

Benchmarking & Backcasting GDP of Indonesia Base Year 2010





What is Benchmarking ?

- Benchmarking is a technique to combine data from two sources with different time frequency :
for example data with monthly/quarterly frequency, which believe to be less accurate, on the other hand data with annual frequency is believed to be more complete and accurate; therefore annual data usually used as *benchmark* for monthly/quarterly data.
- The main purpose of benchmarking is to distribute the difference between two series of data so that trend of final series is closely similar with the actual/original series.



Method of Benchmarking

- Mostly known benchmarking method is **Proportional Denton Method** which maximize certain short-term movements of monthly/quarterly data, and produce benchmark series as close as the actual.
- It is done by minimizing the difference (in “least squares”) month to month (or quarter to quarter) percentage change of the original benchmark series.
- There is a computer program called BENCH made by Statistics Canada to compute benchmarking process.



Exercise 1 : Benchmarking Annual and Quarterly GDP

Annual GDP Bench 2000 & 2005

Sektor	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Pertanian	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
a. Tabama	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
c. Jasa PRT	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PDB	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Quarterly GDP Bench 2000 & 2005

Sektor	Q1	Q2	Q3	Q4	2000	---	Q1	Q2	Q3	Q4	2010
1. Pertanian	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
a. Tabama	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
c. Jasa PRT	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
PDB	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx

Annual GDP old series, 2000=100

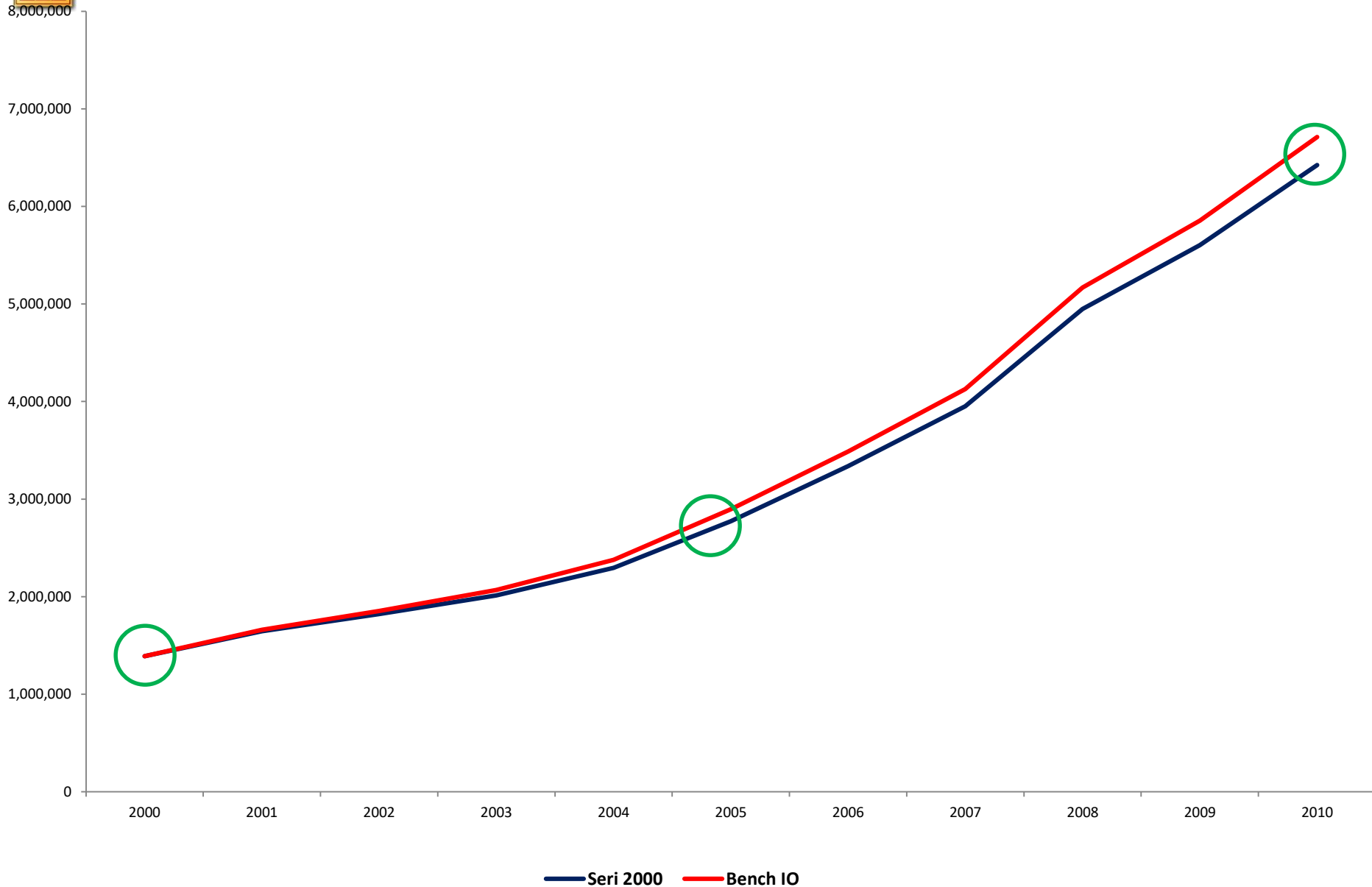
Sektor	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Pertanian	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy
a. Tabama	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy
:	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy
:	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy
:	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy
:	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy
c. Jasa PRT	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy
PDB	xxx	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy	yyy

Quarterly GDP old series, 2000=100

Sektor	Q1	Q2	Q3	Q4	2000	.....	Q1	Q2	Q3	Q4	2010
1. Pertanian	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
a. Tabama	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
c. Jasa PRT	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
PDB	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa

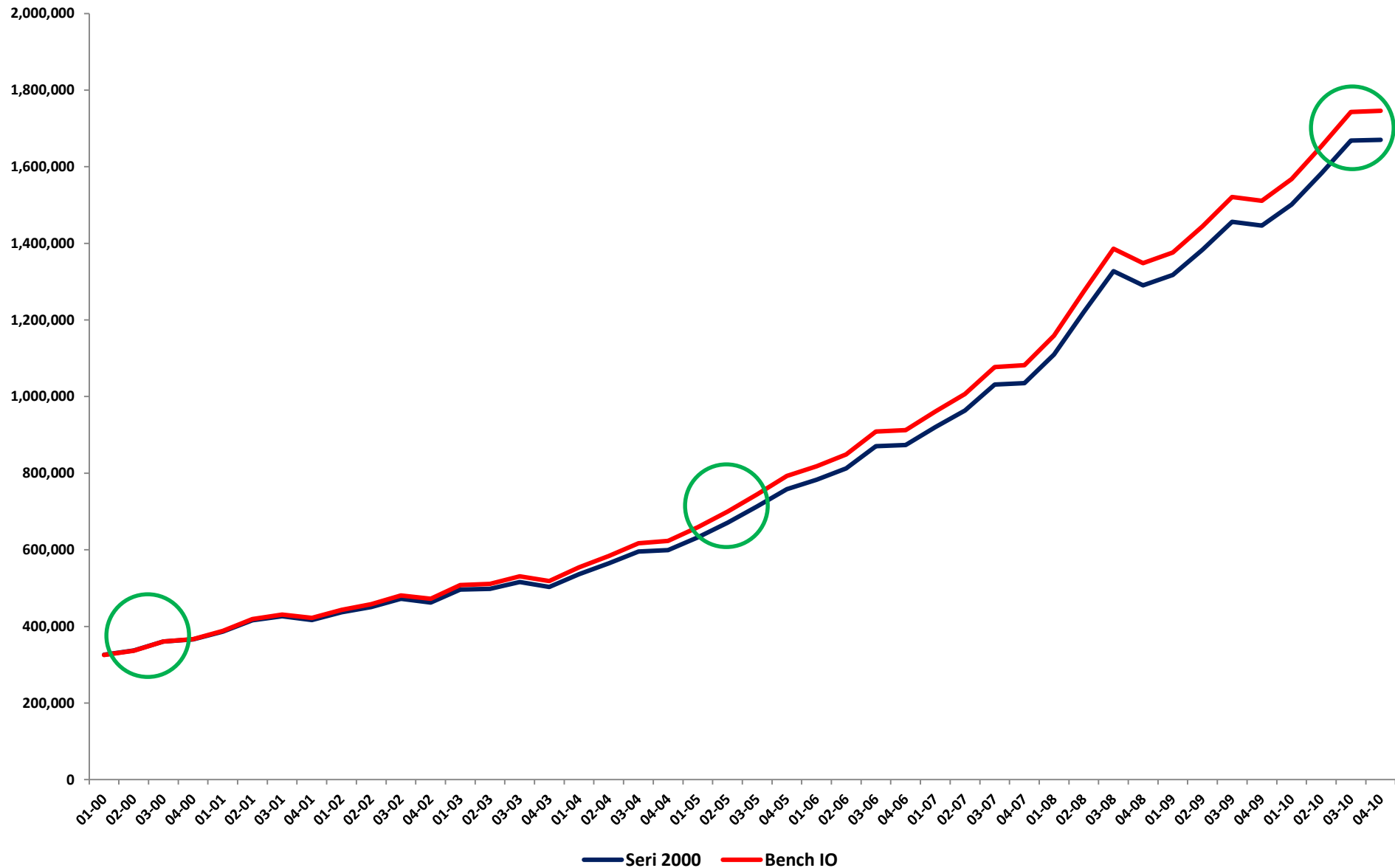


Annual Current Price GDP 2000 - 2010 (Billion Rp)

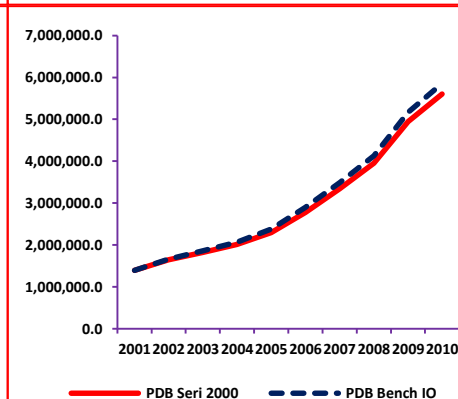
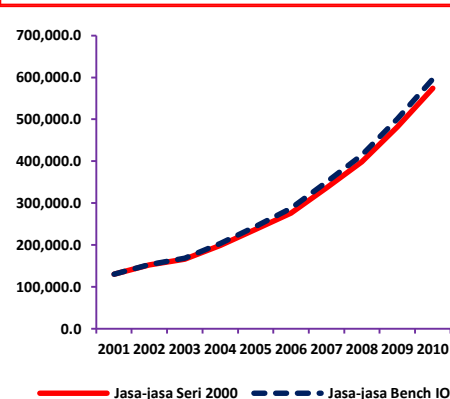
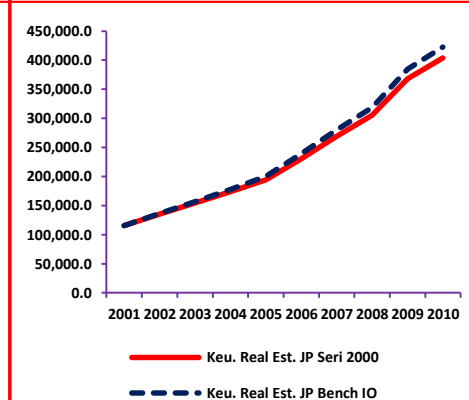
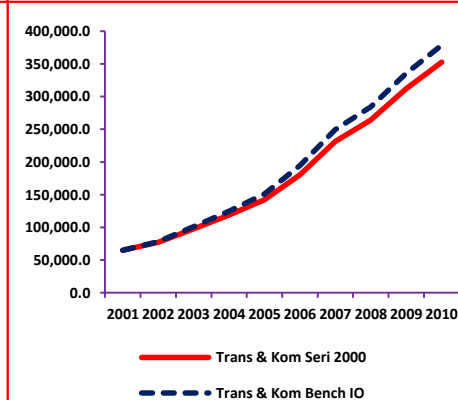
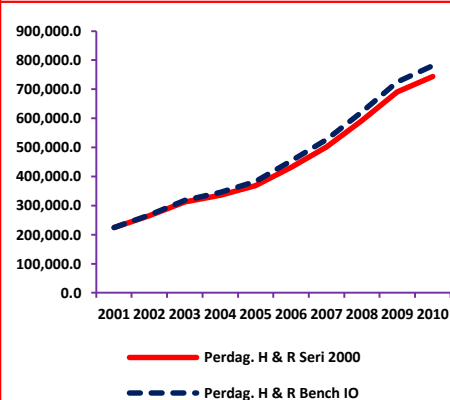
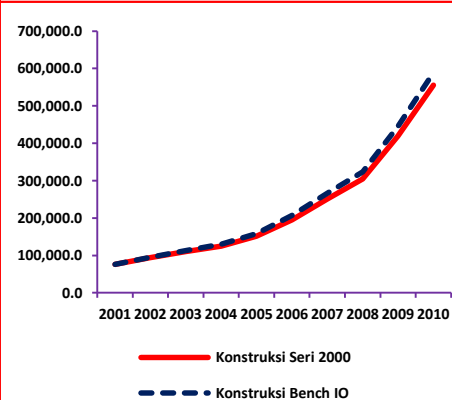
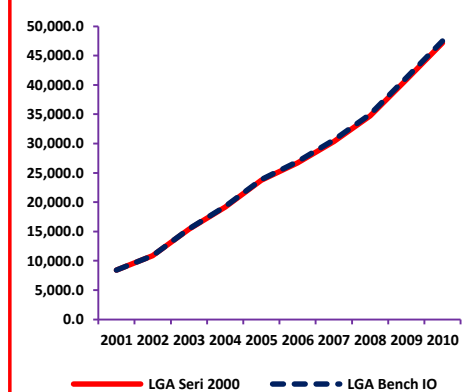
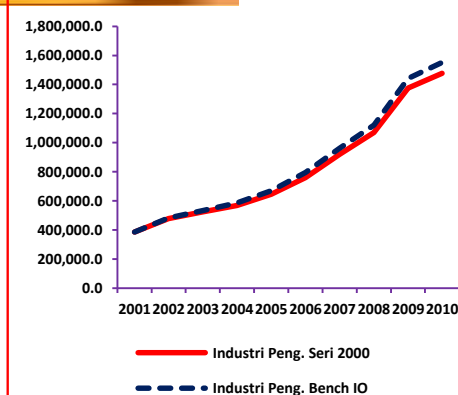
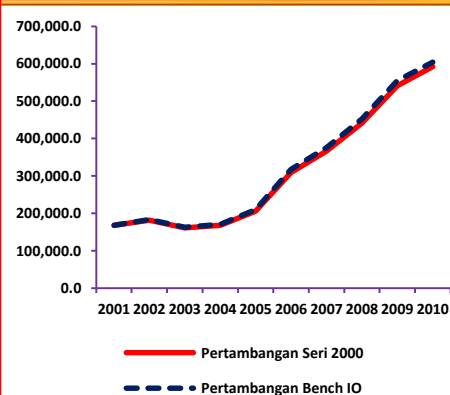
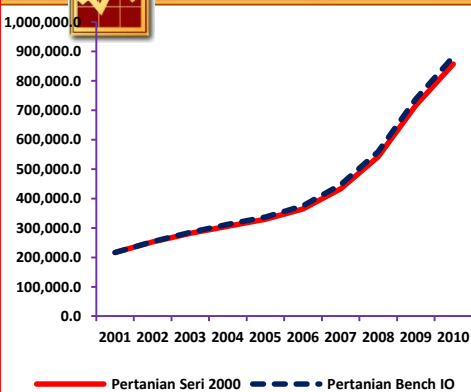




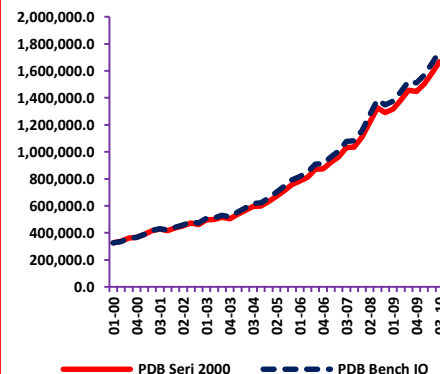
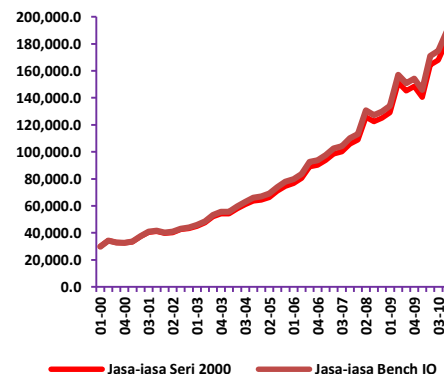
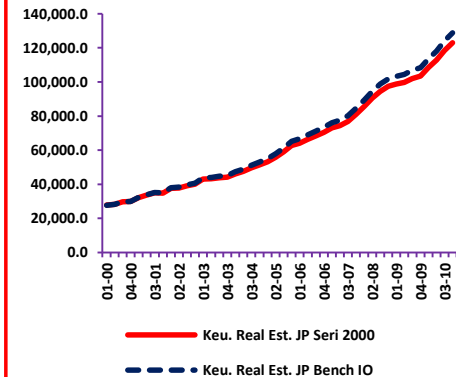
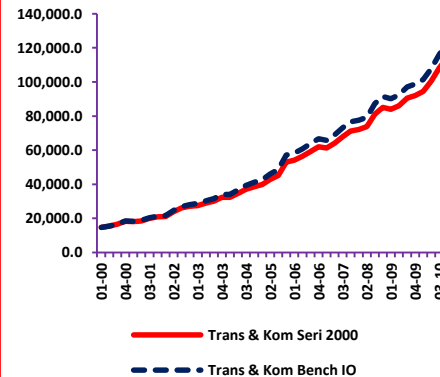
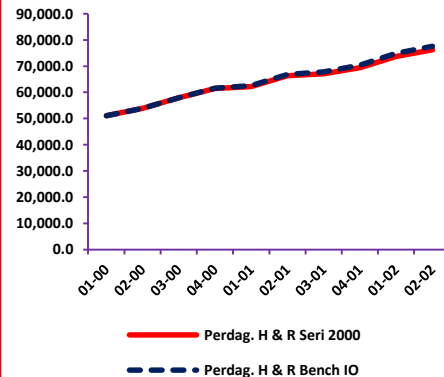
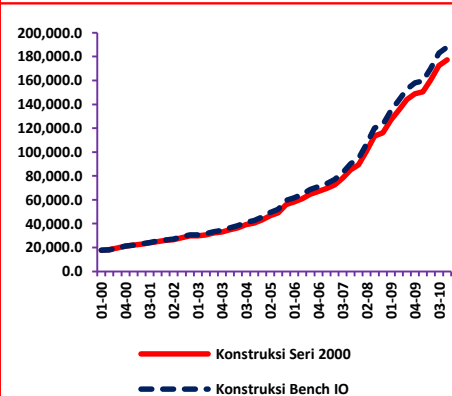
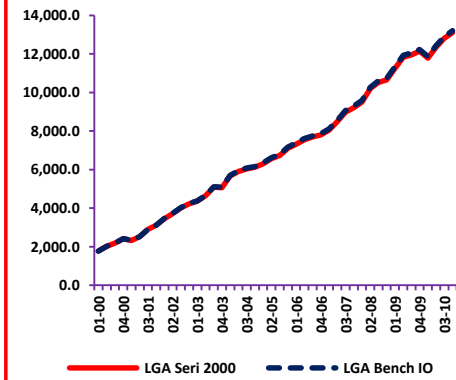
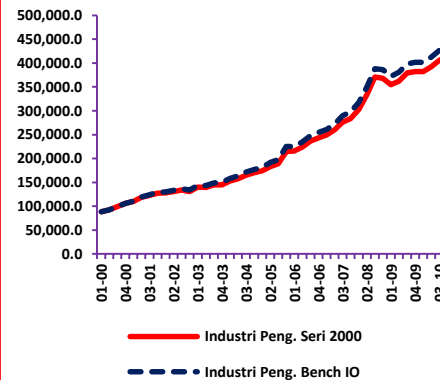
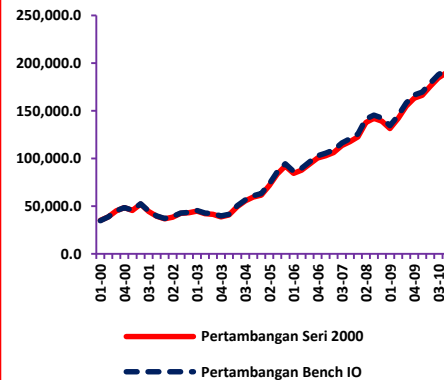
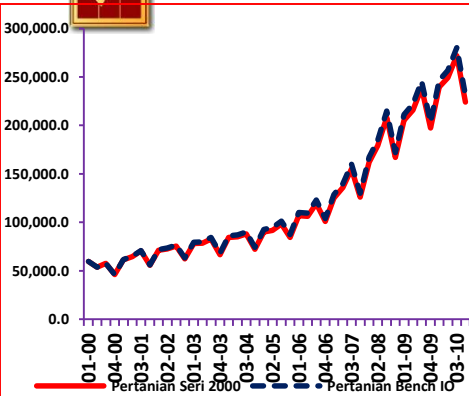
Quarterly Current Price GDP 2000 - 2010 (Billion Rp)



Annual GDP by Industries 2000 - 2010 (Billion Rp)



Quarterly GDP by Industries 2000 - 2010 (Billion Rp)





Exercise 2 : Backcasting 2010 Constant Price GDP

Constant GDP Series 2010=100 Bench 2000 & 2005

Sektor	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Pertanian	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
a. Tabama	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
:	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
c. Jasa PRT	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PDB	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Quarterly Constant GDP, Series 2010=100

Sektor	Q1	Q2	Q3	Q4	2000	---	Q1	Q2	Q3	Q4	2010
1. Pertanian	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
a. Tabama	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
:	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
c. Jasa PRT	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx
PDB	qqq	qqq	qqq	qqq	xxx	—	qqq	qqq	qqq	qqq	xxx

Growth of Constant GDP, Series 2000=100 (%)

Sektor	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Pertanian	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg
a. Tabama	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg
:	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg
:	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg
:	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg
:	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg
c. Jasa PRT	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg
PDB	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg	ggg

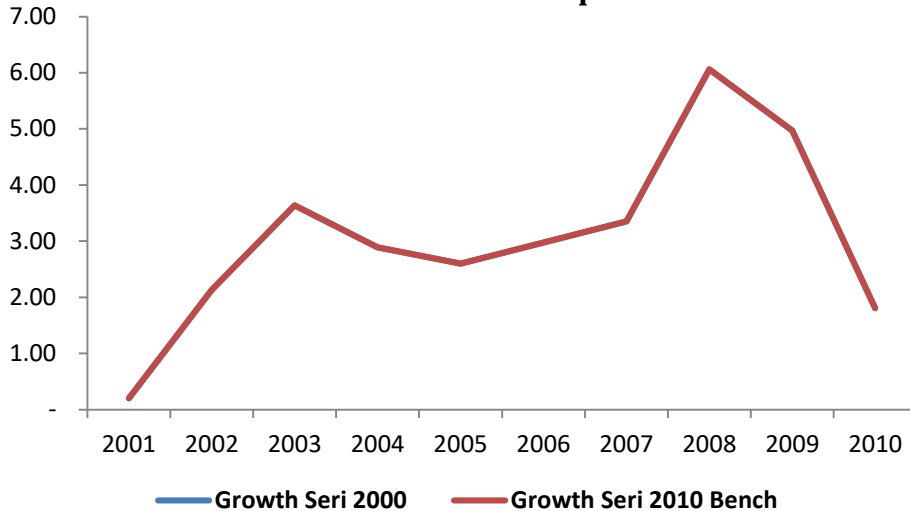
Quarterly Constant GDP, Series 2000=100

Sektor	Q1	Q2	Q3	Q4	2000	.....	Q1	Q2	Q3	Q4	2010
1. Pertanian	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
a. Tabama	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
:	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
c. Jasa PRT	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa
PDB	qqq	qqq	qqq	qqq	aaa	.....	qqq	qqq	qqq	qqq	aaa

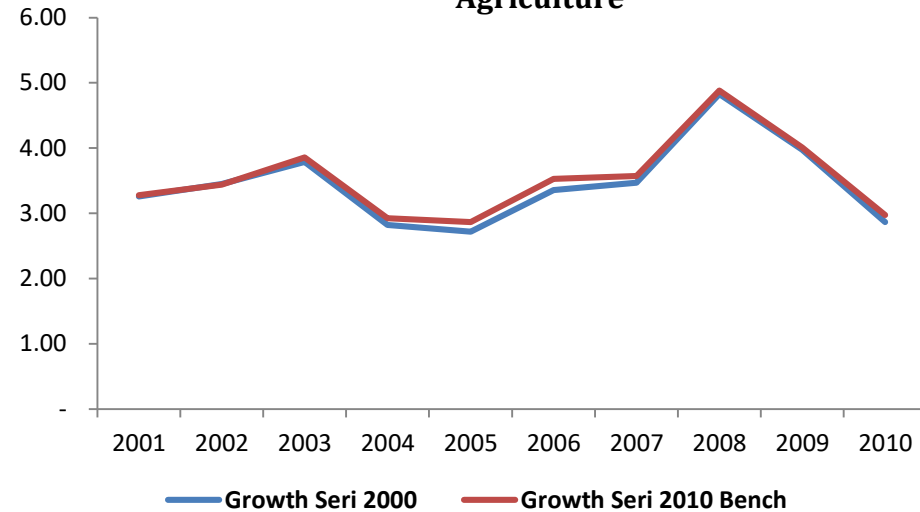


Annual Growth of Constant GDP 2001 – 2010 (%)

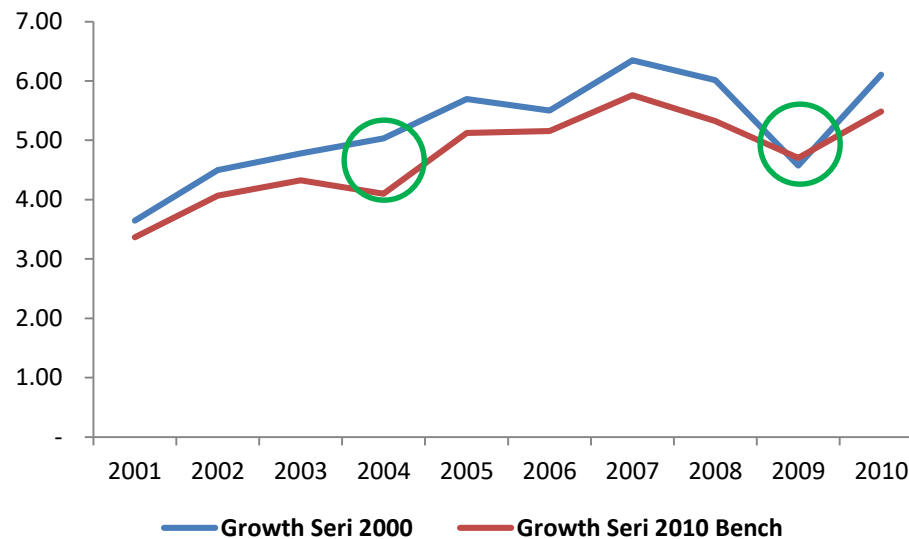
Food Crops



Agriculture



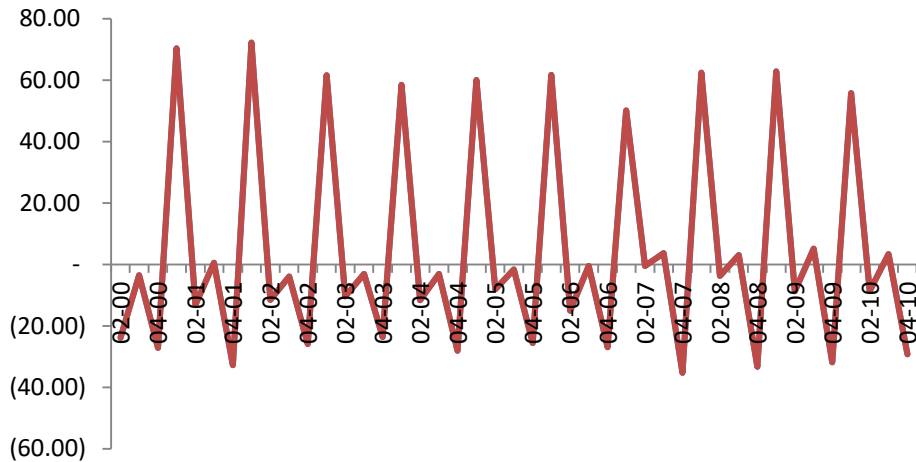
Total GDP





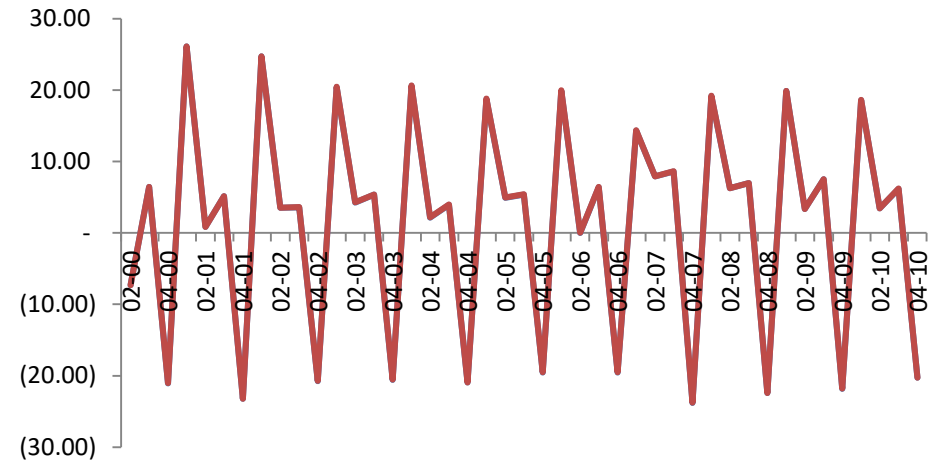
Quarterly Growth of Constant GDP, QtoQ, 2001 – 2010 (%)

Food Crops



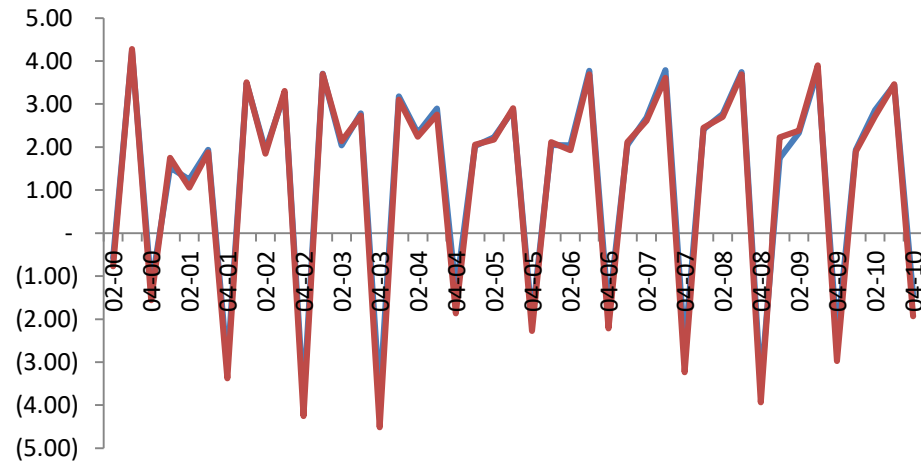
— Growth Seri 2000 — Growth Seri 2010 Bench

Agriculture



— Growth Seri 2000 — Growth Seri 2010 Bench

Total GDP



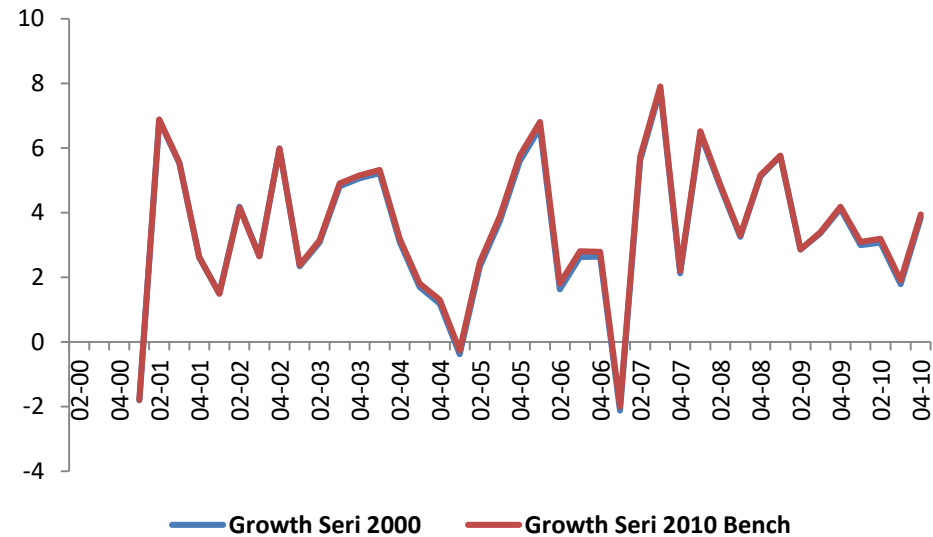
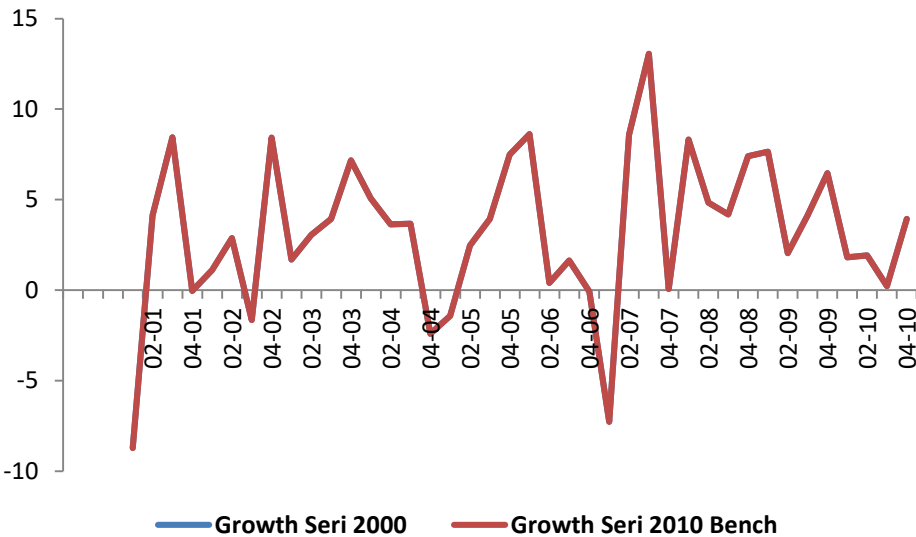
— Growth Seri 2000 — Growth Seri 2010 Bench



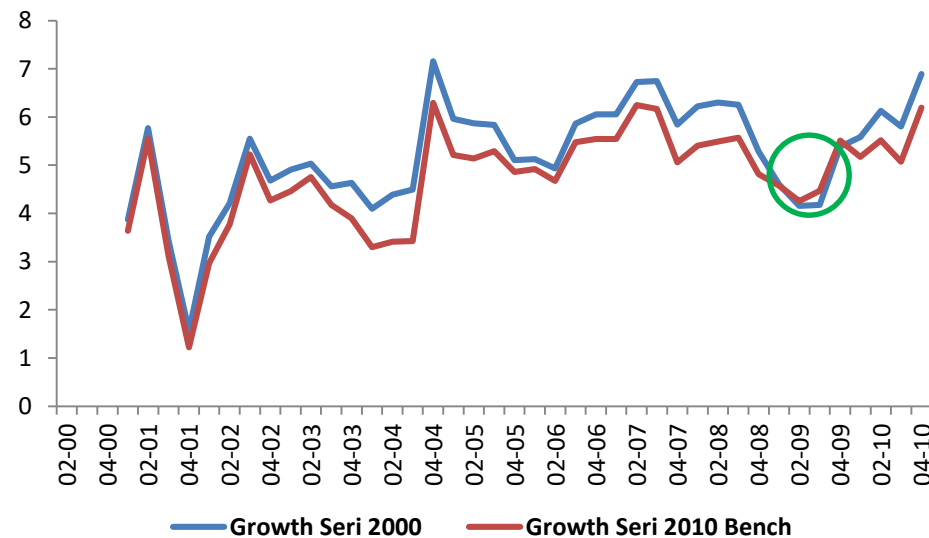
Quarterly Growth of Constant GDP, YonY, 2001 – 2010 (%)

Food Crops

Agriculture

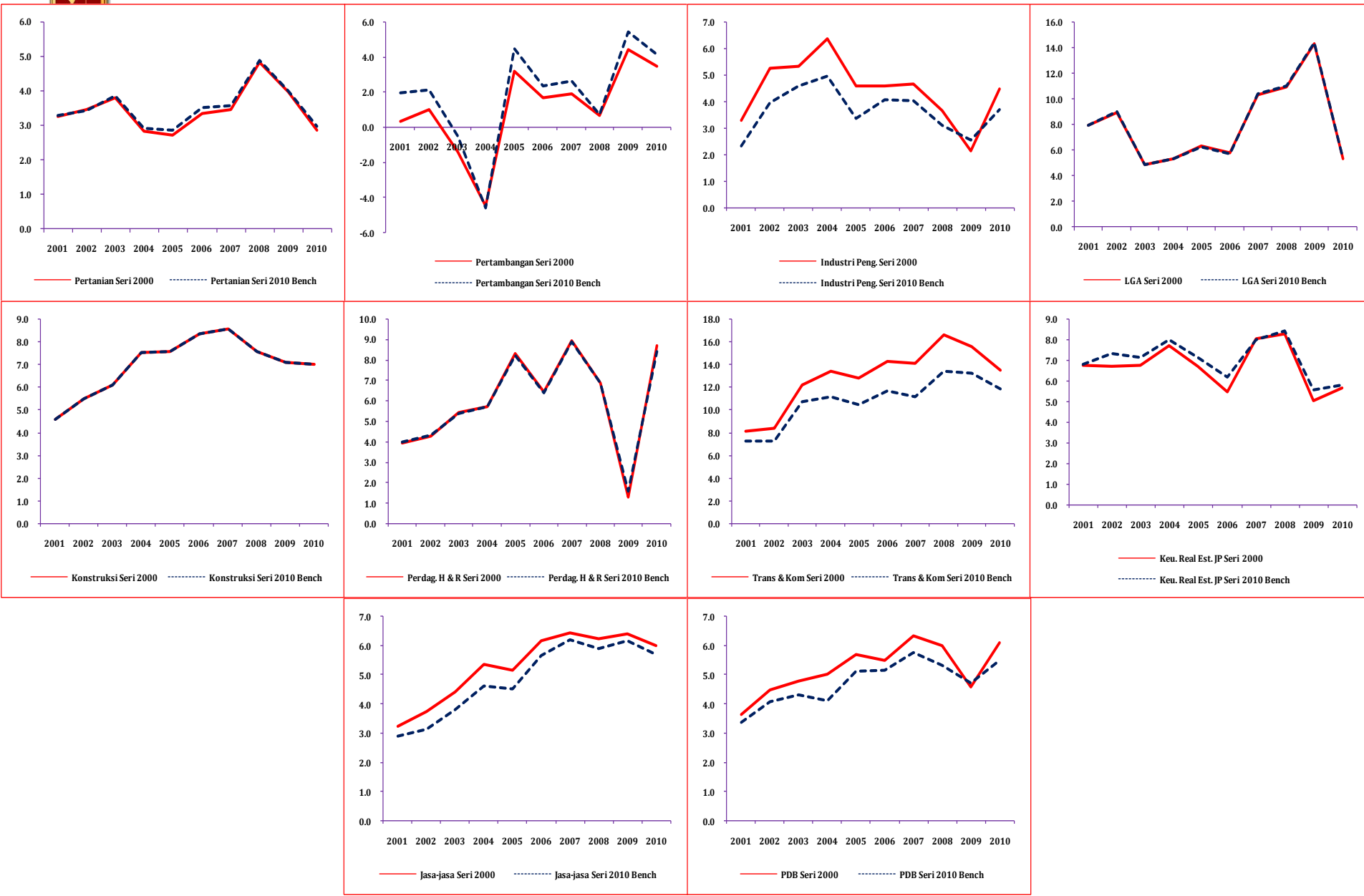


Total GDP

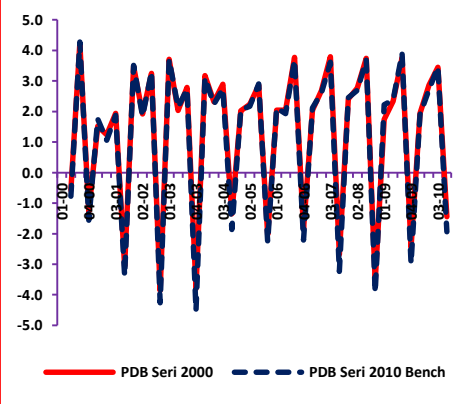
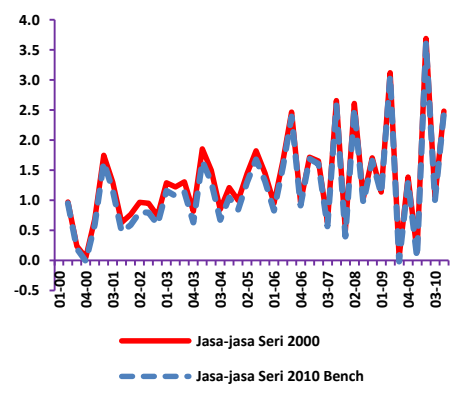
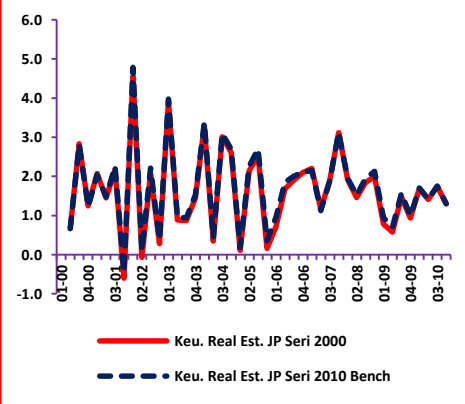
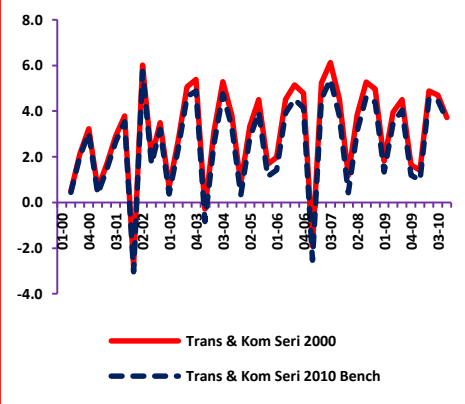
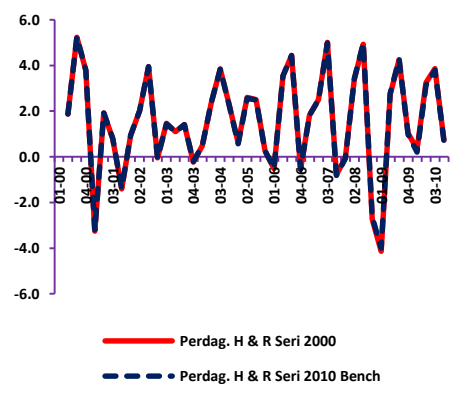
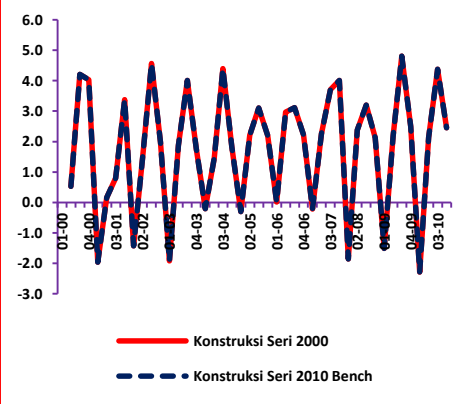
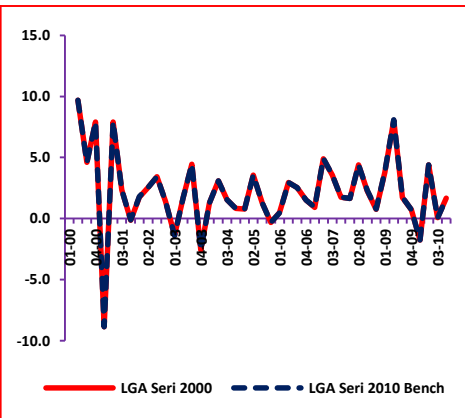
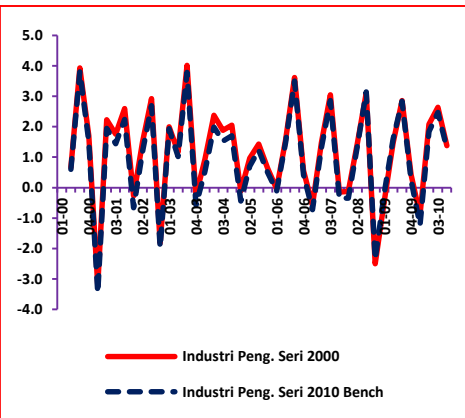
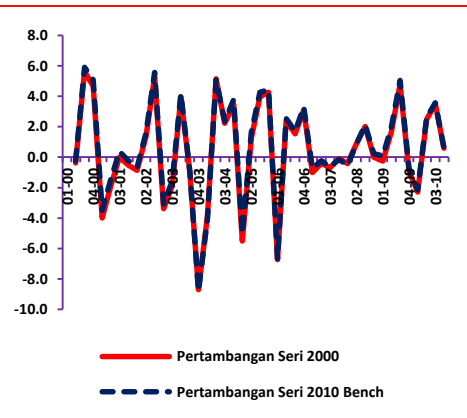
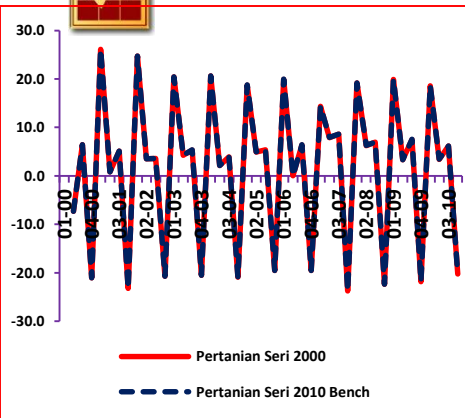




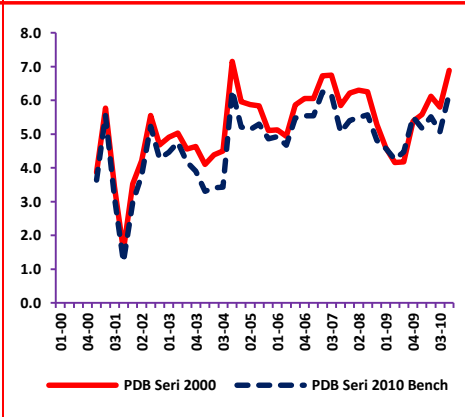
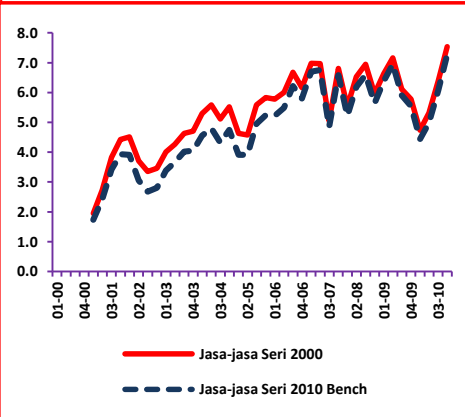
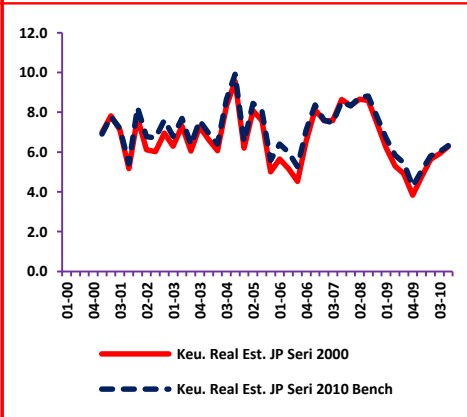
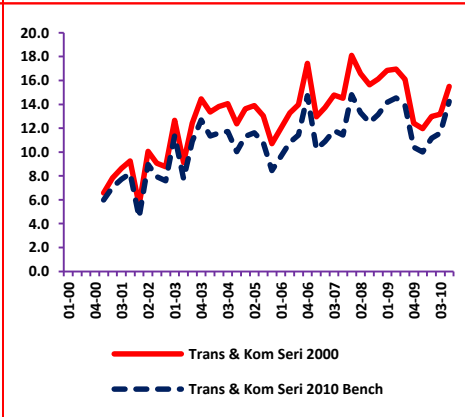
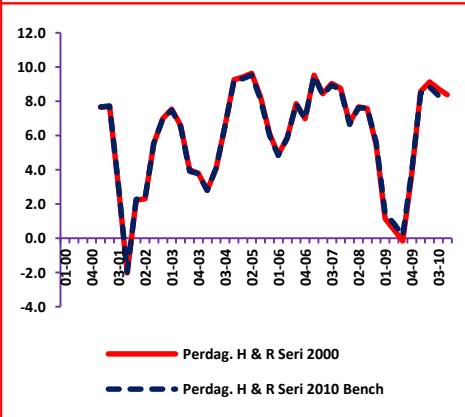
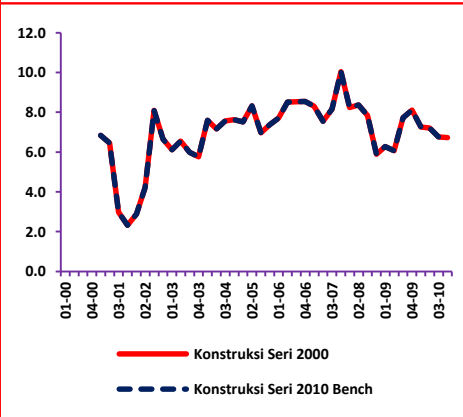
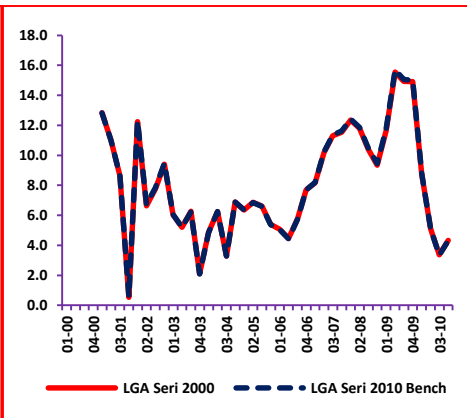
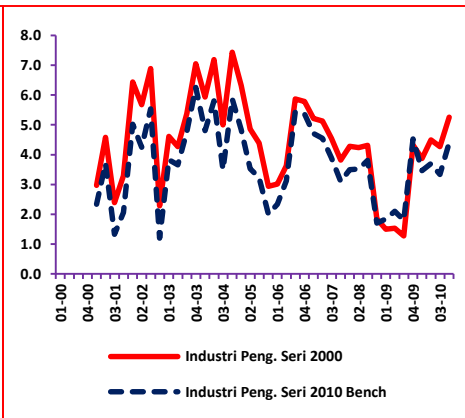
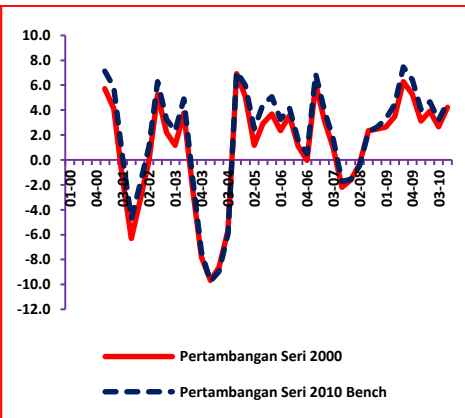
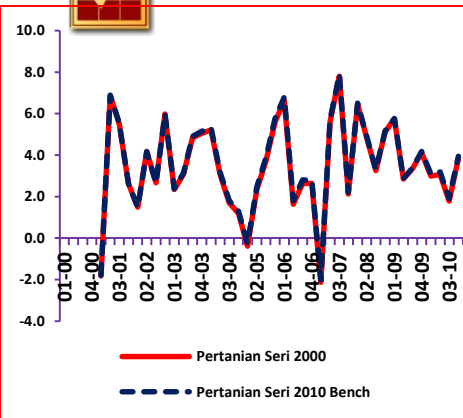
Annual Growth of Constant GDP by Industries 2001 – 2010 (%)



Quarterly Growth of Constant GDP QtoQ 2001 – 2010 (%)



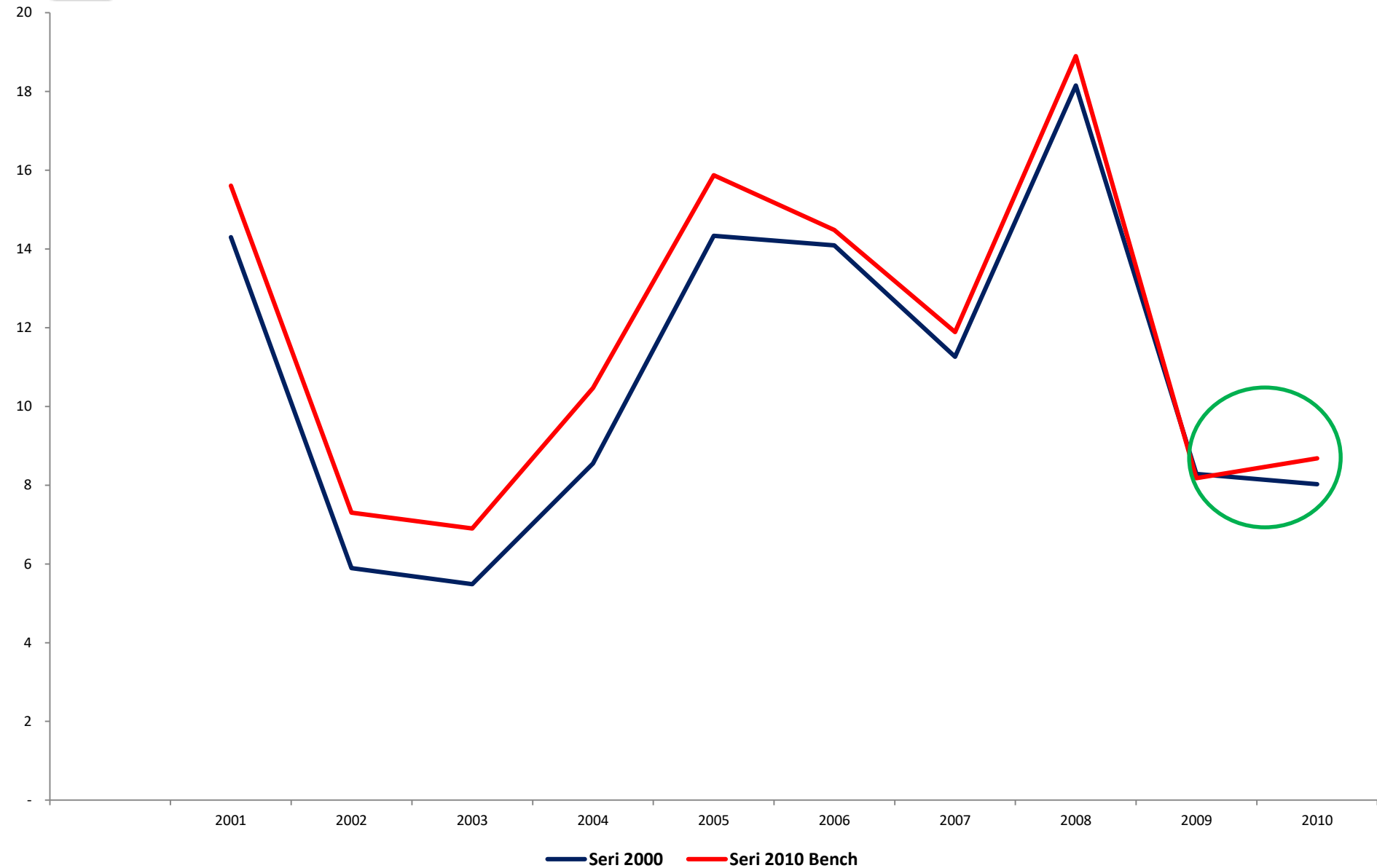
Quarterly Growth of Constant GDP YonY 2001 – 2010 (%)



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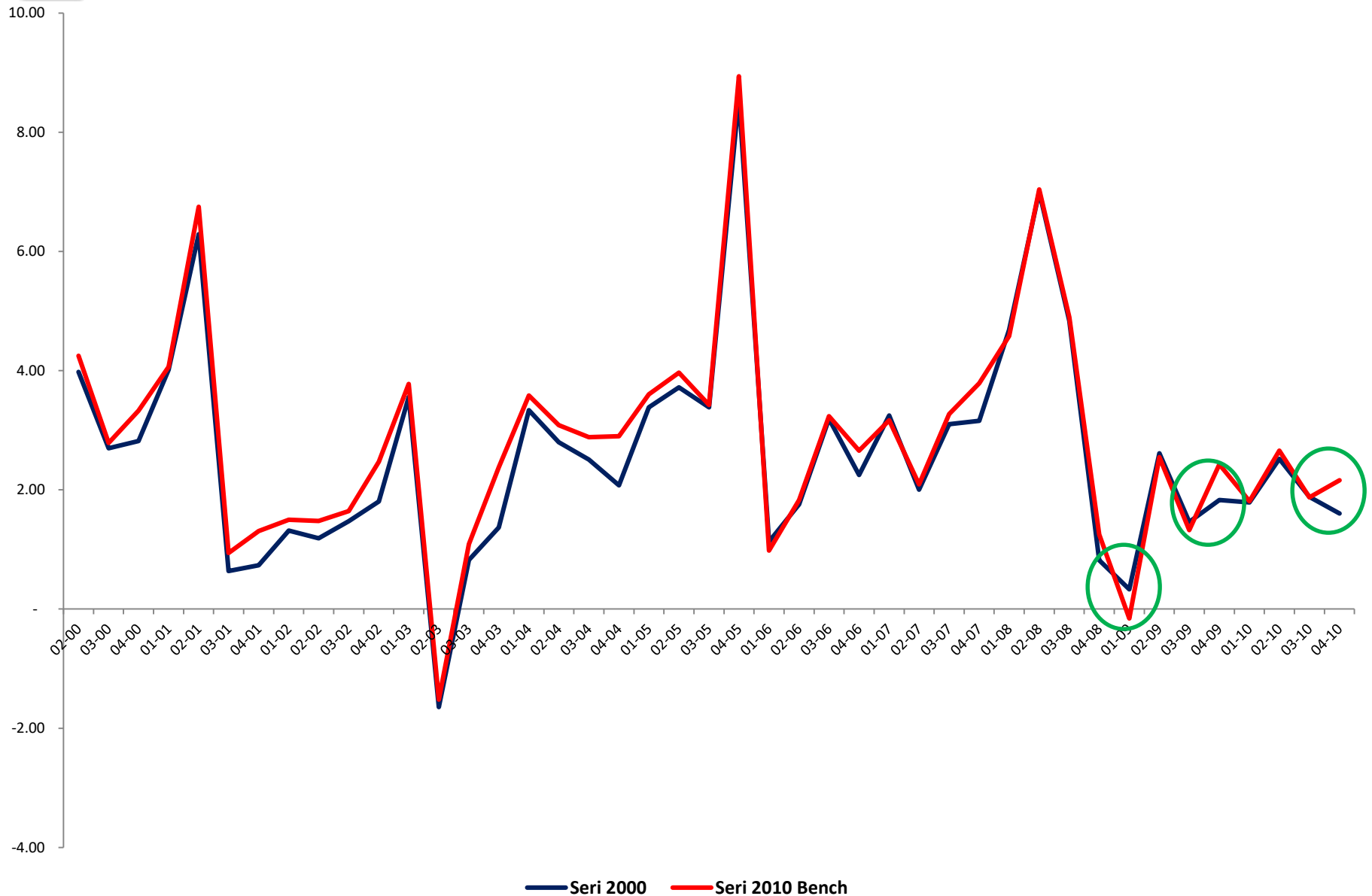


Annual Implicit Growth 2001 – 2010 (%)



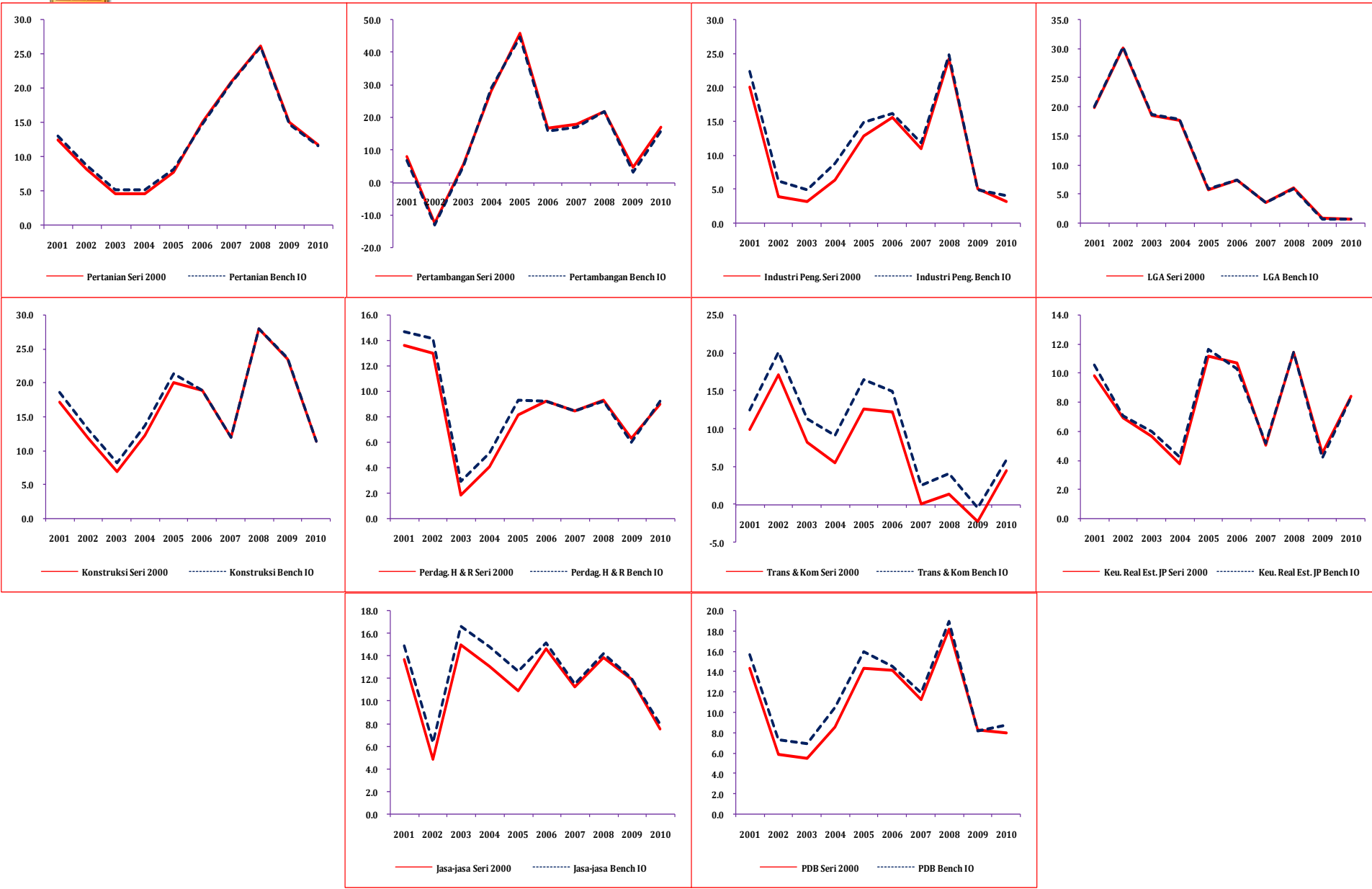


Quarterly Implicit Growth (%)



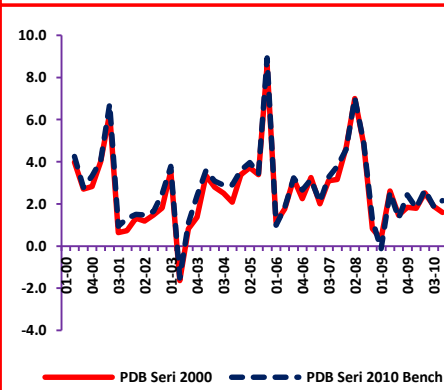
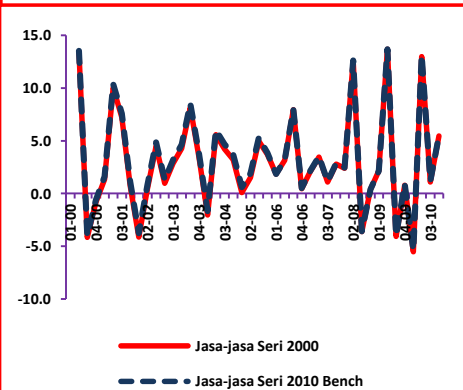
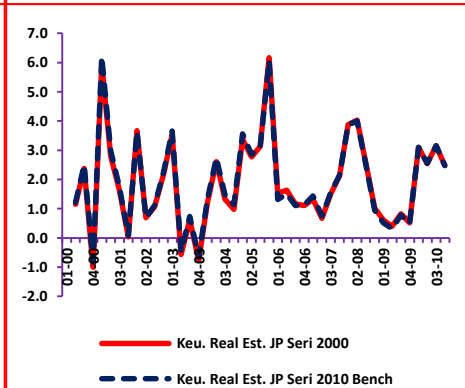
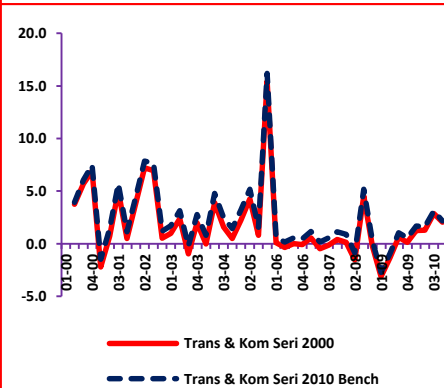
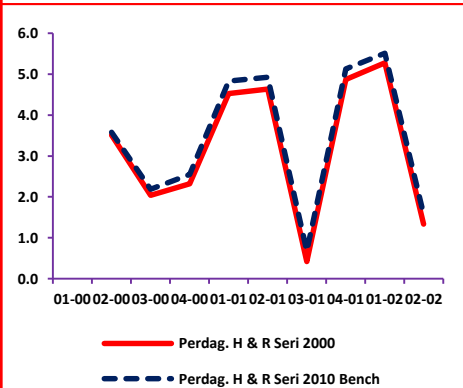
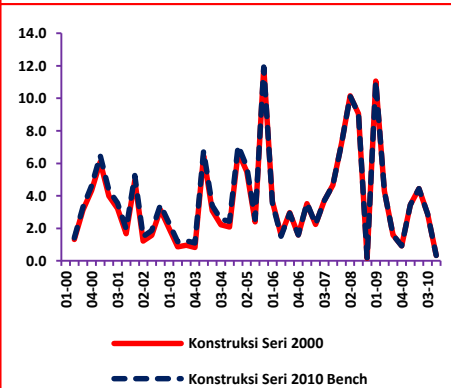
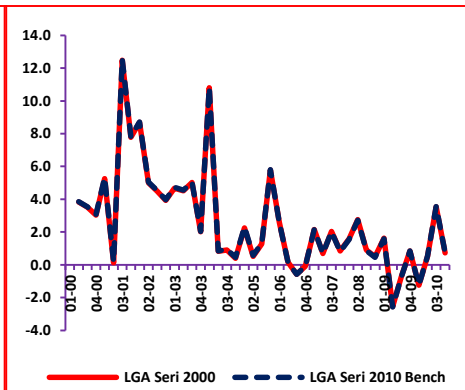
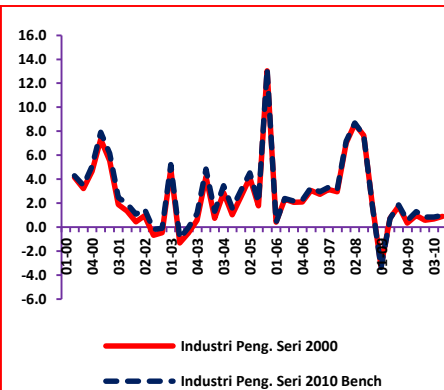
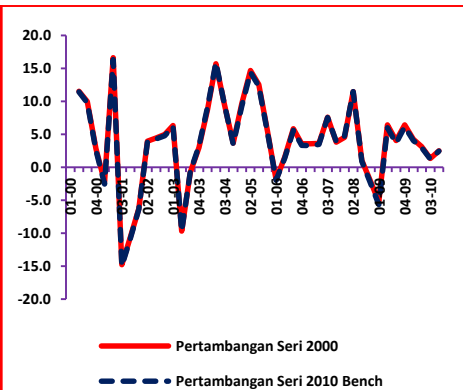
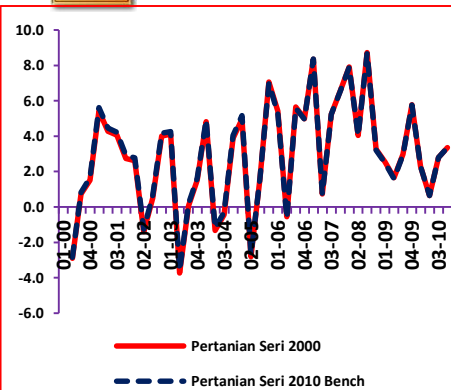


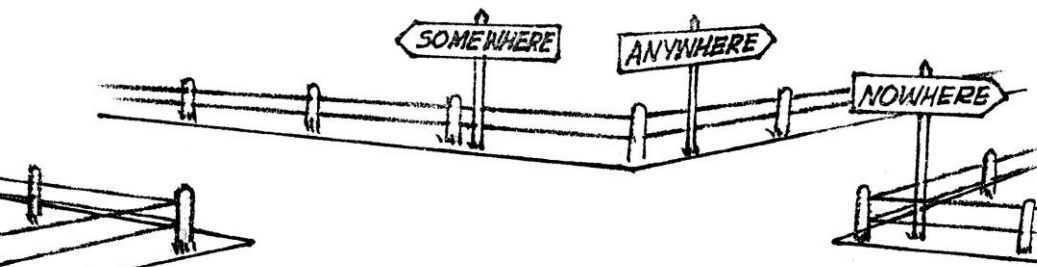
Annual Implicit Growth by industries (%)



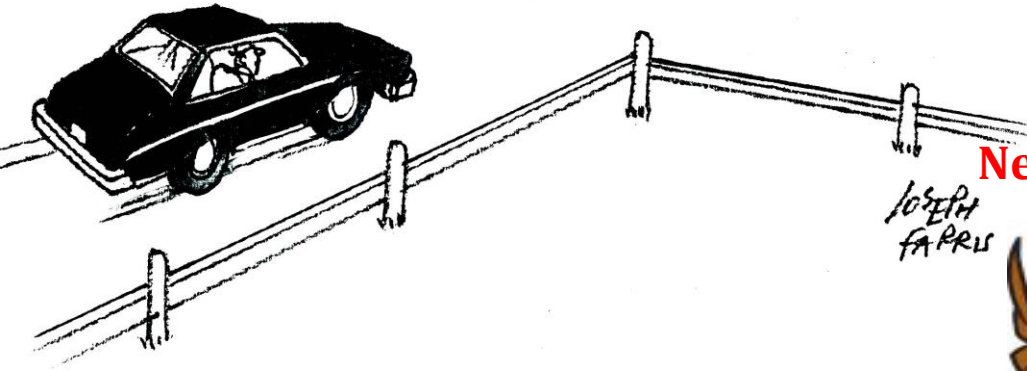


Quarterly Implicit Growth by industries 2001 – 2010 (%)





Where next ?



Need to establish a clearer way forward

JOSEPH
FARRIS

Thank you

