

# Macroeconomics

## *for Emerging East Asia*

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## 4. National Income and Product Accounts

*The National Income and Product Accounts provide a framework for measuring the size of an economy and its component parts. Breakdowns are made along lines of (i) what is produced, (ii) who receives the income, and (iii) how the income is spent. In all aspects, the economies of Emerging East Asia show great diversity.*

Gross domestic product (GDP) is the standard measure of the overall size of an economy. The first two chapters of this text have referenced the measure to characterize economic performance in the Emerging East Asia region. Its breakdown along various dimensions sheds light on the workings of an economy, providing a window into development processes and macroeconomic balances.

In this chapter we lay out approaches to calculating GDP and related measures of aggregate economic activity covered under the National Income and Product Accounts (NIPA). We take Taiwan as a case study showing how the make-up of its economy has changed through nearly seven decades of successful development. And we draw comparisons across the economies of emerging East Asia for the year 2016 to reveal the great diversity of the region.

Three different approaches have been formulated for compiling GDP: the product approach; the income approach; and the expenditures approach. The product approach involves adding up the value of all productive activity over a given period of time. Productive activity generates incomes, so the second approach comes at the same result by adding up different types of income over the period. Finally, the incomes earned are spent in assorted ways, so the third approach captures these different forms of expenditure. The three approaches to GDP measurement form the basis for the three main sections of this chapter.

### Product Approach

The product accounts are the starting point for national income accounting. Countries with only rudimentary NIPA systems maintain product accounts even when they have not yet developed the capacity to implement other approaches to GDP measurement.

#### *Accounting Concepts*

The product approach follows from the basic definition of GDP as the value of productive activity in an economy over an interval of time. The interval of time most commonly referenced is one year but quarterly figures are also compiled by most countries. The time dimension indicates that GDP is a flow concept as opposed to a stock which is measured at an instant in time and thus has no time dimension. (To illustrate the distinction, capital assets are a stock while investment that adds to those assets over a period of time is a flow.)

Measurement of production must be defined in value added terms to avoid double counting of the intermediate inputs to production. We do not want, for example, to absorb into the accounts the value of all the bread produced in an economy plus the value of all the flour produced plus the value of all the wheat produced. The value of the bread incorporates the value

of the flour used to make it, as in turn the value of the flour incorporates the value of the wheat. The value added measure of production nets out the consumption of intermediate inputs so that the magnitude entering the accounts in this simple production chain is:

$$\text{Grain} + (\text{Flour} - \text{Grain}) + (\text{Bread} - \text{Flour}).$$

where the elements are expressed in value terms per unit of time. In general then, GDP captures the value of output across sectors minus the value of intermediate inputs. Value added thus derived reflects the contribution of the factor inputs to production.

The production of long-lived capital goods – continuing the bread making example these would be such things as ovens and bakery facilities – gets counted fully in GDP for the year the goods are produced. Over their lifespan these capital goods in turn contribute to the production of other goods and services counted in GDP year by year. With each passing year, some portion of an economy’s capital stock wears out in the production process. The “gross” in gross domestic product means this capital consumption is subsumed in the output value measure. By deducting it we get a measure of output net of that part of newly produced capital that served merely to replace assets that wore out. This measure of output is referred to as net domestic product (NDP):

$$\text{NDP} = \text{GDP} - \text{capital consumption}.$$

While conceptually important, in reality capital consumption, or depreciation, is difficult to formally specify and measure. Although a net measure might be preferable in principle for many purposes, the gross measure tends to predominate on practical grounds.

The boundary on what is considered production for GDP purposes is subject to certain limitations. To a large extent production for own consumption is not counted even as production of the same goods or services for commercial purposes is. For example, home cooked meals are not counted whereas meals prepared in a restaurant are. Housekeeping activities of family members are not counted whereas the same functions performed by paid domestic helpers are. Do-it-yourself home repairs are not counted even though the paid services of a contractor are. Further, volunteer work for charity organizations is not counted whereas paid employment in the same organizations is. In all such cases, GDP captures activities when they are transacted in markets but not otherwise. This limitation of measurement has the effect of biasing downward the GDP valuation of less developed economies. This is because households tend to be more self-reliant when incomes are lower – eating at home, caring for young children within the family, and enjoying the company of family and friends as entertainment, for example – rather than purchasing services in the market.

There are two areas of production in which the lack of market transactions necessitates the imputation of output values. The first is agricultural production for subsistence use. Clearly this is an important form of economic activity for societies at low levels of economic development that should not be neglected. The second is the rental value of owner-occupied homes. In general, the stock of housing yields residential services that are appropriately included in GDP. For homes that are rented, a transaction occurs to register the value of these services. For homes that are occupied by their owners, the value of services is imputed as if the owners paid rent to themselves. Homeowners are thus treated as though they are in the business of property rental.

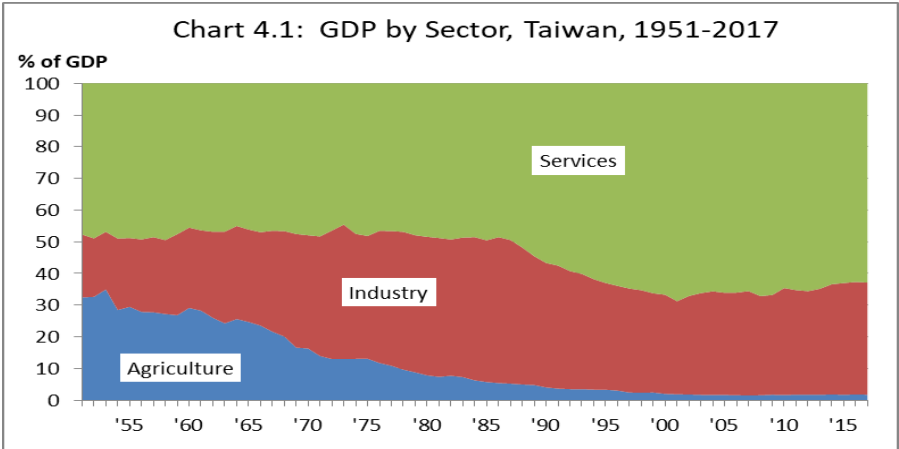
While transactions generally serve as the basis for valuing productive activity for GDP accounting purposes, note that not all transactions signify underlying productive activity. Rather, transactions often function merely to transfer ownership of existing assets, as, importantly, in the sale of real property or of stocks and bonds. However, the services involved in facilitating such transactions, as rendered by an agent or broker, for example, are counted in GDP. Changes in the market value of assets are not counted.

We must emphasize that GDP is not designed as a measure of welfare in any general sense. In fact, its connection to welfare can be quite anomalous. For example, an increase in crime clearly makes people worse off even as it generates work in security and policing services. Similarly a disease epidemic stimulates activity in the health care industry that raises GDP despite the suffering caused. War, natural disasters, environmental degradation – all have devastating consequences for humanity, yet often such calamities can precipitate increases in measured productive activity. The upshot is that GDP must be kept in proper perspective as a measure of activity rather than an indicator of well-being or prosperity.

The product measure of GDP allows for breakdown by sector. The three principal sectors are agriculture, industry, and services, with industry further decomposed into mining, manufacturing, and construction. The process of economic development rests fundamentally on the shift in economic activity from agriculture to industry to services. We document this shift with data from Taiwan spanning nearly seven decades and for a cross section of Emerging East Asian economies in 2016.

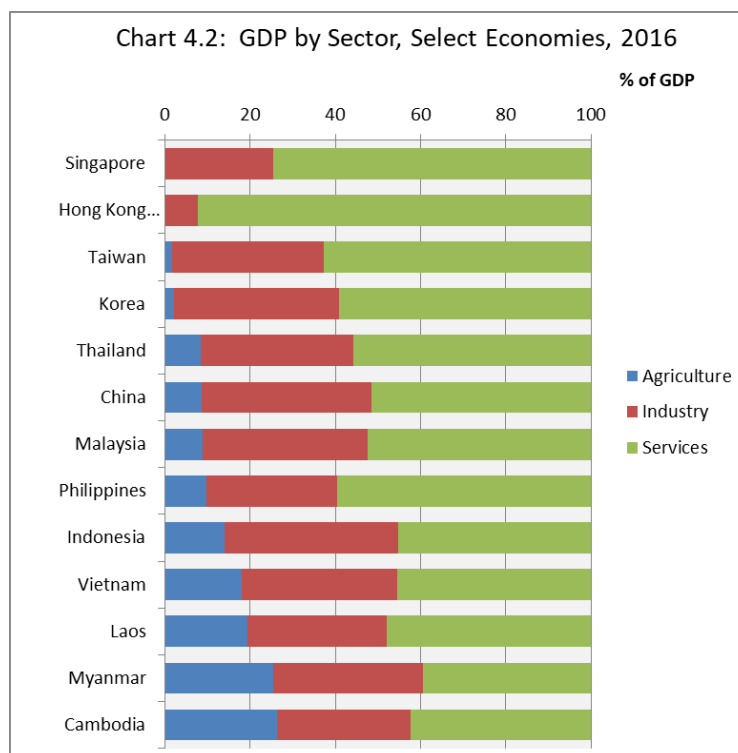
*Taiwan over Time*

Taiwan’s structural transformation over the period 1951 to 2017 is illustrated in Figure 4.1. Agriculture’s share in output fell from 32.4 percent in 1951 to as low as 1.4 percent in 2007, with a slight uptick to 1.8 percent in later years. Industry’s share expanded to fill the gap until the 1980s, rising from 19.9 percent to a peak of 46.1 percent in 1986. after which it gave way to services. By the 2000 aughts, the service sector had consolidated its predominance at about two-thirds of GDP. In the 2010s, industry saw a slight resurgence to account for 35.4 percent of GDP in 2017 with services retrenching to 62.9 percent.



## *Emerging East Asia in Cross Section*

The process of structural change is exhibited in cross section in Figure 4.2. As of 2016, two economies in Emerging East Asia – Cambodia and Myanmar – still depended on agriculture for more than a quarter of their GDP. Industrialization weighs in at about 35-40 percent of GDP in many economies of the region – Taiwan, Korea, Thailand, China, Malaysia, Indonesia, and even Vietnam and Myanmar. The economies of Hong Kong and Singapore are dominated by the service sector with virtually no agriculture and in Hong Kong very little industry. The Philippines has seen its service sector expand to nearly 60 percent of GDP, putting it on par with Korea and Taiwan, while its agricultural sector nonetheless retains a very much larger hold than in these two economies. We may infer from this that while structural change is highly correlated with per capita GDP, other factors such as resource endowments and government policy are also involved.



## **Income Approach**

Economic activity yields income in conjunction with producing output, so measuring income offers another route to arriving at the same result. Relatively sophisticated statistical systems are required to compile GDP by this approach. Time series data are available for Taiwan. However, cross-section data are not adequate for a multi-country analysis in this section.

## *Accounting Concepts*

A number of adjustments are required to transform aggregate product into an aggregate income measure suitable for breaking down income by type of earner. Some part of production in any economy accrues as income to foreign parties, while conversely domestic parties

sometimes earn incomes abroad. GDP is defined by the location of production, regardless of whether it generates income to foreign or domestic parties. By contrast, Gross National Income (GNI) captures the income of domestic parties regardless of whether it is earned at home or abroad. To convert GDP to GNI we add the foreign-sourced income of domestic parties and subtract the domestic-sourced income of foreign parties. Reducing these two adjustments to a single net measure, we have:

$$\text{GNI} = \text{GDP} + \text{net foreign factor income}, \quad (4.1)$$

where net foreign factor income is equal to factor income received abroad minus factor income paid out domestically to foreign recipients. Foreign factor income includes wages and salaries of workers employed abroad as well as returns on foreign investment. GNI may be greater than, less than, or equal to GDP depending on the balance on net foreign factor income.

Distribution of income is tracked along lines defined by institutional unit and factor of production. Institutional units are classified into five broad types: households, including unincorporated businesses owned by households; non-financial corporations; financial corporations; government; and non-profit institutions serving households. The non-profit sector holds a relatively small place in measured economic activity and does not figure notably in the accounts of our sample economies.

Because income initially received from productive activity by one type of institutional unit may in turn be redistributed to another type of unit, the national accounts represent income flows in two stages: the primary distribution of income account; and the redistribution of income account. Redistribution involves unilateral transfers where no good or service is provided in exchange. Examples include income taxes, pensions, and social assistance.

The redistribution of income account reflects receipts subsequent to all unilateral transfers. Domestically, these mainly involve government exercising its powers of taxation and social welfare provision. Internationally, remittances of family members resident abroad figures importantly for some countries (e.g., the Philippines) in foreign transfer income. The addition of net foreign transfers to GNI yields gross national disposable income (GNDI):

$$\text{GNDI} = \text{GNI} + \text{net foreign transfers}. \quad (4.2)$$

GNDI may be greater than, less than, or equal to GNI depending on the balance on net foreign transfers.

Institutional units differ in the forms of factor income they receive. Households alone receive returns to labor. Labor income comprises wages and salaries, both in cash and in kind, as well as social insurance contributions made by employers for the benefit of employees. Households also receive returns to property, the principle forms of which are interest, rent, and distributed income from corporations. Household income from unincorporated businesses is regarded as a mix of returns to labor and property that cannot be easily disentangled. All household income receipts are recorded on a pre-tax basis in the primary distribution of income account.

Primary income of government is derived from sources other than taxes on incomes of households or enterprises. These sources include most notably value added taxes, sales taxes,

import duties, and income from government enterprises. Subsidies paid for productive activities are deducted from government primary income.

The income of enterprises is equal to their pre-tax earnings (revenues net of expenses), all of which constitute income from property. By its nature, this income is saved as retained earnings rather than consumed. Only households and government engage in consumption. This issue is taken up in detail in the next section.

Technically, national income should be defined net of capital consumption (depreciation) which is properly viewed as a cost of production rather than a component of income. Realistically, however, the difficulty of measuring capital consumption inclines statistical authorities to the use of the gross measure. The NIPA guidelines allow for either method to be adopted. Net national disposable income (NNDI) is defined as GNDI minus capital consumption:

$$\text{NNDI} = \text{GNDI} - \text{capital consumption.} \quad (4.3)$$

To sum up, getting from GDP to NNDI requires the following steps: (i) adding net foreign factor income; (ii) adding net foreign transfer income; and (iii) subtracting capital consumption.

### *Taiwan over Time*

Table 4.1 walks through the conversion of GDP to NNDI for Taiwan for the year 2017. Taiwan's GDP in that year was NT\$17.43 trillion (which at an exchange rate of NT\$30.4 to US\$1 was equal to US\$573 billion). Net foreign factor income added NT\$0.48 trillion to that to yield GNI of NT\$17.91 trillion. Foreign transfers were on balance outbound in the amount of NT\$0.12 trillion leaving GNDI of NT\$17.78 trillion. Finally, netting out a capital consumption allowance of NT\$2.74 trillion yields NNDI of NT\$15.05 trillion.

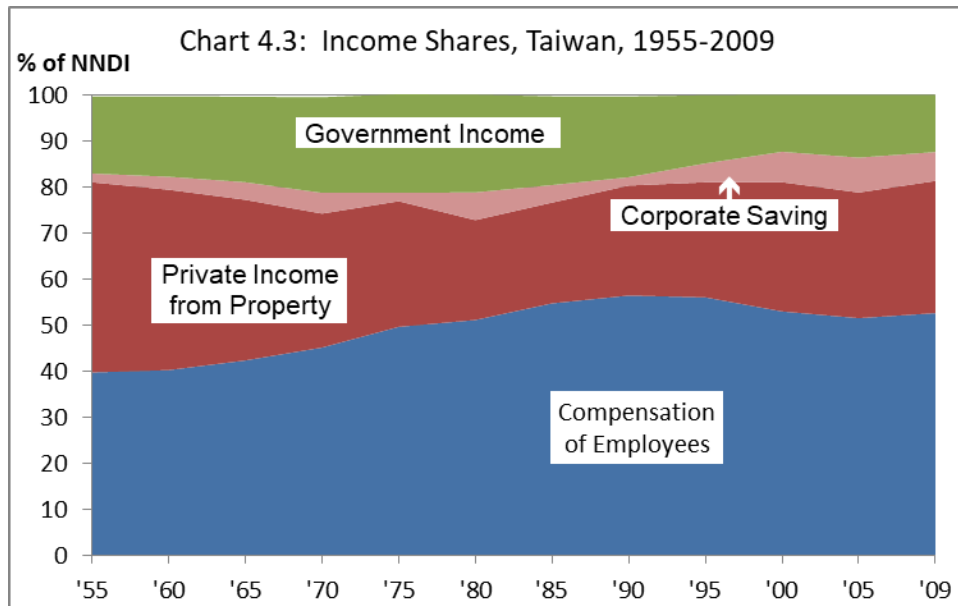
Table 4.1: Taiwan GDP to NNDI Conversion, 2017  
in NT\$ trillion

Gross Domestic Product		17.43
Net Foreign Factor Income	+	<u>0.48</u>
Gross National Income		17.91
Net Foreign Transfers	+	<u>-0.12</u>
Gross National Disposable Income		17.78
Capital Consumption Allowance	-	<u>2.74</u>
Net National Disposable Income		15.05

NNDI represents all income including net transfers received by domestic parties. NNDI is distributed as primary income to households, corporations, and government, with redistribution then taking place through taxes and subsidies. The distribution presented in the Taiwan accounts is a hybrid of primary income and redistributed income. Household incomes are

taken as pre-tax, corporate incomes as post-tax. The corporate income figure thus represents retained earnings after taxes all of which constitutes corporate saving. Government income then comprises business profit taxes as well as indirect taxes less subsidies, net income from government property and enterprises, and compulsory fees, fines, and penalties. Household income is divided between compensation of employees and private income from property.

Figure 4.3 presents Taiwan's institutional distribution of income between 1955 and 2009 taken at five year intervals. Through the earlier decades until 1990, the share of income going to employee compensation saw a pronounced increase. Recall from Figure 4.1 that this was a period of rapid industrialization. Workers were being drawn out of agriculture into higher productivity urban jobs. The combination of expanding urban employment and rising wages as labor markets tightened drove the increase in the wage bill. Once this process had run its course, labor's share in income stabilized at slightly more than 50 percent. Most of the increase in employee compensation was absorbed by a decrease in private income from property.



Income of corporations tends to be volatile with patterns obscured when observations are taken at five year intervals. Over the last decade, annual shares have ranged from 4.6 percent to 9.3 percent of NNDI. During previous decades values registered below 2.0 percent on a number of occasions. Yet any trends are difficult to discern.

Government income under this accounting does not include taxes on household income and is thus an incomplete measure of government size in the economy. The redistribution of income accounts would show a larger share for government and smaller shares for both compensation of employees and private income from property.

### Expenditures Approach

The third approach to GDP measurement closes the circle to tally expenditures of income on the purchase of final goods and services. Spending generates demand, and demand is critical



in determining how close an economy gets to reaching its potential. Producers will not long continue to produce if their wares do not sell. Production may generate incomes, but if those incomes are not channeled into spending, the circle is broken and the engine of economic growth stalls. The expenditures approach to GDP thus forms the basis for analyzing economic performance through the ebbs and flows of the business cycle. We lay foundations for thinking about this by examining the relationship between saving – or not consuming – and investment that channels that saving into demand.

### *Accounting Concepts*

Expenditures on final goods and services are categorized as follows: consumption by households; investment by households and businesses; consumption and investment by government; and exports less imports. Expenditures by businesses on goods and services for intermediate use are not included because these costs are absorbed in the ultimate spending on final goods and services. Spending on imports must be subtracted because such spending is implicitly counted in the other components of spending, yet has no domestic production counterpart. Formally:

$$GDP = C + I + G + X - M \quad (4.4)$$

where  $C$  = consumption by households;

$I$  = investment by households and businesses;

$G$  = government consumption and investment;

$X$  = exports;

$M$  = imports.

A consumption good or service is defined as yielding direct satisfaction of human wants or needs. Private consumption is undertaken by households at their own expense. Public consumption occurs when government bears the cost.

Investment has two components – formation of fixed capital and changes in inventories. Fixed capital refers to produced assets with a useful life of more than one year. Housing is included in fixed capital although consumer durables such as motor vehicles and appliances are not, even when identical items if purchased by businesses do get treated as investment. Improvements to existing assets are included when the improvements go beyond routine maintenance. Research and development expenditures are included insofar as they represent investment that is expected to yield economic returns in the future. Fixed investment is measured gross of capital consumption in the context of GDP, net of capital consumption in the context of NDP.

Inventories are stocks of products held either for use as inputs to production or in readiness to be sold to final users. An increase in inventories over a period represents a positive contribution to investment, a decrease a negative contribution. Changes in inventories are small relative to other components of final demand, and indeed may be negative. Yet the magnitude of such changes tends to be volatile and the effect on the GDP growth rate can thus be quite significant.

Government spending includes both consumption and investment components. The investment component reflects spending on physical assets. Although government spending on education and health care contributes to the formation of human capital, for purposes of the national accounts such spending is treated as the consumption of services rather than as investment.

Exports and imports involve trade in goods and non-factor services. To conform with the product measure of GDP, the scope of exports must include spending by foreigners on goods and services produced by the home economy but not spending of foreigners on the services of home-economy factors resident abroad.

Income not spent on consumption is by definition saved. In an accounting sense, this saving must balance with the non-consumption elements of GDP expenditures. In the most primitive scenario, imagine a subsistence agricultural economy where the harvest is either eaten or preserved as seed to be planted the following year. Under such circumstances saving is transformed into investment in a straightforward way. In a modern economy saving on the part of some units is intermediated by the financial system to provide funds for other units to undertake investment (or possibly consumption but let us focus on the net availability of saving for investment). The equilibration between saving and investment thus becomes more complex. Consider first an economy with no foreign trade. Saving in such a case must be exactly absorbed in domestic investment. Either it is channeled through the financial system to support fixed capital formation and desired inventory accumulation, or undesired inventories will accumulate as goods remain unsold. The *ex ante* intentions of businesses may not be realized in the sense that inventory changes do not necessarily materialize as planned. Yet *ex post*, foregone consumption becomes investment in some form, whether it be fixed capital formation or the unintended build up of inventories.

In an open economy, exports can provide an outlet when domestic demand is insufficient to prevent undesired inventories from accumulating. Let us simplify the analysis of the connection between domestic saving and investment and the foreign trade sector by subsuming government spending into our measures of consumption and investment. We redefine these components of demand to include government such that:

$$\text{GDP} = \hat{C} + \hat{I} + X - M, \quad (4.5)$$

where  $\hat{C}$  = consumption by households and government;

$\hat{I}$  = investment by households, businesses, and government.

The difference between  $\hat{C}$  and  $\hat{I}$  (read *C-hat* and *I-hat*) as used here and *C* and *I* as used previously is the inclusion of government spending in these terms now.

Framing the analysis in terms of GDP means the external account is defined by trade in goods and services exclusive of factor services and transfer payments. Alternatively we could specify GNDI as the aggregate and would then need to incorporate foreign factor income and transfers into the external account. This broader measure of external flows reflected in GNDI comprises the current account of the balance of payments. Balance of payments accounting is the subject of our next chapter. For present purposes, we keep the focus on trade in goods and services as associated with GDP.

Saving with respect to GDP is defined as the difference between income generated by domestic production and final consumption. Thus:

$$\text{GDP} = \hat{C} + S. \quad (4.6)$$

It is worth emphasizing that saving is a flow as opposed to savings (with an “s”) which is a stock. Savings may take the form of deposits in commercial banks or reserves of the central bank or cash stuffed into mattresses. That is not the way to think about national saving though. National saving is a residual in the National Income and Product Accounts, its value being inferred from other magnitudes. Simply put, it is income not spent on consumption.

Setting the two foregoing expressions for GDP equal, the consumption terms drop out and with some rearranging we obtain:

$$S - \hat{I} = X - M. \quad (4.7)$$

The left hand side of the expression represents the excess of saving over domestic investment. This excess flows out in acquisition of foreign assets. The right hand side represents an excess of exports over imports. Export revenues not spent on imports – a trade surplus – provide the foreign exchange to support foreign asset acquisition. A trade surplus is thus matched by a capital outflow.

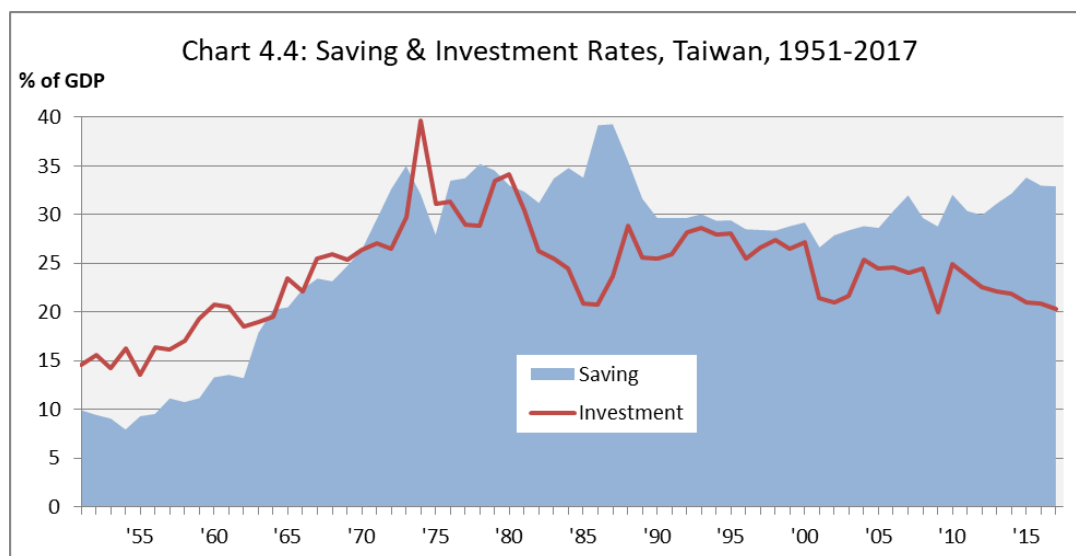
The reverse set of flows may also materialize. When domestic investment exceeds saving, an inflow of foreign capital is implied. On the trade account this means imports exceed exports. This trade deficit is financed by a capital inflow. That an economy is running a trade deficit therefore tells us it is borrowing from abroad to support domestic investment not covered by saving generated at home.

The expenditures approach to GDP compilation figures importantly in the analysis of business cycles. While supply side forces as embodied in labor, capital, and technology determine an economy’s long-run productive potential, demand side forces as reflected in the elements of expenditures are important in driving fluctuations relative to potential from year to year. The export and investment components of expenditures in particular tend to be volatile and vulnerable to shocks. The ramifications will be explored in later chapters of this text.

### *Taiwan over Time*

Taiwan’s saving and investment rates for 1951 to 2017 are presented in Figure 4.4. Taiwan’s trade balance can be inferred as the difference between its saving rate and its investment rate. In the early years the saving rate was low, falling well short of the investment rate. This means that Taiwan was importing capital from the rest of the world and concomitantly running trade deficits, using borrowed funds to finance imports in excess of exports. As is common in an economy’s development take-off phase, Taiwan’s saving rate shot up during the 1960s rising from 11.1 percent in 1959 to 35.0 percent in 1973 for an average annual increase of about 2.0 percentage points. While the investment rate increased too, the pace was not as rapid so that by the 1970s the saving and investment rates were in rough equivalence. The trade account was consequently more or less in balance. A turning point was reached around 1980. Since then Taiwan’s saving rate has consistently exceeded its investment rate meaning that

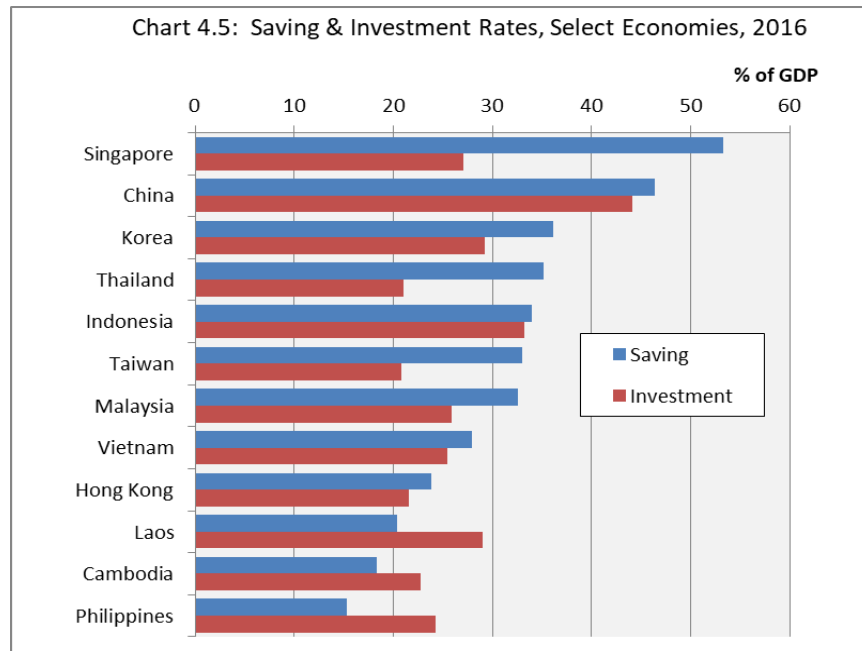
capital has flowed outward and the trade account has been in surplus with exports exceeding imports. Through the 2010s, the gap has steadily risen so that by 2017 a saving rate of 32.9 percent exceeded a domestic investment rate of 20.3 percent to yield a net outflow of capital of 12.6 percent of GDP. The trade account was thus in surplus by this same magnitude.



### *Emerging East Asia in Cross Section*

Saving and investment rates for the economies of Emerging East Asia in 2016 are presented in Figure 4.5. Singapore stands out with a saving rate in excess of 50 percent of GDP with China a bit under that marker. Clustered with saving rates in the range of 32-36 percent were Korea, Thailand, Indonesia, Taiwan, and Malaysia. The economies with the higher saving rates saw saving outstrip domestic investment and ran corresponding surpluses in their trade accounts. Singapore's imbalance was the most extreme at 26.2 percent of GDP meaning it was providing a large share of its income as investment in the rest of the world. At the opposite end of the scale, saving fell short of domestic investment for Laos, Cambodia, and the Philippines. These countries ran corresponding trade deficits. This means that the lowest income economies are making use of capital inflows to support investment, as Taiwan did early in its development. At moderate to higher incomes, however, the levels of saving and investment relative to GDP and relative to each other do not follow any clear pattern.

The important questions surrounding how economies arrive at their saving and investment rates and what this means for macroeconomic balance must be delayed to later chapters. Here we are concerned with defining measures of an economy's size and composition. Our glimpse into the range of circumstances manifest in Emerging East Asia may serve at this stage to pique the reader's curiosity: How can such stark differences come to be? And what are the ramifications?



## Summary & Linkage to the Balance of Payments

Three different approaches have been devised to measure the size of an economy, all capturing the same volume of activity but from different perspectives. First and most fundamental is the measuring of value added in production. Second is the summing of factor incomes derived from the production process. And third is the tabulating of expenditures on final goods and services. In the first instance – the product approach – the aggregate may be decomposed by industrial sector (agriculture, industry, and services). In the second – the incomes approach – the decomposition is by institutional recipient (households, corporations, and government) and by factor of production (labor and property). In the third – the expenditures approach – the breakdown is by uses of income (consumption, investment, and net exports).

Examination of national accounts data for Taiwan historically and for the economies of Emerging East Asia in contemporary cross section reveal systematic patterns of development along some lines but more idiosyncratic diversity along others. The pattern synonymous with economic development is a declining share of output from agriculture as per capita income rises, supplanted initially by industry and later by services. Concurrent with this structural transformation of the economy, the share of income attributable to employee compensation tends to rise while the share due to property yields ground. Finally, during periods of very rapid development, the saving rate may rise steeply as in the Taiwan case, and although the investment rate rises as well its pace does not match that of saving. Taiwan as a result went from importing capital and running trade deficits to exporting capital and running trade surpluses. A pattern of the lowest income economies generating relatively little saving domestically and relying instead on capital from abroad carries through in our cross section sample. But at mid to higher levels of income, saving and investment rates do not show a clear correlation with income level.

In outlining the National Income and Product Accounts, connections between the domestic economy and the outside world have come to light. These involve exports and imports,

foreign factor income and transfers, and cross-border capital movements. For a systematic accounting of an economy's external relations we turn attention in Chapter 5 to the balance of payments. The economies of Emerging East Asia are for the most part highly open. Study of their macroeconomic performance thus requires a thorough grasp of balance of payments accounting.

## Data Note

The multi-country data for 2016 are from the World Bank's World Development Indicators online database. This publicly accessible database covers nearly all economies in the world along with a variety of pre-defined groupings of economies. Records date back to 1960. More than 1000 variables are listed, with availability by economy depending on the sophistication of the statistical system.

Historical data series for Taiwan are from the Republic of China (Taiwan) Statistical Bureau.

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The definitive reference for national income accounting is the *System of National Accounts*, the most recent edition of which was released in 2008. The volume bears the imprimatur of five multilateral organizations: the United Nations; the European Commission; the Organization for Economic Co-operation and Development; the International Monetary Fund; and the World Bank. The first edition of the SNA was launched in 1953. The immediate motive was to standardize national accounting systems as a basis for apportioning shares in then formative international organizations in the aftermath of World War II. Subsequent editions in 1968 and 1993 sought to better accommodate the circumstances of developing and transitioning economies and to keep up with changes in the nature of economic activity. In view of the rapid pace of economic change, it is perhaps surprising that updates in the SNA have not been more frequent. But the need to meet changing circumstances must be balanced against the merits of preserving continuity in measurement over time.

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