

Chapter 3 Selected Answers

Problem 3.1:

[Earlier versions of the answer key included some miscalculations. This answer was revised on 10/31/12 to correct the errors. Also note that an amendment to the problem as stated on p. 110 of the text has been suggested on the Errata page of the textbook website: The line “Net Transfers from Abroad” should be changed to “Net Transfers to Abroad” and the minus signs removed so that the data for 2001 is +3 and for 2002 +7. (This is not strictly speaking an error. However, it should cause less confusion this way. The table below reflects these changes.)

(a) (Answers in bold in gray cells.)

	2001	2002
Consumption	660	691
Government Expenditure on Goods and Services	191	210
Fixed Investment	167	170
Changes in Inventories	3	5
Exports	272	273
Imports	299	305
GDP	994	1,044
Net Income Flows from Abroad	8	20
Gross National Product	1,002	1,064
Net Transfers to Abroad	3	7
Savings	147	155
Capital Consumption	109	116

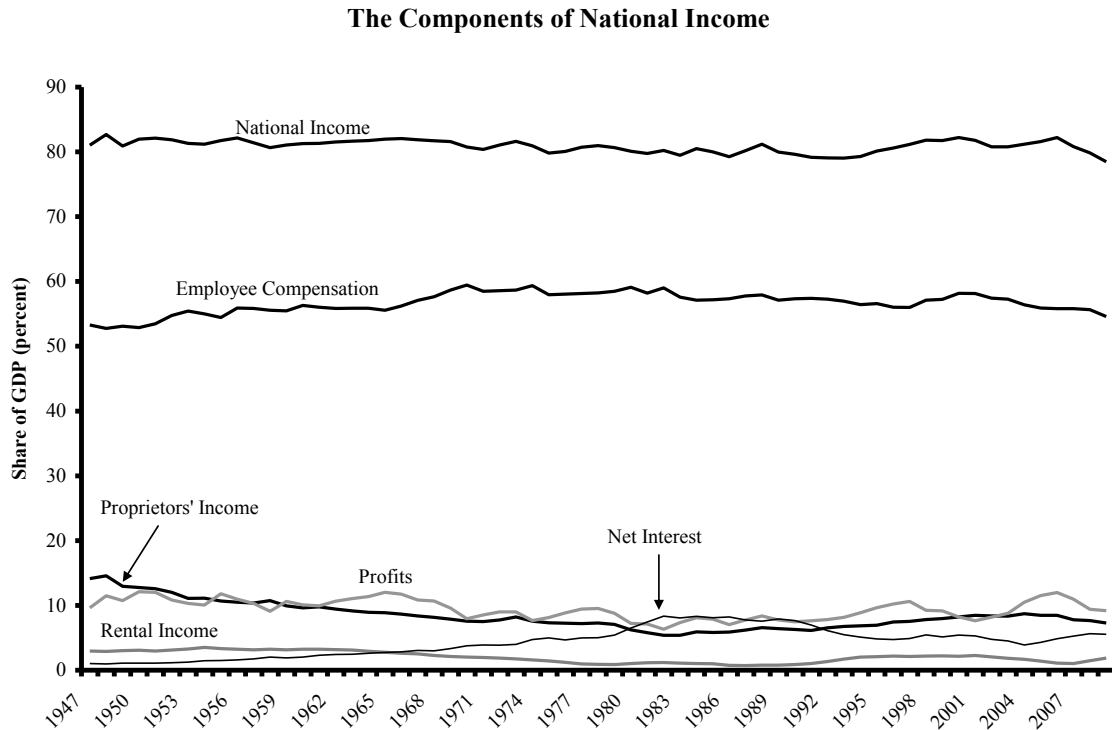
(b)

	2001	2002
NNP (<i>GNP – Capital Consumption</i>)	893	948
Net Investment (<i>Investment – Capital Consumption</i>)	61	59
Trade Balance (<i>EX – IM</i>)	-27	-32
Current Account Balance (<i>EX – IM + NIA – NTRA</i>)	-22	-19

Problem 3.3:

(a) (*Answer will vary with each student.*)

(b):



(c) (*Answers will vary with student. Good answers should be explicitly related to the assessment of the accuracy of the answers to (a).*)

Problem 3.5. Minimum = 100.2 percent; maximum = 101.2 percent. During the period since 1947, U.S. GNP has always exceeded 100 percent of GDP. This shows that net income flows from abroad have always been positive, but small (the maximum variation is only 1 percentage point) – i.e., the U.S. has earned more from factors of production owned in other countries than it has paid to foreign owners of such factors in the U.S., though the balance is very close.

A ratio is superior to a difference, because nominal GDP and GNP have risen sharply on trend, so that differences have become absolutely larger over time, even though they are nearly constant as a share of the economy.

Problem 3.6:

Capital Consumption

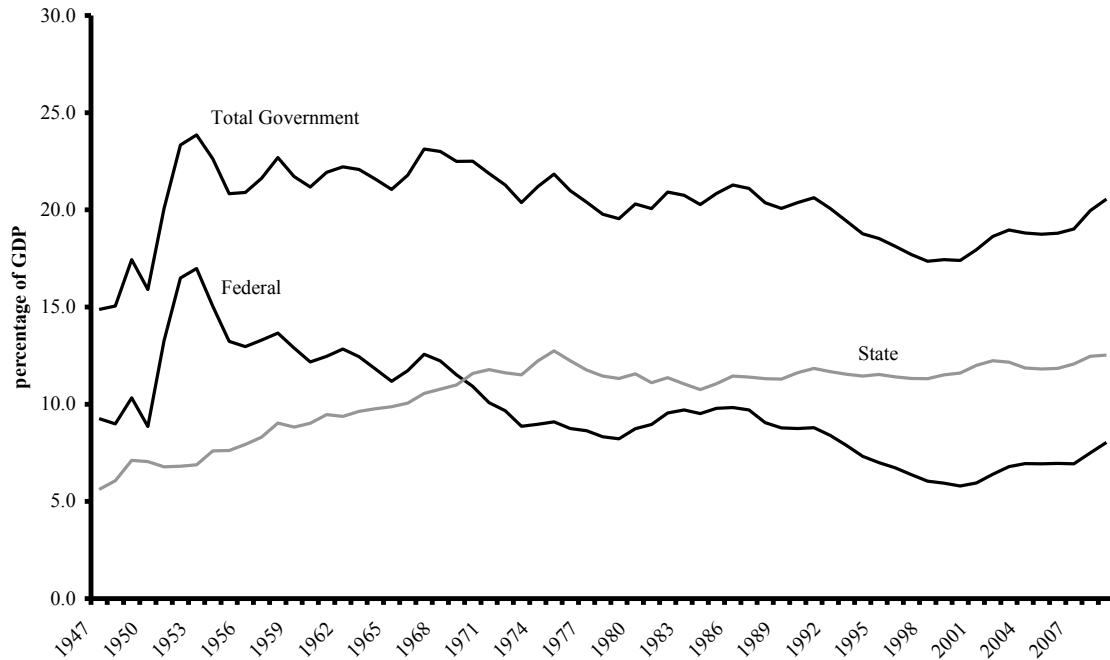


Note: basic data are expressed as a percentages of GDP.

Capital consumption is variable at all times, but shows a marked increase in its mean between the earlier 1970s and the early 1980s. One possible reason is more rapid depreciation of capital as a result of the run-up in oil prices in the 1970s, resulting in the obsolescence of a lot of associated capital. This is consistent with the slow falling off in capital consumption after 1980, when oil prices began to decline. Yet capital consumption does not fall back to its old mean, suggesting that not just one-time obsolescence, but a shorter average lifetime of capital is also one of the causes. A shorter lifetime could easily be consistent with computers and other information-based capital forming a greater proportion of the capital stock, since rapid improvements also lead to rapid obsolescence.

Problem 3.9:

Federal vs. State-and-Local Expenditure on Goods and Services

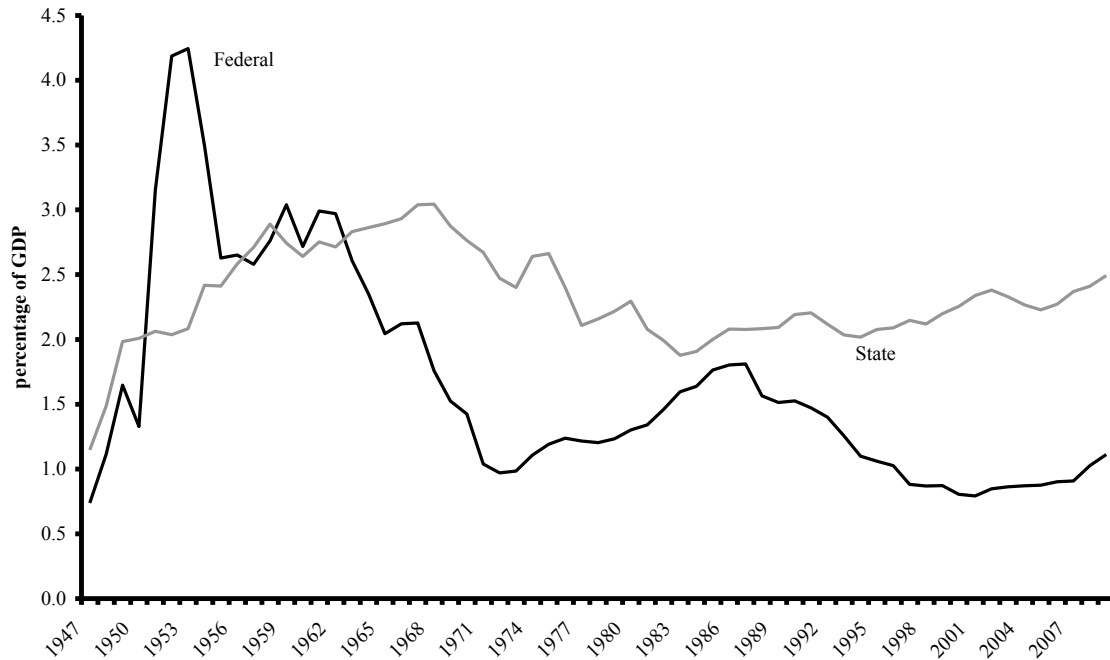


Note: basic data are expressed as a percentages of GDP.

Perhaps surprisingly Federal spending, which was at its post-World War II peak in 1953 at the end of the Korean War, fell strongly on trend with only small upward blips (associated with the Vietnam War, the Reagan rearmament boom of the 1980s, and the Afghanistan and Iraq Wars after 2001). Despite the recent uptick, Federal spending in 2009 was below its 1947 level (stimulus spending since 2009 may change that). At the beginning of the sample, Federal spending exceeded state and local spending, but these trended up sharply until leveling out around 1975 and showing no trend since then. State-and-local spending in 2009 is more than 50 percent larger than Federal spending. Greater spending on schools and highways probably accounts for the increase in state and local spending. The downward trend of Federal spending dominates the sum, so that total government spending is a shallower mirror of the Federal spending time series. (Caution: these data do not include transfer payments, which constitute the largest part of the Federal budget and a substantial part of state-and-local budgets, though they do not count as GDP.)

Problem 3.10:

Federal vs. State-and-Local Investment



Note: basic data are expressed as a percentages of GDP.

The pattern of Federal investment spending is very close to overall Federal expenditure in shape, suggesting that much of the variability in Federal spending was related to physical investments. The timing suggests that military equipment may account for a large part of the variation (see answer to Problem 3.9). A portion of the higher investment levels of the mid- to late-1950s may also be related to the development of the Interstate Highway System, which was a Federal-state partnership. The fluctuations in investment expenditure are not large enough to account for all of the fluctuations in Federal spending. State-and-local investment spending mirrors overall state-and-local spending much less than does Federal spending. It rises more rapidly between 1947 and 1960 than does overall state-and-spending. It trends downward through the 1970s and upwards from the 1980s on. As with Federal investment expenditure, the variations in state-and-local investment expenditure are not large enough to account fully for overall state-and-local spending. The greater steadiness of overall spending implies that current expenditures tended to be higher when investment expenditure was lower. The early rise is attributable in part to the Interstate Highway System. Since the mid-1960s state-and-local investment has dominated Federal investment: in 2009 it was about 2½ times larger, reflecting greater state-and-local responsibility for roads, schools, and hospitals.

Problem 3.13: There are many possible examples. Here are one of each:

- Mowing one's lawn fits the third-party test: one could easily contract a landscaping service. (Notice that something related like gardening may or may not pass the test. Some people garden only to keep their house looking nice; others garden for the personal pleasure it gives them. The first would pass the third-party test; the second would not.)
- Watching television fails the third-party test: the activity would be pointless if one did not do it oneself.