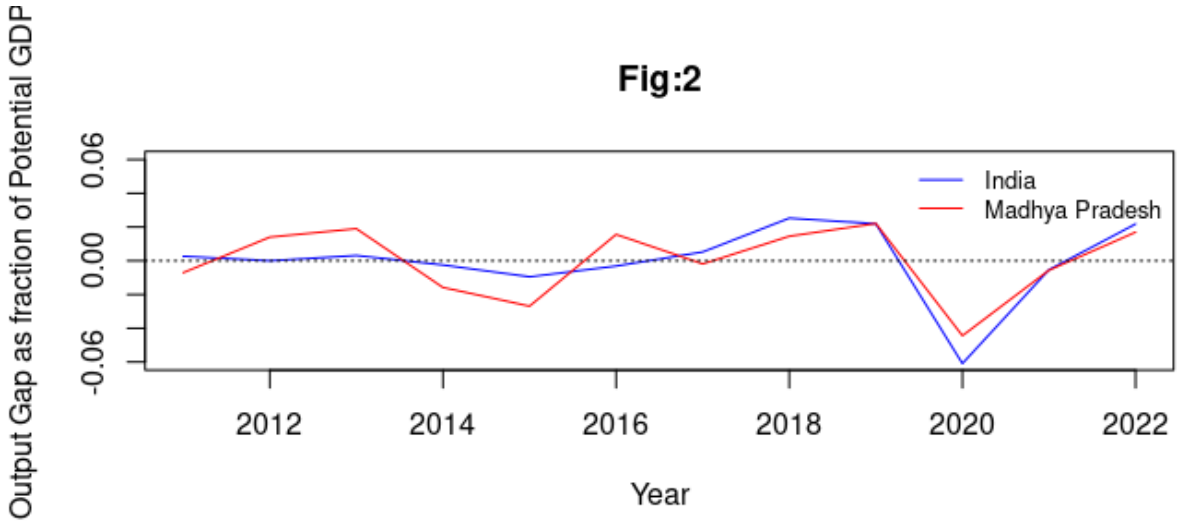
Gross fiscal deficit in 2020-21 2021-22 & 2022-23 is 5.1, 3.9 & 4 . which is just within the set target.

State government need to cut down expenditure to improve deficit scenario.

Q5.



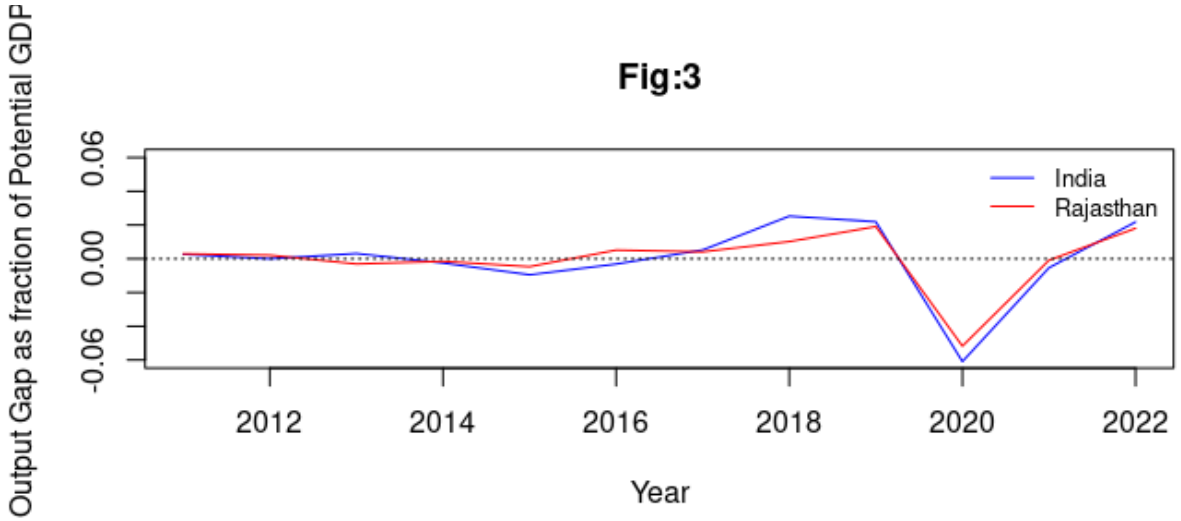
As we see in fig:1 the direction of output gap is almost the same but intensity of output gap is higher in Chhattisgarh than in whole India. Dip in 2015-16 can be ascribed to the banking crisis and of 2017-18 to slow down induced by demonetization. Of 2020-21 , intensity of which is largest amongst all, is due to COVID-19 Lockdown. This is the trend in all of the figures below corresponding to each state albeit the intensity certainly differs for different states. Output gaps are indicative of the demand sock and overall outlook of the economy. Negative output gap suggests recession/weak demand and positive output gap suggests boom/ strong demand.



Long lockdown in 2020-21 due to COVID-19 was a difficult time for every state of India. Uncertainty of expenditure due to health was a concern for the people. When there is uncertainty of large expenditures, people cut down on unnecessary expenditures and try to save some money for rainy days. Also, due to restrictions imposed on the marketplace, access to the market decreased.
This culminated in falling demand to a record low which can be seen in the intensity of dip corresponding to the 2020 point(which is corresponding to 2020-21) in the graph.

By FY 2021-22 things stabilized, covid-19 subsided, markets opened, this increased the confidence of people and that led to bouncing back of demand and hence output gap came up to zero.

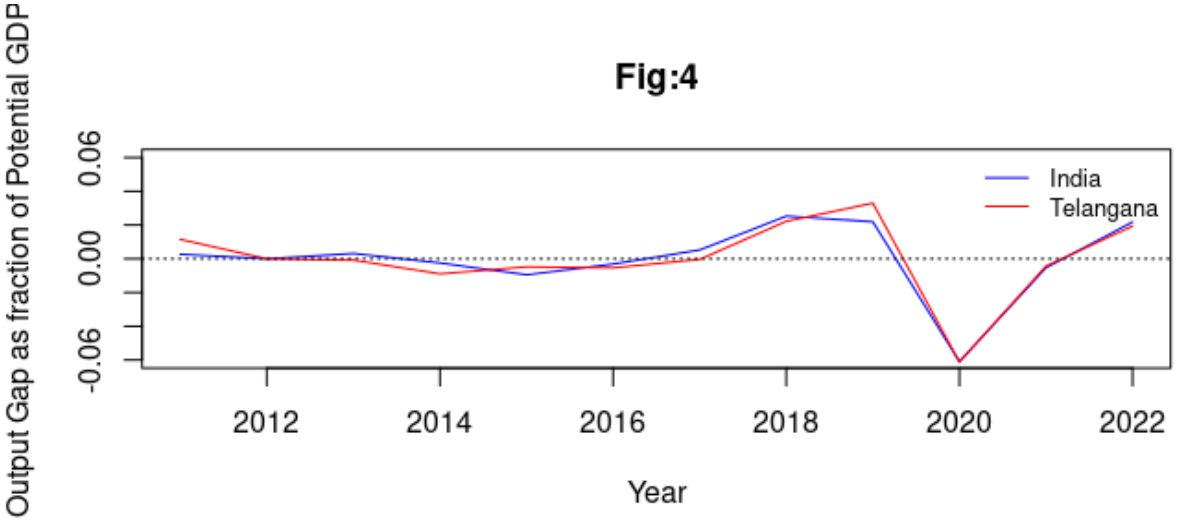
Due to demonetization in Nov-2016 money supply fell. As due to sudden falling of money supply money available to consumers became low but price didn't come down and due to liquidity crunch for a few months demand for goods and services came down from the natural level.



But there was another factor in play too, the velocity of money. Due to shortage of cash, some people started using digital wallets. Increasing use of digital transactions causes an increase in velocity of money. This did offset some part of the slowdown induced.
For more techno-literate people it was an easy transition. But the proportion of techno-literate people in every state is not the same. Chhattisgarh with less literacy will definitely have less people doing digital transactions and this shows a large dip in the output gap of the state. But for others that slowdown is offset by velocity effect as we see that output gap converges to that of India.

In year preceding 2015-16, after years of continued growth, the growth rate was slowing down. To rejuvenate the economy fresh loans were needed but banks were struggling to give out loans. RBI

conducted audits of banks and found many of assets that were NPA were not declared as one i.e. NPA was much larger than what banks were earlier informing the RBI. This lead to



R code used to calculate output gap and plot the curve above:

```
rm(list=ls())

library(mFilter)

a=read.csv('/home/pranav/Downloads/data.csv')


w1=ts(a$Chhattisgarh,start = 2011,end = 2022,frequency =1)

w2=ts(a$Madhya.Pradesh,start = 2011,end = 2022,frequency =1)

w3=ts(a$Rajasthan,start = 2011,end = 2022,frequency =1)

w4=ts(a$Telangana,start = 2011,end = 2022,frequency =1)

w5=ts(a$INDIA,start = 2011,end = 2022,frequency =1)



hpf1=hpfilter(w1,type='lambda',freq = 1,drift =FALSE)

hpf2=hpfilter(w2,type='lambda',freq = 1,drift = FALSE)

hpf3=hpfilter(w3,type='lambda',freq = 1,drift = FALSE)
```

```
hpf4=hpfilter(w4,type='lambda',freq = 1,drift = FALSE)

hpf5=hpfilter(w5,type='lambda',freq = 1,drift = FALSE)

og1=hpf1$cycle/hpf1$trend

og2=hpf2$cycle/hpf2$trend

og3=hpf3$cycle/hpf3$trend

og4=hpf4$cycle/hpf4$trend

og5=hpf5$cycle/hpf5$trend




plot(og5,ylim=c(-0.06,0.06),xlab="Year",ylab="Output Gap as fraction of Potential
GDP",col='blue',main='Fig:1')

lines(og1,col='RED')

abline(h=0,lty=3)

legend("topright", legend = c("India", "Chhattisgarh"), col = c("blue", "red"), lty = 1,bty = "n",cex=0.8)


plot(og5,ylim=c(-0.06,0.06),xlab="Year",ylab="Output Gap as fraction of Potential
GDP",col='blue',main='Fig:2')

lines(og2,col='RED')

legend("topright", legend = c("India", "Madhya Pradesh"), col = c("blue", "red"), lty = 1,bty = "n",cex=0.8)

abline(h=0,lty=3)


plot(og5,ylim=c(-0.06,0.06),xlab="Year",ylab="Output Gap as fraction of Potential
GDP",col='blue',main='Fig:3')

lines(og3,col='RED')

legend("topright", legend = c("India", "Rajasthan"), col = c("blue", "red"), lty = 1,bty = "n",cex=0.8)

abline(h=0,lty=3)


plot(og5,ylim=c(-0.06,0.06),xlab="Year",ylab="Output Gap as fraction of Potential
GDP",col='blue',main='Fig:4')
```

lines(og4,col='RED')

legend("topright", legend = c("India", "Telangana"), col = c("blue", "red"), lty = 1,bty = "n",cex=0.8)

abline(h=0,lty=3)

data.csv

Year	Chhattisgarh	Madhya Pradesh	Rajasthan	Telangana	INDIA
2011-12	158074	315562	434837	359434	8736329
2012-13	177511	380925	493551	401594	9944013
2013-14	206833	439483	551031	451580	11233522
2014-15	221118	479939	615642	505849	12467959
2015-16	225163	541068	681482	577902	13771874
2016-17	262802	649823	760587	658325	15391669
2017-18	282737	726284	832529	750050	17090042
2018-19	327107	829805	911519	857427	18899668
2019-20	344648	927855	998679	950090	20103593
2020-21	347752	961643	1019442	942814	19829927
2021-22	406416	1136137	1218193	1128907	23471012
2022-23	457608	1322821	1413620	1313391	27240712

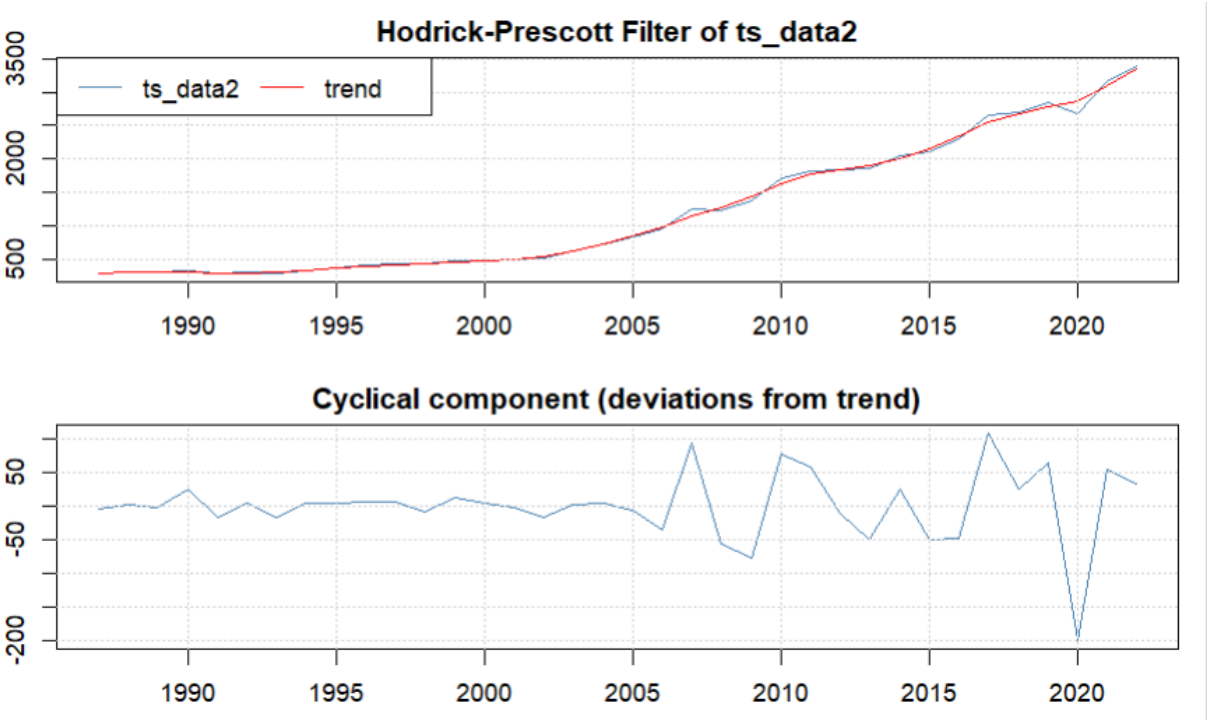
Q6- A

After getting the data of Annual GDP from year 1987 to 2022, for India, USA, and the global GDP, we estimate the potential output by using hpfilter in R. The trend component of the output of hpfilter is considered to be the potential output corresponding to that particular year. The following is the R code to compute the trend component of the global GDP data (same exercise is repeated for India and USA GDP).

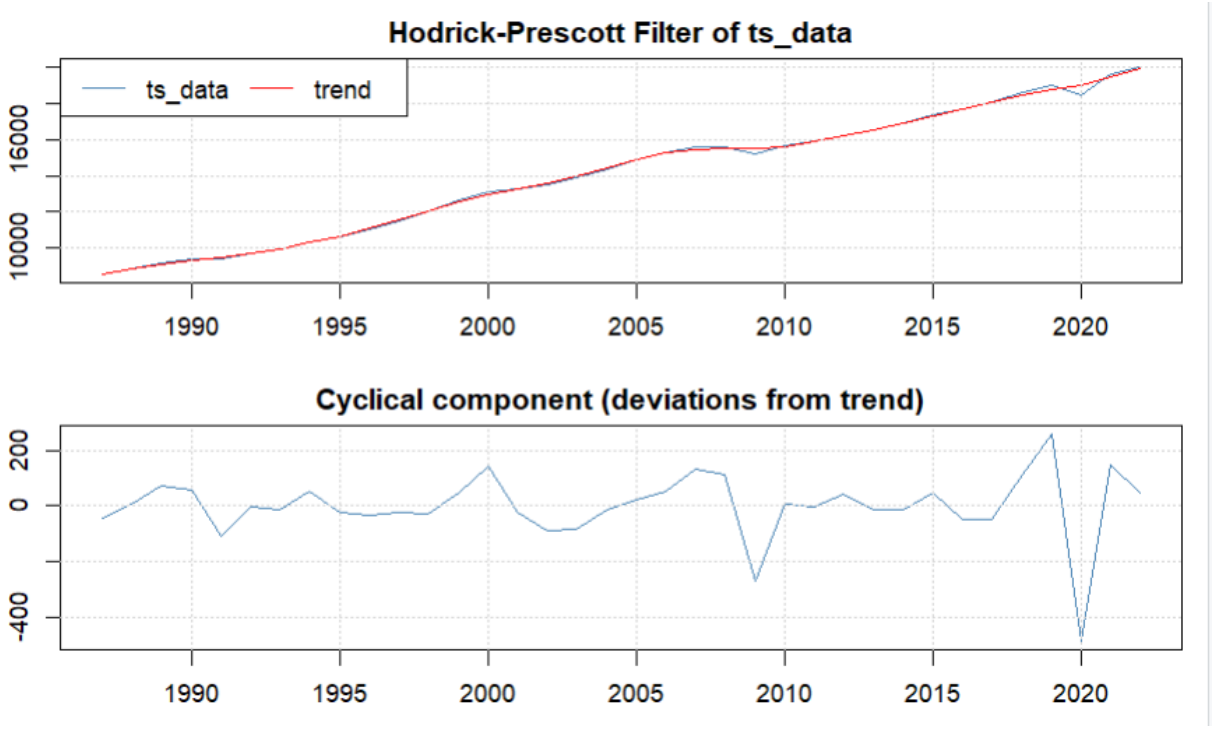
```
>ts_data=ts(Global_GDP$Global_GDP,start = 1987,end=2022,frequency = 1)
>library(mFilter)
>hpf <- hpfilter(ts_data, freq = 1, type = "lambda", drift = FALSE)
>plot(hpf)
>View(hpf)
>hpf$trend
>hpf$cycle
>Global_GDP['Trend'] = hpf$trend
>write.table(Global_GDP, file="Global_gdp_with_trend.csv", sep=",")
>View(Global_GDP)
```

The following are the trend and cyclical components of GDP data:

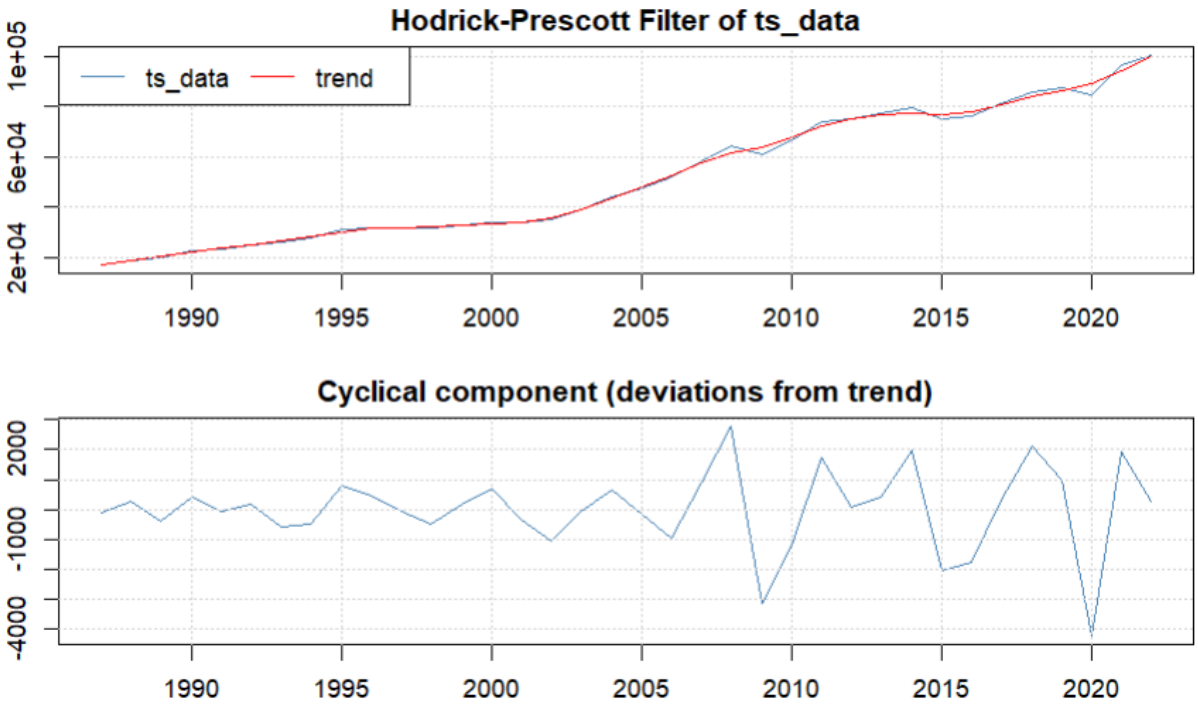
(i) Trend and Cyclical Component of India's GDP (1987-2022):



(ii) Trend and Cyclical Component of USA's GDP (1987-2022):



(iii) Trend and Cyclical Component of Global GDP (1987-2022):



Computation of Output Gap:

We compute the output gap, each for India, USA and global GDP using the following relation.

$$Output\ Gap = Actual\ Output - Potential\ Output\ (Trend\ Component)$$

The following are the data sets corresponding to the output gap:

(i) India GDP (1987 – 2022):
https://docs.google.com/spreadsheets/d/1uzAA5iuSKl3CPG5esl3Jh6iHEkCDri-9/edit?usp=drive_link

(ii) USA GDP (1987 – 2022):
https://docs.google.com/spreadsheets/d/19R1LA1drCifcie59whu6o7UueHtWROJD/edit?usp=drive_link&ouid=106179900781317005937&rtpof=true&sd=true

(iii) Global GDP (1987 – 2022):
https://docs.google.com/spreadsheets/d/1wN6-ipClIhxsa8USxSXptE4YL7gai8xi/edit?usp=drive_link

We then organize the above data as Panel Data in which the independent variable is the global output gap Y_{gt} and the domestic output gap is the dependent variable Y_{dit} (*id = 1* for India and *id = 2* for USA). The following is the Panel Data:

https://docs.google.com/spreadsheets/d/1wTLRCOMnedDc_XVtEjFXkauo2Hc2nEt1/edit?usp=drive_link&ouid=106179900781317005937&rtpof=true&sd=true

Estimating correlation between domestic and global output gaps:

To estimate the relation between domestic and global output gaps, we estimate the below equation using fixed-effect (within-group) Panel data regression in R.

$$Y_{dit} = \alpha_i + \beta Y_{gt} + \varepsilon_{it}$$

The following is the code to do the fixed-effect (within-group) Panel data regression in R:

>pdata <- pdata.frame(Panel_Data_Yd_Yg, index=c("id","Year"))
>fixed <- plm(Y_dit ~ Ygt, data=pdata, model= "within")
>summary(fixed)

The following is the output of the regression:

```
Oneway (individual) effect Within Model

Call:
plm(formula = Y_dit ~ Ygt, data = pdata, model = "within")

Balanced Panel: n = 2, T = 36, N = 72

Residuals:
     Min.   1st Qu.    Median   3rd Qu.      Max.
-305.7199  -29.1969    2.4263   30.0343  215.9091

Coefficients:
     Estimate Std. Error t-value  Pr(>|t|)
Ygt 0.0436311  0.0063823  6.8362 2.631e-09 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Total Sum of Squares:    627550
Residual Sum of Squares: 374140
R-Squared:      0.4038
Adj. R-Squared: 0.38652
F-statistic: 46.7339 on 1 and 69 DF, p-value: 2.6312e-09
```

Estimating Orthogonal Domestic Output Gaps:

After estimating the slope coefficients, we estimate the orthogonal domestic output gap as the combined residual, namely the sum of the fixed-error component α_i, and of the overall error component ε_{it} using the following equation.

$$Y_{doit} = \alpha_i + \varepsilon_{it} = Y_{dit} - \beta Y_{gt}$$

The following are some summary statistics for the orthogonal component (orthogonal to global output gap) for India and USA:

(i) Y_{doit} summary statistics for India's output gap:

Mean	Std. deviation	Min	Max

-5.44947E-13	50.96724439	-192.72434	102.7486771

(i) Y_{doit} summary statistics for USA's output gap:

Mean	Std. deviation	Min	Max
0.871390921	115.9597127	-468.9865338	247.8768846

Interpretation of the Results:

The estimated coefficient for Y_{gt} is 0.0436 with a standard error of 0.0064. This suggests that, on average, a one-unit increase in the global output gap (in Billion US$) corresponds to a 0.0436-unit increase in the domestic output gap (in Billion US$), while accounting for individual-specific effects. The t-value of 6.8362, along with a very low p-value (2.631e-09), indicates high statistical significance, affirming a substantial relationship between the global and domestic output gaps. The model explains around 40.38% of the total variability in the domestic output gap, as denoted by the R-Squared value. The analysis highlights a statistically significant and economically meaningful association between global and domestic output gaps in the panel dataset.

The orthogonal domestic output gap, combining fixed and overall error components, is analysed for India and the USA. For India, the mean is virtually zero, implying a balance between fixed and error effects. The standard deviation of 50.97 suggests moderate variability. In the USA, a slightly positive mean of 0.87 indicates a tendency towards above-trend output gap because of the fixed effect. A higher standard deviation (115.96) implies greater variability. The computation of orthogonal domestic output gap allows to exclude the effect of global output gap on domestic output gap.

Q6-b

Explanation of Table 1

Table 1
Sources of inflation persistence-hybrid NKPC.

Dependent variable inflation – π_t		
	Pre-crisis period	Including post-crisis period
$\pi_{(t-1)}$	0.57 (28.31)	0.59 (17.05)
π_t^e	0.35 (17.17)	0.38 (16.32)
Y_{t-1}	0.16 (11.26)	0.12 (3.16)
$SShock_t$	−0.03 (−2.94)	−0.027 (−3.29)
e_t	0.05 (10.07)	0.03 (2.99)
Sacrifice ratio	2.69	3.37
Exchange rate pass-through (long-run)	0.11	0.06
$\bar{R}^2$	0.87	0.94
J-statistic	7.75 [0.98]	11.8 [0.86]
LB-Q statistics (3)	6.48 [0.09]	4.8 [0.19]
Wald test (χ^2) ($\pi_{(t-1)} + \pi_t^e = 1$)	47.94 [0.00]	1.69 [0.19]
Weak Instruments Tests		
KP Wald tests	20.31	5.65
AR Wald test F (p-value)	223.22 [0.00]	42.21 [0.00]

Table 1 is described as ***"sources of Inflation persistence that is hybrid NKPC"*** and the dependent variable here is regarded as inflation (Patra et al. 2017). I have seen two-period estimates in order to check ***macroeconomic parameters*** in the post-crisis period. The inflation rate increased from 0.57 to 0.59 during the post-global crisis period. I have found that flood inflation has more resistance than price indices and CPI is higher than WPI. Bems et al. (2021) noted that ***Inflation persistenc***e is defined by past inflation rates that reflect an idea of inflation which tends to exhibit a certain level of stickiness or inertia over time.

Explanation of Table 2

Table 2
Estimates of aggregate demand (IS) curve.

Dependent variable output gap – Y_t		
	Pre-crisis period	Including post-crisis period
$rr_{(t-2)}$		−0.087 (−14.01)
$rr_{(t-3)}$	−0.11 (−8.22)	
Y_{t-1}	0.61 (26.18)	0.70 (32.65)
$OECD\_G_t$	0.098 (5.71)	0.14 (6.64)
$DShock_t$	0.12 (21.96)	0.08 (11.97)
$\bar{R}^2$	0.57	0.60
J-statistic	7.24 [0.99]	12.20 [0.99]
LB-Q statistics (3)	1.03 [0.79]	0.58 [0.90]
Weak instruments tests		
KP Wald tests	17.16	38.32
AR Wald test F (p-value)	6086.23 [0.00]	166.78 [0.00]

Table 2 depicts the estimated aggregate demand of the IS curve that vindicates global recovery is more important than the domestic economy. I have evaluated that the importance of domestic demand shocks declined in the post-crisis period. These are influenced by the slope of aggregate demand to real interest rates and inflation (Patra et al. 2017). According to me, the importance of domestic demand declined after the global crisis as well as estimated aggregate demand increased to achieve the target market. Bekaert et al. (2020) opined that Aggregate demand is used to describe total goods produced domestically in the macro economy including services, goods and capital goods.

Q6-c

The analysis of the monetary transmission mechanism in these economies requires a model specification that is distinct from that of developed nations because the major central banks of the world—the Federal Reserve Bank, the European Central Bank, and the Bank of Japan—constrain monetary policies in emerging economies. The authors of this research estimate a number of VAR models to investigate three monetary policy transmission channels in India. These are the asset price channel, the exchange rate channel, and the bank lending channel.

A vector of exogenous foreign variables and a vector of endogenous domestic variables make up the benchmark VAR model. To precisely identify the benchmark VAR model, the authors placed limitations on the contemporaneous impacts of endogenous variables. The benchmark VAR model's findings imply that the overnight call money rate is temporarily impacted by an unexpected monetary policy shock. Following an unexpectedly favourable overnight call money rate shock, prices and GDP decrease. Additionally, prices begin to drop following a decline in GDP.

Banks are the foundation of the Indian economy. Since 2005, more than 70% of all domestic credit has been provided by banks to the commercial sector. Since 1999, there has been a steady fall in the currency to deposit ratio. These facts imply that banks are crucial to financial intermediation and that there aren't many other funding options available for the non-financial sector. The empirical findings support the notion that the bank lending channel plays a crucial role in how monetary policy shocks are transmitted to the real economy.

India's capital markets may not be as developed as other developed nations based on the lower market capitalisation of listed companies there. The asset price channel is not significant in the transmission of monetary policy shocks to the Indian real sector, according to empirical estimates in the enhanced VAR model.

Despite their claims to the contrary, central banks in emerging economies often stabilise currency rates. The Reserve Bank of India has made significant market interventions in an effort to stabilise the currency rate, weakening the exchange rate channel. The real effective exchange rate's transient reaction to an unexpected tightening of monetary policy shows that the exchange rate channel is not crucial for the transmission of monetary policy shocks in India.

Some significant theoretical and policy consequences are provided by this analysis. First, the monetary policy of the Fed restricts Indian monetary policy. Therefore, the federal funds rate must be included in the Reserve Bank of India's information set in order to analyse Indian monetary policy. The bias is lessened by a suitable model formulation that takes into account the external restraints on monetary policy and controls for global economic events. In order to stabilise the exchange rate, the Reserve Bank of India intervenes heavily in the foreign exchange market. It appears that the Indian rupee is fixed to the US dollar. As a result, in order to fully understand the monetary transmission mechanism in India, it is necessary to analyse both the GDP and exchange rate responses to monetary policy shocks. Third, banks play a significant role in financial intermediation in the Indian economy, and their dominance is a reflection of the absence of private sector funding alternatives.