

The ADB COVID-19 Policy Database: A Guide to Understanding Changes in Sectoral Balances and Private Sector Financial Positions in 2020

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The Asian Development Bank COVID-19 Policy Database recently added an entry on sector financial balances (SFBs). This addition to the policy database provides information for 35 economies on the financial positions of the private sector, government sector, and the rest of the world, which by construction add up to 0. Data used to calculate SFBs are obtained directly from flow-of-funds accounts. When this source is not available, we obtain data from the national accounts. We use SFBs to understand why the private sector balance moved into a large surplus in 2020. We argue that this surplus is a mirror image of the fiscal deficit.

Keywords: ADB COVID-19 Policy Database, flow-of-funds, sector financial balances (SFBs)

JEL codes: A10, C82

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I. Introduction

The Asian Development Bank (ADB) COVID-19 Policy Database compiles policy actions of governments in response to the coronavirus disease (COVID-19) pandemic and categorizes these actions according to their differences in operational details and financial statement effects. Financial statement effects either create more debt or equity for the recipient, which also entails transfers of financial risks. This paper is a follow up on [Felipe and Fullwiler \(2020\)](#), which provided an introduction to the database. It introduces an important addition to the database implemented in 2021—information on the financial positions of the three main sectors of the economy, that is, private, government, and the rest of the world (i.e., current or capital account), for 35 economies. This information appears under the entry “Sector Financial Balances” (<https://covid19policy.adb.org/sector-financial-balances>).

The paper is structured as follows. Section II introduces the sector financial balances (SFBs) approach and how this approach can be used to assess how the pandemic and government policies have affected the three main sectors, particularly the domestic private sector. Section III then decomposes the changes in the private sector into subsectors—households, nonfinancial firms, and the financial sector. A discussion follows in Section IV of what it means if the private sector balance improves due to a government deficit. Lastly, in Section V, we further analyze the domestic private sector’s financial position by looking at changes in leverage and financial survival constraint measures.

II. SFBs and Flow-of-Funds Accounts

From basic accounting principles, one person’s spending is another person’s income. Applying this in an economy, financial flows comprise a closed system. It is not possible, for instance, for every country to have a current account surplus; if one country has a current account surplus, then at least one other country has a current account deficit. Equivalently, if one sector of an economy has a surplus, at least one other sector must be in deficit.

Using annual and quarterly flow-of-funds reports from various economies, the database provides information on the SFBs for nonfinancial businesses (hereafter, firms), the financial sector, the household sector, the government, and the capital account balance (the net financial position of the rest of the world vis-à-vis

the economy). The following simple identities define the SFBs and their flow-of-funds-based relationships to one another:

$$\text{Domestic private balance} \equiv \text{Household sector balance} + \text{Firm sector balance} \\ + \text{Financial sector balance}, \quad (1)$$

Government balance

$$\equiv \text{Tax revenues} - \text{Government spending (including debt service)}, \quad (2)$$

$$\text{Capital account balance} \equiv -\text{Current account balance}, \quad (3)$$

Domestic private balance + Government sector balance

$$+ \text{Capital account balance} \equiv 0. \quad (4)$$

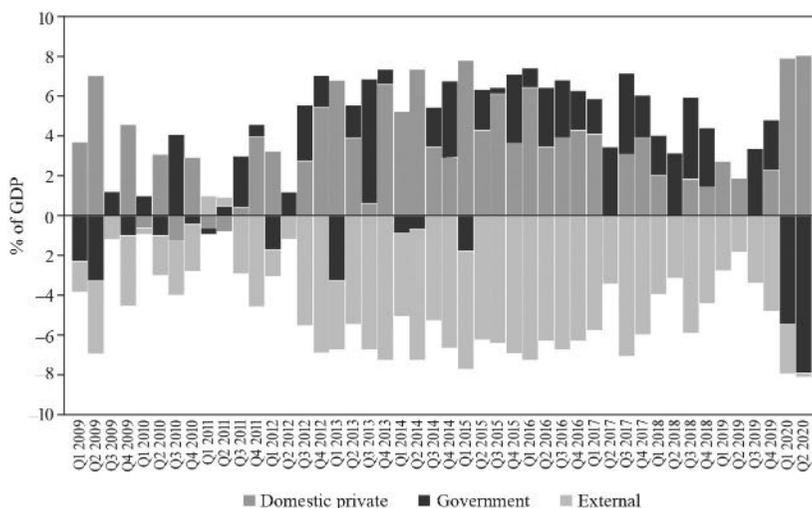
In computing SFBs, flow-of-funds and national accounts can both be used.¹ The flow-of-funds approach provides a direct way of computing the sector balances since flow-of-funds accounts already provide measures on net acquisition of financial assets (i.e., changes in financial assets less changes in financial liabilities) for all sectors including the external sector (e.g., current account). The flow-of-funds approach further allows decomposition of the private sector balance into household, firms, and the financial sector balances. The national accounts approach of computing sector balances involves using figures for government balance (GB) and current account balance (CA) and the identity $\text{DPB} \equiv \text{CA} - \text{GB}$ to derive domestic private balances (DPB).

Of the 35 economies whose SFB information is in the ADB COVID-19 Policy Database, data for 22 of the economies derive directly from the flow-of-funds accounts, while for the other 13 economies, the SFBs identity is constructed from

¹Flow-of-funds accounts are produced by national statistics or central banks and supplement national accounts in measuring economic activity across economic sectors. These are the important differences between flow-of-funds and national income accounts (see [Barbosa-Filho \(2018\)](#) for a detailed discussion):

- (i) National income accounts do not collect data on financial transactions, but flow-of-funds accounts do. Financial transactions include borrowing, lending, or changes in cash balances.
- (ii) National income accounts present current flow of final expenditure, output, and income and do not show intermediate transactions. On the other hand, flow-of-funds accounts may capture intermediate intersectoral transactions and transactions involving assets generated in past periods.
- (iii) In flow-of-funds accounts, all sectors can save and invest; however, in national income accounts, consumer durable expenditures are considered current expenditure and not an investment activity.

Figure 1. Sector Financial Balances of the Republic of Korea, Q1 2009–Q2 2020



GDP = gross domestic product, Q = quarter.

Note: Sector financial balances were computed for each sector using flow-of-funds data.

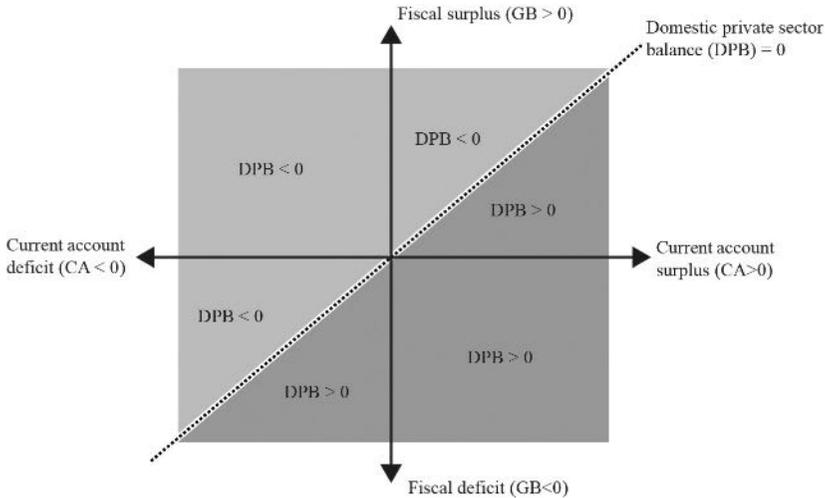
Source: Authors' calculations based on the Republic of Korea's flow-of-funds data from CEIC (accessed February 1, 2021).

the national accounts.² It is worth noting that the information on the external sector (current account) calculated using either approach will differ in general from the external sector information that comes from the balance-of-payments accounts.

To illustrate the SFBs accounting identity, we use the Republic of Korea (ROK) as an example. Figure 1 shows SFBs using equation (4) for the ROK during 2009–2020. As equation (4) shows, the sum of the SFBs is 0 (financial flows are a closed system), thus the three SFBs generate mirror images above and below 0 in every quarter in the figure. It is clear that the SFBs drastically changed during the onset of the COVID-19 crisis from the first quarter (Q1) to Q2 2020. The previous quarters before the crisis were mostly characterized by government surpluses, domestic private sector surpluses, and capital account deficits (current account surpluses). In 2020, however, the government incurred large deficits averaging 6.9% of gross domestic

²Economies with flow-of-funds data: Austria, Australia, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, the Republic of Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. Economies where sectoral balances are derived from the national accounts: Armenia; Georgia; Kazakhstan; Hong Kong, China; Mongolia; the People's Republic of China; India; Indonesia; the Philippines; Singapore; Thailand; the Russian Federation; and South Africa.

Figure 2. Sector Financial Balances Map



CA = current account balance, DPB = domestic private balance, GB = government balance.

Source: Authors' illustration based on Parenteau (2010).

product (GDP), and the domestic private sector had surpluses averaging 8.3% of GDP. This historically large government deficit is a deviation from the ROK's typical pattern of consistent current account surpluses mirrored by domestic private sector surpluses, with the government's budget position mostly in surplus but also often a residual of the net of the other two sector balances.

A useful way to visualize the inherent interactions of the SFBs is in Figure 2, which presents two axes and a bisecting line that together generate the sector financial balances map (SFBM).³ The horizontal axis is the CA and the vertical axis is the GB. The diagonal dotted line bisects the graph through the origin—the DPB is 0 on every point along this line. For the SFBM, it is useful to substitute the negative of the CA from equation (3) into equation (4) and then rearrange as follows:

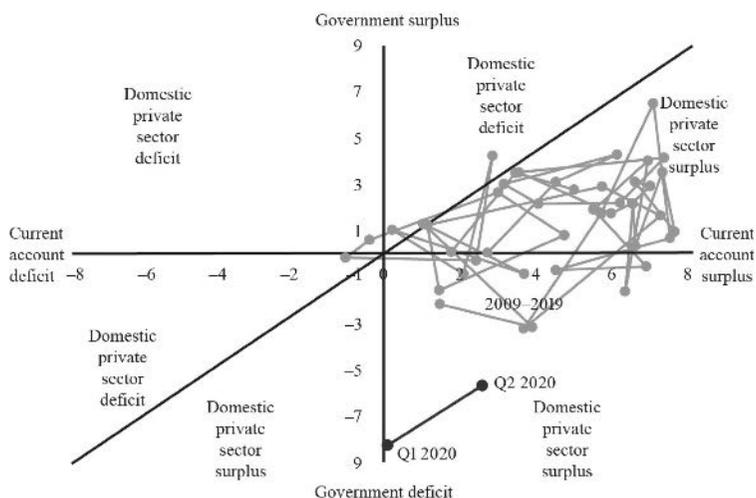
$$\text{Domestic private balance} \equiv \text{Current account balance} - \text{Government sector balance.} \quad (5)$$

Using the abbreviations in the figure, equation (5) becomes

$$\text{DPB} \equiv \text{CA} - \text{GB.} \quad (6)$$

³The SFBM originally appeared in Parenteau (2010).

Figure 3. Sector Financial Balances Map of the Republic of Korea, 2009–2020



GDP = gross domestic product, Q = quarter.

Source: Authors' calculations using data from CEIC (accessed February 1, 2021).

Figure 2 visually represents the logic of equations (5) and (6): the area to the northwest of the $DPB = 0$ line is where $DPB < 0$ since $CA < GB$, while the area to the southeast of $DPB = 0$ is where $DPB > 0$ since $CA > GB$.

Figure 3 plots the quarterly SFBs of the ROK for the period 2009–2020 in the SFBM. For most of 2009–2019, the ROK had a combination of government surplus, current account surplus, and domestic private sector surplus. However, in the first two quarters of 2020, the ROK incurred significantly high government deficits and had smaller current account surpluses, in contrast to the previous years when the ROK had persistently large current account surpluses.

Figure 4 presents the SFBs of more economies for Q4 2019 and Q2 2020 using the SFBM. In Q4 2019, a majority of the economies had a domestic private sector surplus and a current account surplus. In Q2 2020, these economies moved southwest on the map, which corresponds to a higher government deficit, higher domestic private surplus, and small or negative current account surplus. As shown in Table 1, government deficit for these economies averaged 12.37% in Q2 2020 compared to 1.37% in Q4 2019. This was expected after economies released economic packages to support the private sector. The governments' deficits are the private sectors' surpluses. Figure 5 shows the SFBs of selected economies whose current account surpluses normally drive the domestic private sector. In 2020, these countries switched to the government sector driving the domestic private sector.

Figure 4. Sector Financial Balances Map, Selected Economies (% of GDP)

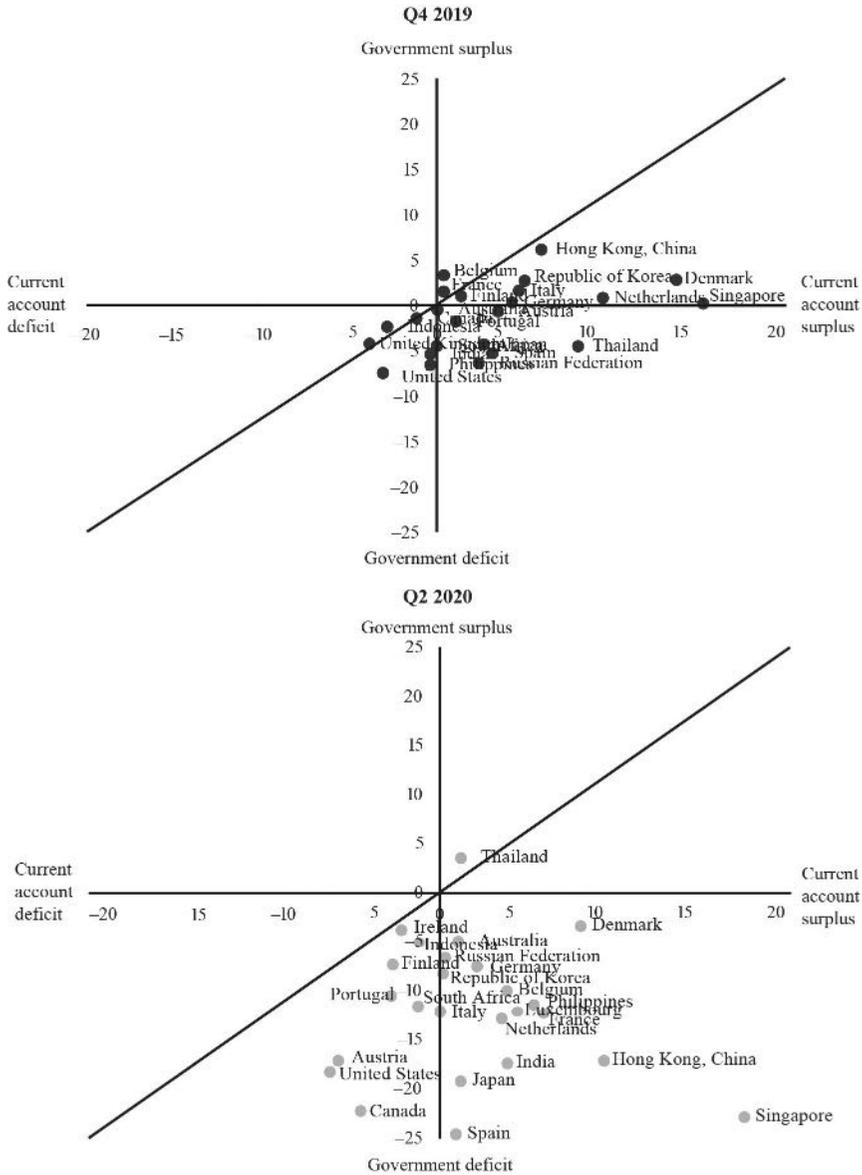


Table 1. **Average Sector Financial Balances
(% of GDP)**

	DPB	Government	CA
Q4 2019	3.90	-1.37	2.52
Q1 2020	1.3	-2.2	0.9
Q2 2020	13.71	-12.37	1.35

CA = current account balance, DPB = domestic private sector balance, GDP = gross domestic product, Q = quarter.

Note: Data include economies listed in Figure 4. Source: Authors' calculations using flow-of-funds data from Eurostat (2021) and CEIC, except for Hong Kong, China; India; Indonesia; the Philippines; the Russian Federation; Singapore; South Africa; and Thailand, which were estimated using national accounts data (accessed February 1, 2021).

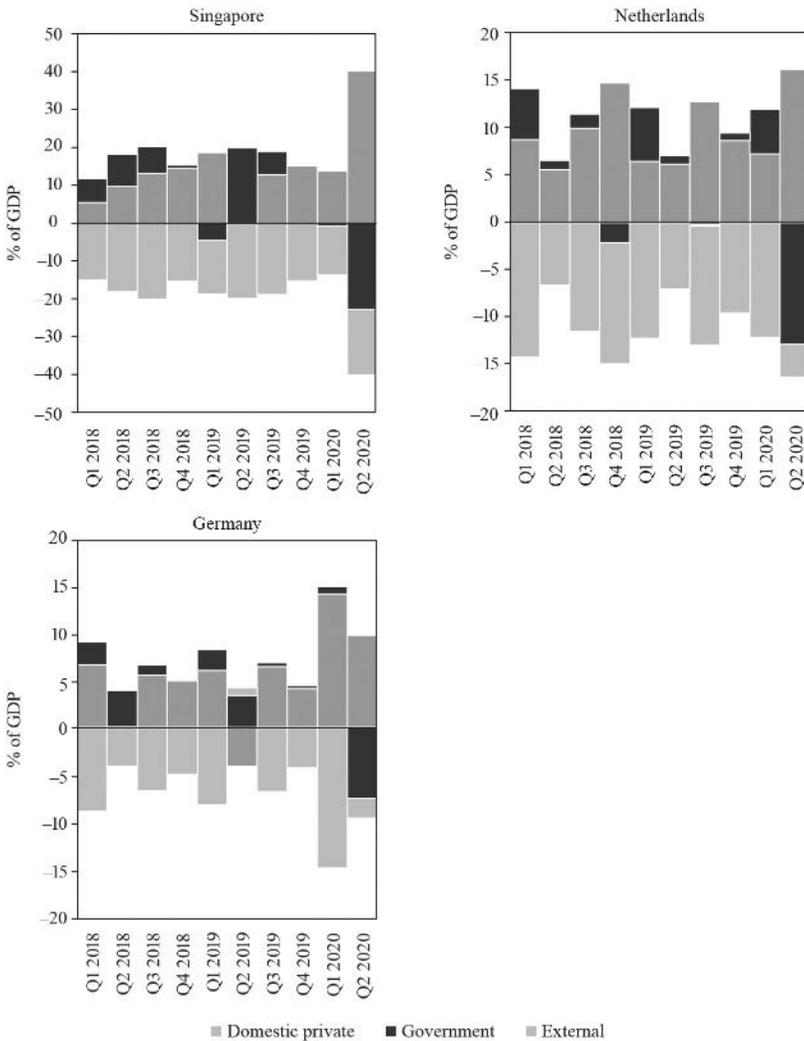
Countries tend to pursue different macroeconomic policy mixes that result in a typical signature pattern of SFBs. These patterns may be driven by fiscal rules, trade policies, or overall economic growth trends. Figure 6 illustrates the patterns for India, Indonesia, and Germany. The first chart for each country shows the financial balances for all three sectors, while the second chart shows only the balances for the two sectors that contribute most to the mirror-image nature of the three balances.

Figure 6 shows that the path of India's sector balances is dominated by the private sector and government sector balances since they move in near mirror image with one another. Unlike India, the pattern in Indonesia is one of persistent government deficits that are nearly mirrored by current account deficits, leaving domestic private sector balances near 0. Germany, on the other hand, has a pattern similar to that of the ROK (Figure 1), with persistent domestic private sector surpluses that are nearly mirrored by large current account surpluses.

III. Decomposing the Domestic Private Sector Balance

Most countries saw a significant increase in their domestic private sector balances during the early stages of the pandemic. However, it is critical to understand which parts of the domestic private sector experienced the increase. The sector balances of the firms, households, and financial sector are available in the flow-of-funds data. The sum of the balances of these three subsectors is the total domestic private sector balance. It is important to note that transactions across these three subsectors do not affect the total domestic private sector balance.

Figure 5. Sector Financial Balances, Selected Economies, Q1 2018–Q2 2020 (% of GDP)



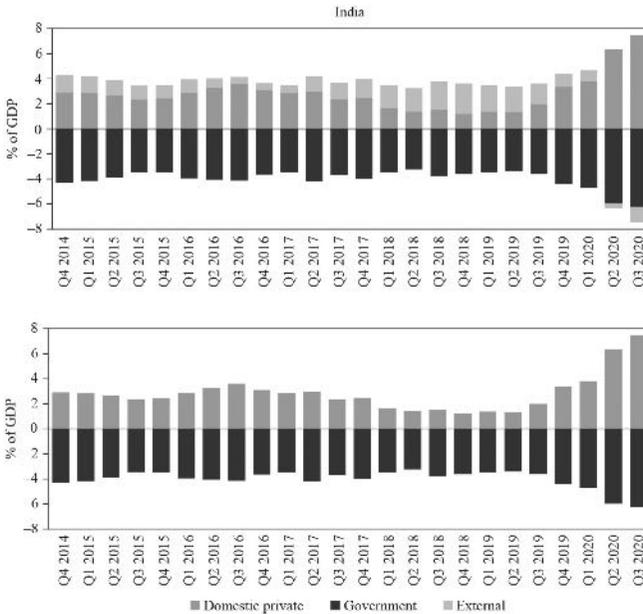
GDP = gross domestic product, Q = quarter.
 Source: Authors’ calculations using data from CEIC (accessed February 1, 2021) and Eurostat (2021).

Figure 7 shows the decomposition of the domestic private sector balances of Germany, the ROK, and the United Kingdom (UK). The household sectors in these countries usually have positive balances, while the firm sector is either negative or alternates between positive and negative balances. In all three countries, the household sectors had significantly higher positive balances in 2020 compared to its usual balances in the past years. In Q1 and Q2 2020, the ROK’s household sector had an average

surplus equivalent to 14.1% of GDP. This represents a significant increase from 2019 when the household sector surplus averaged 4.7% of GDP. The firm sector in the ROK had a higher deficit in the first half of 2020 averaging 6.2% of GDP compared to 3.1% in 2019. Meanwhile, no significant change is seen for the financial sector.

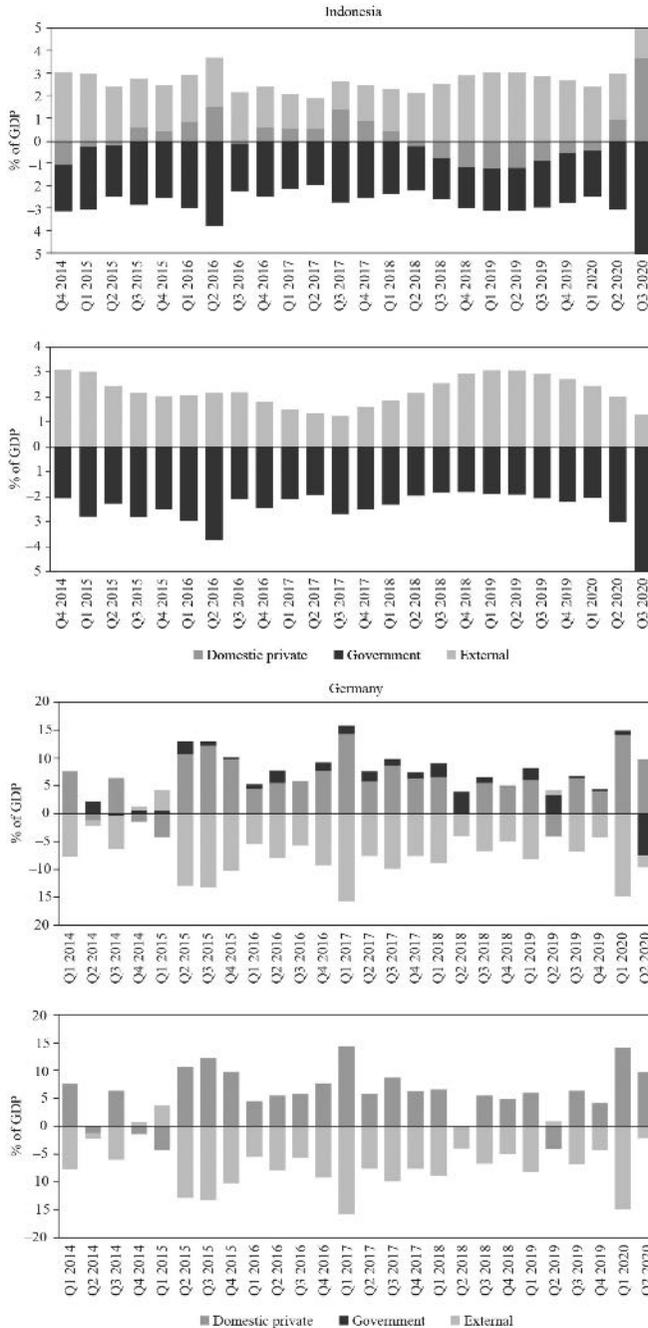
Decomposing domestic private sector balances using available flow-of-funds data reveals a consistent pattern for the economies shown in Table 2: all economies experienced a significant increase in household sector surplus in the first half of 2020. This can be explained either by a decline in spending or an increase in income in the household sector. Government-imposed lockdowns and quarantines and expectations of recessions may have lowered household expenditures. On the other hand, governments have implemented economic measures to maintain or increase household income, including tax cuts, moratoria, subsidies, grants, and aids, which are under Measure 05 of the ADB COVID-19 Policy Database.

Figure 6. Sector Financial Balances of India, Indonesia, and Germany



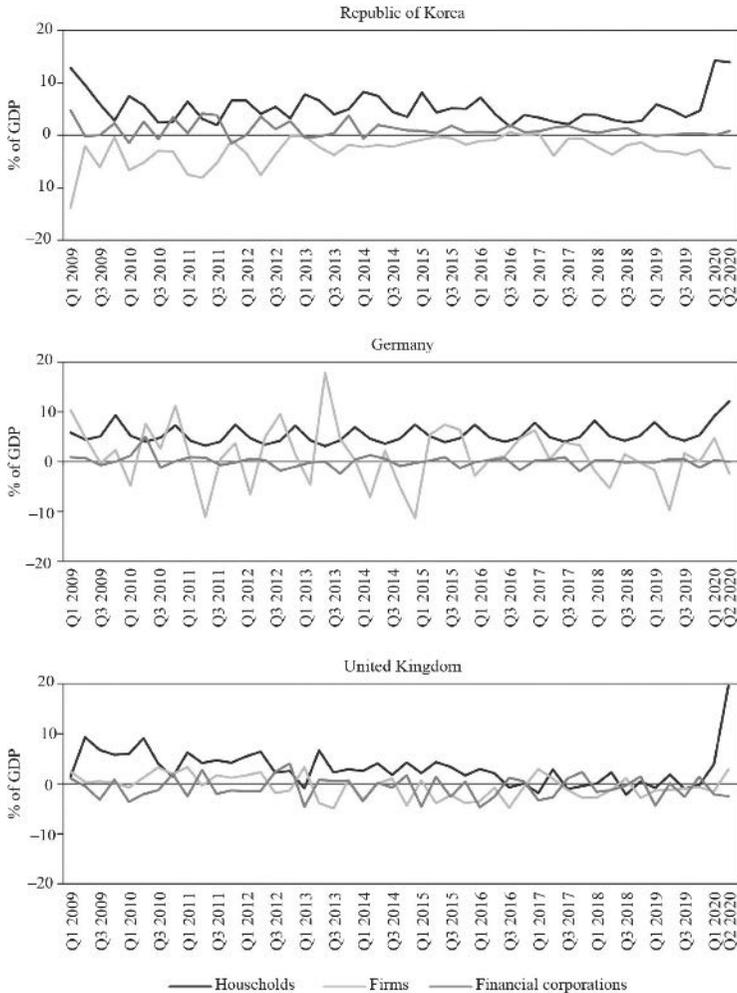
Continued.

Figure 6. *Continued.*



Source: Authors' calculations using data from CEIC with seasonal adjustment for India and Indonesia and Eurostat for Germany (2021).

Figure 7. Domestic Private Sector Balances, Selected Countries, Q1 2009–Q2 2020



GDP = gross domestic product, Q = quarter.

Source: Authors' calculations using flow-of-funds data from CEIC (accessed February 1, 2021) and Eurostat (2021).

The domestic private sector balance has been a reliable indicator of financial fragility in several countries.⁴ Financial fragility refers to a worsening financial position of a household, firm, bank, government, or sector of the economy in terms of

⁴Refer to Chapters 11 and 12 of the Asian Development Bank (2019) for a discussion in the Indonesian context.

Table 2. **Average Household and Firm Sector Balances, Selected Countries (% of GDP)**

Country	Households		Firms	
	2019	2020	2019	2020
Republic of Korea	4.7	14.1	-3.1	-6.2
Spain	1.2	13.7	1.6	-1.5
United Kingdom	-0.1	10.9	-1.1	0.4
Germany	5.6	10.6	-2.4	1.2
France	2.6	9.9	-0.5	-3.1
United States	5.0	9.2	-1.4	-1.7
Netherlands	2.6	8.4	4.9	3.4
Italy	1.2	7.8	0.7	2.2
Japan	2.8	6.1	3.2	3.6
Portugal	1.4	5.6	-2.6	-4.8

GDP = gross domestic product, Q = quarter.

Note: 2020 includes only Q1 and Q2 data.

Source: Authors' calculations using flow-of-funds data from CEIC (accessed February 1, 2021) and Eurostat (2021).

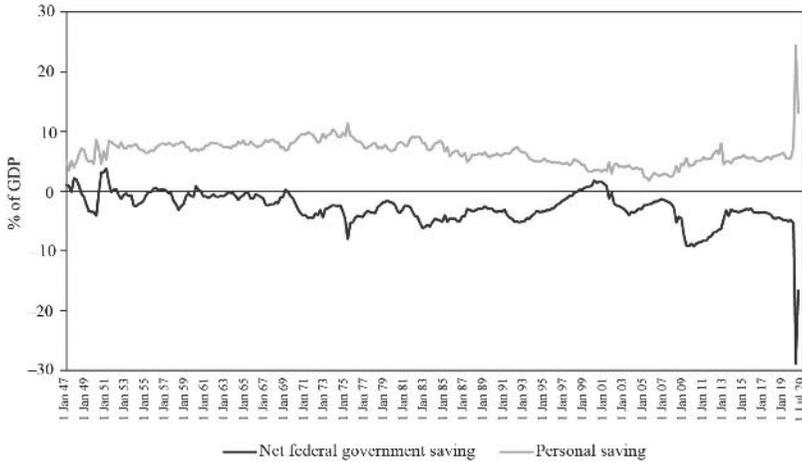
the ability of its cash inflows to service payment obligations, particularly those related to debt. The degree of financial fragility, in turn, affects the economy's risk of financial instability, whether because of greater sensitivity to shocks that affect the economy or from interactions of rising financial fragility itself with the state of the economy and/or macroeconomic policy.⁵

IV. What Does It Mean if the Private SFB Improves Due to a Government Deficit?

In the United States (US), increased government transfers and tightened consumer spending resulted in a spike in personal saving in 2020. A recent essay by a Federal Reserve Bank of St. Louis economist shows that net government transfers for Q2 2020 increased by 16.7% compared to the same quarter in 2019, while personal consumption expenditures declined by 9.3% (Vandenbroucke 2021, 2). The essay concludes with a chart identical to Figure 8 showing time series data for personal

⁵To be clear, there is no pure accounting link between a negative private sector balance and rising financial fragility. For instance, a negative private sector balance resulting from, say, firm and financial sector equity issuance, or from the fact that one or more of the subsectors were spending by simply reducing excess cash balances, would be less likely to accompany a significant rise in financial fragility.

Figure 8. Personal Saving and Net Federal Government Saving, United States, 1947–2020



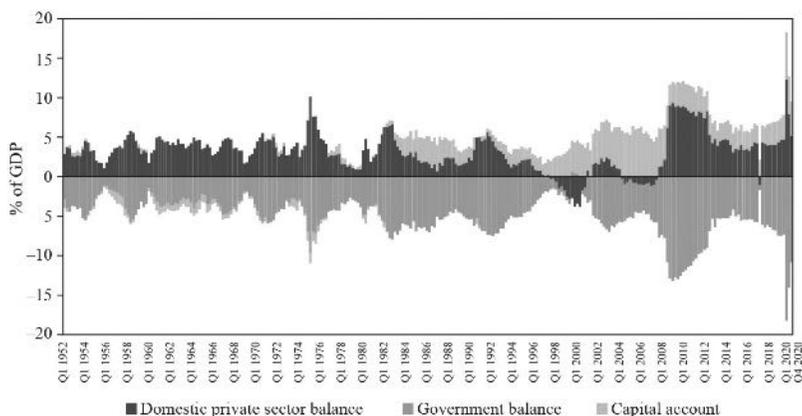
GDP = gross domestic product.

Source: Authors' calculations using United States' Flow-of-Funds Accounts at <https://www.federalreserve.gov/releases/z1/> (accessed February 1, 2021).

saving (essentially household saving) and net federal government saving, both as a percentage of GDP, noting that the two mirror each other. This observation leads the author to claim, “If U.S. households recognize that their government benefits will raise government debt and their future taxes, then they may have rationally decided to save most or all of those benefits to pay those future taxes” (Vandenbroucke 2021, 3). Economists will recognize this argument as an application of the theory of Ricardian Equivalence, whereby the private sector saves proceeds from an increase in the government deficit in anticipation of paying for an increase in future taxes.

As this paper has already shown, however, the relationship between government and private sector financial positions is an accounting identity, not something that must be explained using models. Thus, the appropriate place for explaining or discussing macroeconomic outcomes is *after* recognizing the underlying accounting identity. The accounting identity for SFBs obviously holds for the US—as Figure 9 confirms—just as it does for every country. The household data in Figure 8 are simply a subset of the private sector data in Figure 9; likewise, the federal government data in Figure 8 are a subset of the total government sector data in Figure 9. Consequently, the large government deficits of 2020, particularly in the second quarter, are necessarily accompanied by an equal-sized increase in the sum of the private sector balance and

Figure 9. Sector Financial Balances, United States, Q1 1952–Q4 2020



GDP = gross domestic product.

Source: Authors' calculations using United States' Flow-of-Funds Accounts at <https://www.federalreserve.gov/releases/z1/> (accessed February 1, 2021).

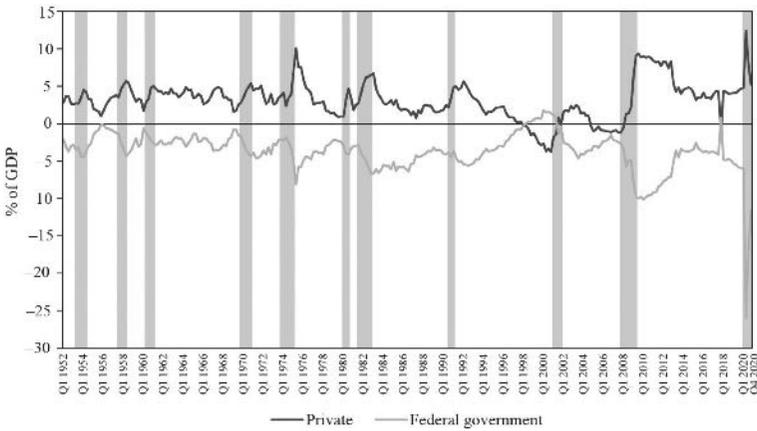
the current account deficit. In this case, while both increased, the private sector balance increased more.⁶

Unlike the ROK, the US private sector balance tends to mirror the GB, not the capital account. This is largely obvious from casual observation of Figure 9. Figure 10 isolates the federal government portion of the GB and compares it with the private sector balance, further illustrating the historical mirroring relationship. One could predict from this relationship that the government's deficits in 2020 would mostly raise the private sector's balance.

On the other hand, historical data of the components of the private sector balance shown in Figure 11 would not necessarily suggest that the household portion of the private sector balance would dominate as it did in 2020. While previous large declines

⁶The personal saving data in Figure 8 use national income and product accounts, whereas the data in Figures 9–11 are from flow-of-funds accounts. As explained above, the two are not the same. For instance, personal saving is defined by the Bureau of Economic Analysis as “equal to personal income less personal outlays and personal taxes; it may generally be viewed as the portion of personal income that is used either to provide funds to capital markets or to invest in real assets such as residences” (Bureau of Economic Analysis 2020, 2–7). Personal saving is thus a measure of unspent, after-tax income. Note, though, that personal saving is blind by design to any sources of funds for personal outlays and personal taxes *except for personal income* (such as borrowing, withdrawals from savings accounts, and asset sales), and also blind by design to different uses of personal saving (such as increased deposit accounts, investments in equity or bond markets, or debt reduction). The household subsector balance within the private sector balance of the flow-of-funds accounts is the change in the subsector's financial assets less the change in its liabilities—it is thus inclusive of changes in all sources and all uses of funds. Neither measure is inherently “better” or “worse” than the other, much like how a business income statement does not provide inherently better or worse information than its cash-flow statement.

Figure 10. Private Sector and Federal Government Balances, United States, Q1 1952–Q4 2020

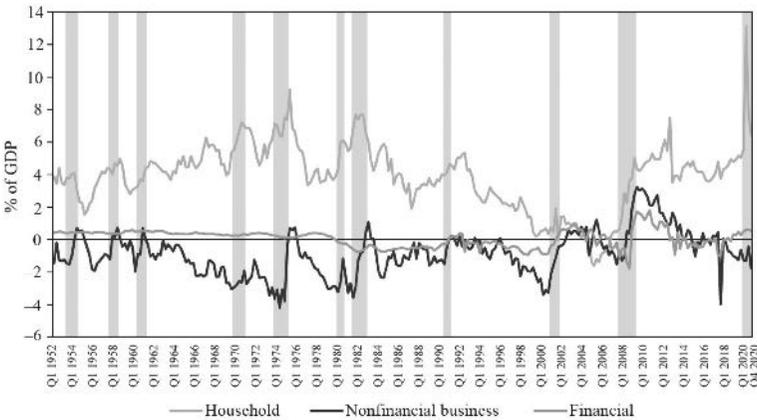


GDP = gross domestic product, Q = quarter.

Source: Authors’ calculations using United States’ Flow-of-Funds Accounts at <https://www.federalreserve.gov/releases/z1/> (accessed February 1, 2021).

in the federal GB, most notably during recessions (vertical columns in Figures 10 and 11), routinely accompanied significant increases in the household portion of the private sector balance, increases in the firm sector’s balance were just as routine. The 2020 government deficit, however, did not bring a similar increase in the firm sector balance as it did in previous recessions.

Figure 11. Private Subsectors’ Balances, United States, Q1 1952–Q4 2020



GDP = gross domestic product, Q = quarter.

Source: Authors’ calculations using United States’ Flow-of-Funds Accounts at <https://www.federalreserve.gov/releases/z1/> (accessed February 1, 2021).

Table 3 further illustrates this same point by presenting changes in the US federal GB in the periods with significant peak-to-trough swings—all coinciding with recessions, as is visible in Figures 10 and 11—since 1974, alongside changes during these same periods in the private sector balance, broken down by households, firms, and financial sectors. In particular, prior to 2020, the nearly 40-year historical record shows that the firm balance on average rises *more* than the household subsector balance (3.51 percentage point increase for the firm subsector compared to a 2.3 percentage point increase for the household subsector). By contrast, while the Q4 2019–Q2 2020 period shows a historically large rise in the household subsector balance, the firm subsector balance *declined* for the first time (by 0.69 percentage points).

In other words, whereas the private sector balance increased with the fall in the government sector balance during Q4 2019–Q2 2020—as necessitated by the accounting identity absent a rise in the CA—what is surprising is *not* that the household subsector balance increased but rather that its rise accounted for all of the rise in the private sector balance. In all previous peak-to-trough swings, the firm subsector balance had also increased, usually by *more* than the household subsector. During Q4 2019–Q2 2020, however, the firm subsector balance *declined*. Note that this contradicts Vandenbroucke’s Ricardian Equivalence-based interpretation of the rise in household personal saving since, if true, it should apply also to the behavior of firms. That is, Vandenbroucke gives no explanation for why only households should expect higher taxes in the future and not firms as well. As such, his argument provides no rationale for why households would save more in response to a deficit and why firms would instead do the *opposite*, particularly given that expected forgiveness in Payroll Protection Program loans to businesses is a significant contributor to multiple rounds of the fiscal response to COVID-19.⁷

If households were not saving government transfers in anticipation of higher taxes in the future, why *did* they save more? Table 4 presents monthly changes in household income, saving, spending, and employment from February 2020 to December 2020 compared to 12 months earlier, as an attempt to isolate COVID-19-related differences. Column A shows the changes in government transfers, which peaked in April 2020 due mostly to the direct payments and additional unemployment benefits provided by the CARES Act. Thereafter, the rise in transfers tapers off until falling by nearly half in August 2020, and then continues to decline during the last quarter of the year. Disposable income in column B follows a similar pattern of

⁷In Figure 7, a similar decline occurs in the firm sector balance in 2020 for the ROK and Germany, although both the household and firm sector balances increased in the UK.

Table 3. Federal Government Balance, Private Sector Balance, and Private Subsectors' Balances as Shares of GDP, United States during Peak-to-Trough Swings (Average change, percentage of GDP)

Period	Federal	Private Sector	Household	Firm	Financial
	Government Balance	Balance	Subsector Balance	Subsector Balance	Subsector Balance
Q2 1974–Q2 1975	-6.27	7.67	2.81	4.90	-0.04
Q2 1979–Q1 1983	-4.57	5.60	2.08	4.06	-0.56
Q1 1989–Q3 1992	-2.37	2.78	1.55	1.51	-0.28
Q2 2000–Q3 2003	-6.15	6.00	0.42	2.90	1.67
Q4 2006–Q3 2009	-8.49	10.48	4.63	4.20	1.64
Average	-5.57	6.52	2.30	3.51	0.49
Q4 2019–Q2 2020 ^a	-20.06	7.71	8.07	-0.69	0.32

GDP = gross domestic product, Q = quarter.

^aThe state or local government balance as a share of GDP increased by 9.35 percentage points between Q4 2019 and Q2 2020. The change in the total government sector balance as a share of GDP was -10.71 percentage points for this period.

Source: Authors' calculations using United States' Flow-of-Funds Accounts at <https://www.federalreserve.gov/releases/z1/> (accessed February 1, 2021).

Table 4. Household Income, Saving, Spending, and Employment, United States, 2020 (Change from 12 months earlier)

	(A)	(B)	(C)	(D)	(E)	(F)
	Government Transfers	Disposable Personal Income	Personal Saving	Consumption	Wages and Salaries	Employment
	\$ Billion					
	Million					
February	10.7	52.5	-1.0	53.4	35.9	2.4
March	16.4	26.7	69.9	-41.0	5.8	0.6
April	290.9	233.0	432.3	-194.3	-51.3	-20.3
May	196.8	158.2	276.7	-110.6	-28.3	-17.6
June	151.3	134.4	188.1	-45.1	-11.9	-12.9
July	145.6	139.9	180.3	-32.3	-2.8	-11.3
August	82.3	84.2	113.1	-21.1	2.6	-10.0
September	79.3	91.3	105.1	-7.5	8.3	-9.5
October	58.4	76.1	92.6	-9.2	10.2	-9.0
November	47.5	48.8	75.6	-18.3	9.8	-8.9
December	54.0	57.2	93.5	-26.7	11.7	-9.3

Source: Authors' calculations using United States National Income and Product Accounts at <https://fred.stlouisfed.org/tags/series?i=bea%3Bmipa> (accessed February 1, 2021).

increases and decreases, although the April and May 2020 increases are about 20–25% smaller than the increases in government transfers. Personal saving (column C) also follows a similar pattern *except* that its increases are larger than the rise in government transfers (44% larger than transfers on average, in fact, for April through December 2020).

This much larger rise in personal saving obviously suggests that households have a motivation beyond saving transfers to pay taxes later or simply putting aside additional income they do not need. The decline in consumption in column D follows a pattern mirroring the rise in government transfers, but of a much smaller magnitude than the transfers: the consumption spending declines in April and May 2020, for instance, are 33% and 44% smaller than the increases in government transfers, respectively (the average for April through December 2020 is a 35% smaller decline in consumption relative to the rise in government transfers). In other words, households were saving considerably more than the rise in transfers, while reducing consumption *less* than the rise in transfers.

Columns E and F provide some explanation for this. Between April and July 2020, wages and salaries received by households were lower than 12 months earlier, with the largest declines in April and May. Likewise, 20 million jobs were lost in April, with only 11 million regained by the end of December 2020. Households clearly had reasons to be concerned about their future labor income and to increase precautionary saving.

Table 5 provides additional rationale for the rise in personal saving and fall in consumption. The first three columns show quarterly changes from 12 months earlier in the three consumption categories—durables, nondurables, and services. All three declined in Q2 2020, but it is clear that the decline in services throughout the year, starting in March, is driving the fall in consumption spending. The final five columns of Table 5 show four of the major subcategories of spending on services—health-care services, transportation services, recreational services, and food services and accommodations—and the total across all four subcategories. The total shows that the decline in services consumption is roughly the same as the decline in spending in the four subcategories. It is well known that each of these four subcategories were greatly affected by COVID-19-related restrictions, lockdowns, and so forth.⁸ In short, in addition to the precautionary reasons for reducing consumption, households further

⁸As Coombs (2020) reports, “State and federal officials ordered hospitals and physicians to curtail nonemergency care last month [March 2020] to focus on responding to coronavirus cases and to reduce the risk of patient infections in doctors’ offices. Despite a surge in the use of telemedicine, the massive pullback in services late in the quarter hit the healthcare sector hard, with hospitals, outpatient surgical centers and doctor’s offices all reporting big losses and cutting jobs as revenues dried up.”

Table 5. Consumer Spending by Category, United States (Change from 12 months earlier, \$ billion)

	Durables	Nondurables	Services	Health-Care Services	Transportation Services	Recreational Services	Food Services and Accommodations	Total
Q1 2020	1	34	33	-1	-4	-9	-13	-27
Q2 2020	-14	-25	-311	-110	-48	-72	-96	-326
Q3 2020	50	29	-140	-22	-32	-47	-46	-147
Q4 2020	49	25	-128	-13	-32	-46	-49	-140

Q = quarter.

Source: Authors' calculations using United States National Income and Product Accounts at <https://fred.stlouisfed.org/tags/series/?t=bea%3Bnipa> (accessed February 1, 2021).

reduced purchases when services (and goods, particularly in Q2 2020) became unavailable for purchase.

Finally, official measures of saving do not distinguish between the accumulation of additional financial wealth (for instance, net additions to balances in savings accounts or investment portfolios) and reducing financial obligations (that is, paying down household debt). According to the Federal Reserve Bank of New York's quarterly household debt and credit report, households reduced total debt in Q2 2020 by \$34 billion, which included reductions of \$11 billion in debt from home equity lines of credit, \$3 billion in auto loans, and \$76 billion in credit card loans, but were partially offset by a \$63 billion increase in mortgage debt due to historically low interest rates for those with high credit ratings. Again, given the uncertain outlook for income and employment in the first weeks and months of the COVID-19 pandemic, it is reasonable for households to reduce their debts or avoid taking on new debt.

Overall, the SFBs accounting identity always holds. A government sector deficit results in an identical increase in the sum of the private sector surplus and capital account. Starting there—as opposed to starting from the Ricardian Equivalence perspective—suggests a deeper look into the changes in spending, saving, and debt accumulation throughout the private sector. What emerges is that the lack of improvement in the firm subsector balance is the historically anomalous outcome, not the fact that personal saving increased as the federal government incurred large deficits. Households reduced spending and also temporarily reduced debt due to lost employment and unprecedented uncertainty of near-term employment and income prospects, and also because many services and some goods became unavailable to purchase, not due to anticipation of higher future taxes.

Even so, asking why the household and firm subsectors acted as they did is merely an intermediate step toward understanding how the SFBs evolved. For this work to be of full use to policy makers requires integrating the information so far with an analysis of how well policy responses to the COVID-19 pandemic—government deficits and otherwise—sustained or (even better) improved private sector financial positions relative to where they stood at the start of the pandemic. This is the subject of the next section.

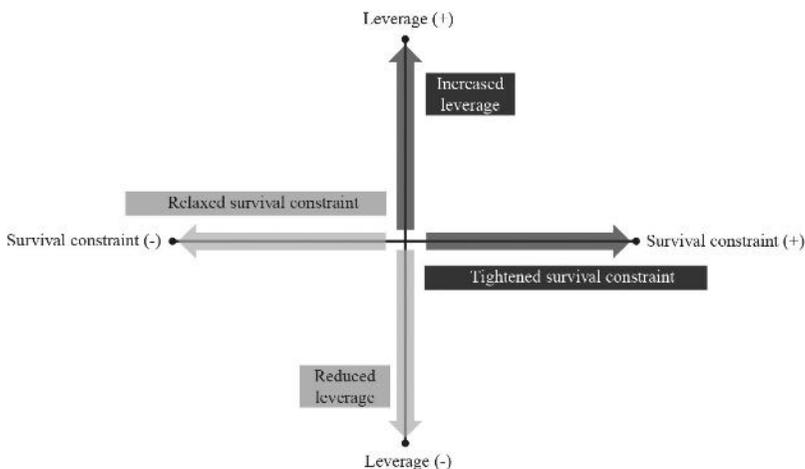
V. Domestic Private Sector Financial Position During the Pandemic

Examining the financial positions of the private sector is the final step to understanding the sector's financial fragility, having started with an overall view given by SFBs and flow-of-funds data. To measure financial fragility, two types of measures

(at least) are necessary—stock measures of financial obligations (expected or outstanding) and flow measures that compare cash inflows (or sources) against current or near-term payment commitments and other essential cash outflows (or uses). The former relates to financial leverage, which is usually measured using debt-to-asset, debt-to-income, or asset-to-equity (or net worth) ratios. The latter refer to the ability of the household or business to survive financially—a “financial survival constraint,” in other words, that relates income flows to payment commitments or necessary uses of funds. For example, for the household sector, uses of funds primarily include mortgage or rent payments, debt service, utilities, food, transportation, and other necessities, while for the business sector, uses of funds include variable and fixed costs, leases, principal and interest payments, taxes, and net working capital.

A representation of the private sector’s financial position and fragility as it evolves via these two types of measures can be illustrated in a financial positions map (FPM) as shown in Figure 12. The vertical axis shows the degree or amount of leverage, while the horizontal axis shows the degree to which the financial survival constraint is relaxed (left) or tight (right). Financial positions become more fragile as they move to the north or the east of the graph, with the most fragile positions in the northeast corner. The opposite—robust or resilient financial positions—occurs as financial positions move to the south or the west of the map, with the most robust or resilient positions in the southwest corner.

Figure 12. **The Financial Positions Map**

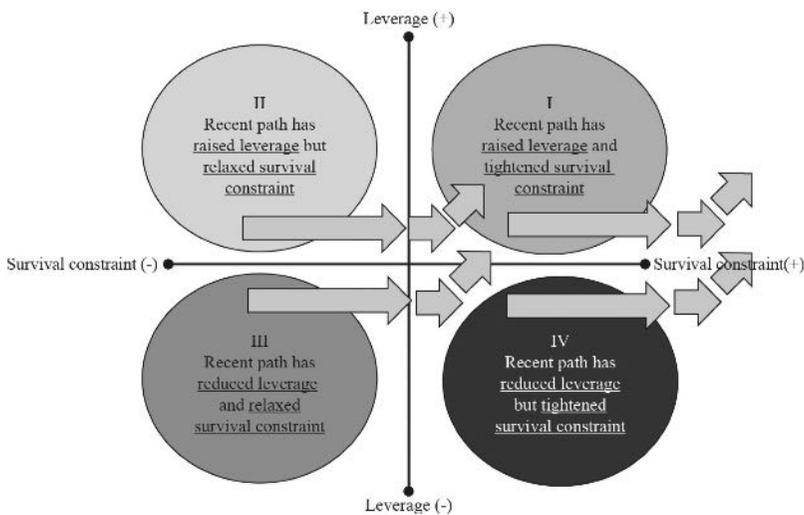


Source: Authors’ illustration.

The initial impact of the pandemic on private sector financial positions was collapsing income and revenues, while most debt service, rent, utilities, and other payment commitments remained the same. Thus, regardless of the private sector's starting financial position, the economic shutdown tightened the sector's financial survival constraint and shifted its position further to the right of the FPM. The shock, in turn, increases the credit risks of the private sector, which—*ceteris paribus*—can raise the interest rate on refinancing short-term commitments, thus raising debt service and further tightening the financial survival constraint. In addition, if the private sector responds to the financial crisis with new borrowing (that is, beyond refinancing previous commitments) as the only possible way to meet current payment commitments, then this would raise leverage. Figure 13 shows these effects of the COVID-19 pandemic in the FPM.

Because the private sector's financial fragility affects the total economy's growth and stability, governments ought to protect the private sector's financial position. Governments' policy responses at the onset of the pandemic shock, if adequate for stabilizing private sector financial positions, should have prevented or delayed a tightening of the survival constraint and an increase in leverage.

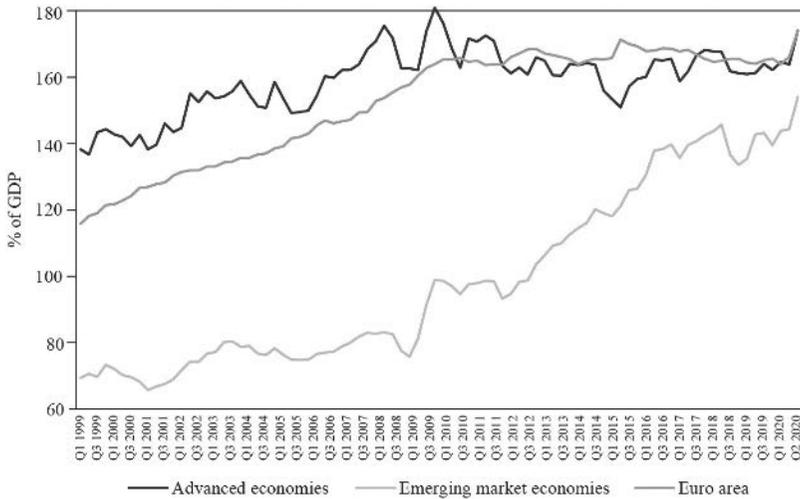
Figure 13. **Evolution of the Private Sector's Financial Position after a Pandemic Shock**



Note: The arrows illustrate how an economic shutdown can shift the private sector's financial position upward and further to the right of the financial positions map regardless of its starting position.

Source: Authors' illustration.

Figure 14. **Credit to Nonfinancial Sector as a Percentage of Gross Domestic Product, Q1 1999–Q2 2020**



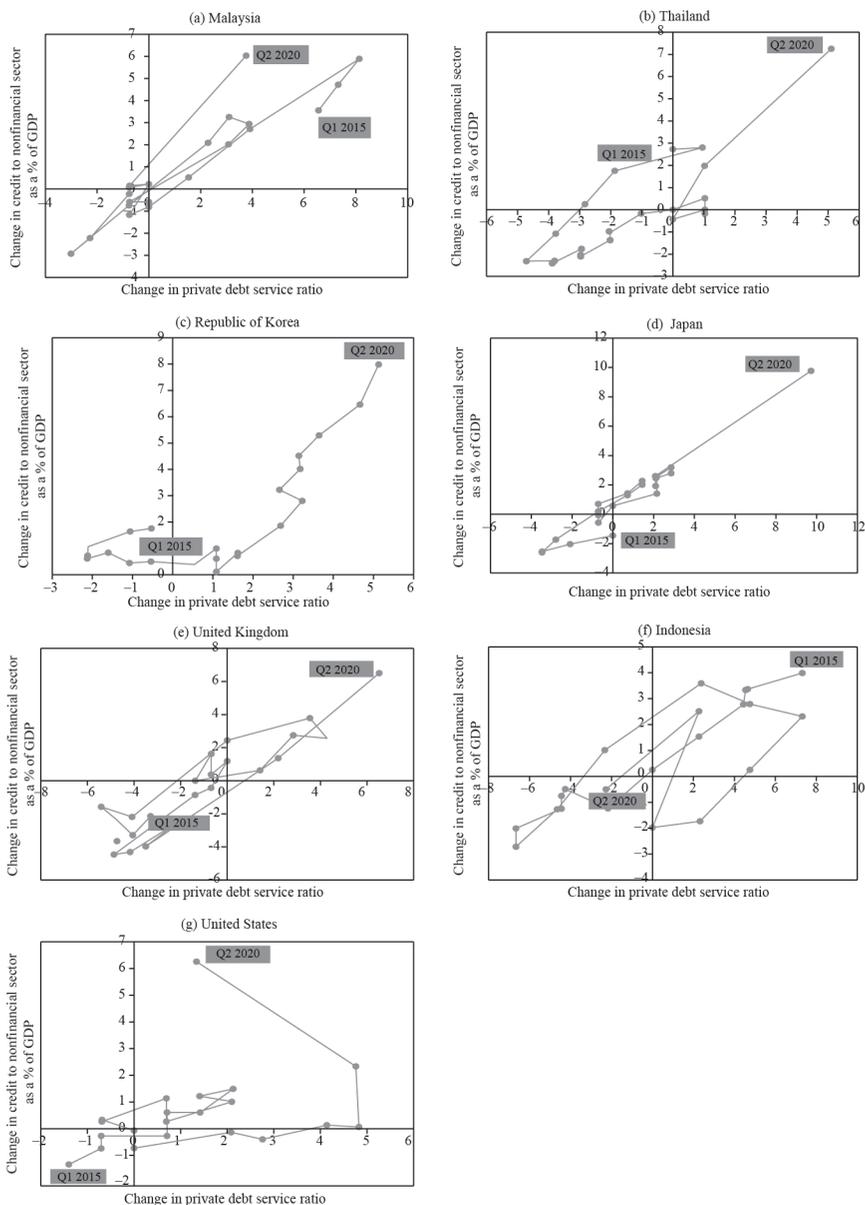
GDP = gross domestic product, Q = quarter.

Source: Bank for International Settlements. <https://www.bis.org/statistics/totcredit.htm> (accessed February 1, 2021).

Figure 14 shows the historical trend in nonfinancial sector debt levels since 1999. From 1999 and leading up to the 2008 global financial crisis (GFC), advanced economies experienced steady increases in private sector debt levels. For emerging market economies, by contrast, the increases started after the GFC. In 2020, steep increases in private sector debt levels occurred in both advanced and emerging economies. By Q2 2020, advanced economies' credit to the nonfinancial sector reached 174% of GDP, while emerging market economies' credit to the nonfinancial sector was 154% of GDP. (The increase is partly due to the fall in GDP.)

Using the Bank for International Settlements' data on private nonfinancial sector credit and debt service as simple proxies to measure the private sector's leverage and financial survival constraint, respectively, provides an example of how the FPM works. For leverage on the FPM's vertical axis, the change in the private sector's debt-to-GDP ratio is the proxy. For the financial survival constraint, the proxy is the change in the private sector's debt service-to-GDP ratio. Debt service is obviously a far narrower measure of uses of funds than a true financial survival constraint, which means that actual survival constraints are likely tighter than those measured by debt service ratios alone. Figure 15 presents this simplified FPM for selected developing and developed economies during Q1 2015 to Q2 2020. The horizontal and vertical

Figure 15. Evolution of the Private Sector’s Financial Position in Selected Economies, Q1 2015–Q2 2020 (Percentage points)



GDP = gross domestic product, Q = quarter.

Source: Authors’ calculations using Bank for International Settlements data at <https://www.bis.org/statistics/totcredit.htm> and <https://www.bis.org/statistics/dsr.htm> (accessed February 1, 2021).

axes are the year-on-year changes in private debt service ratio and credit to the nonfinancial sector as a percentage of GDP, respectively.

As shown in Figure 15, except for Indonesia, the sample of economies shifted further in the first quadrant of the FPM by Q2 2020. That is, both measures of financial fragility increased in the early stage of the pandemic. As compared to Q4 2019, significant jumps in both measures were observed in Japan, Malaysia, the ROK, Thailand, and the UK during Q1 and Q2 2020. Even for the US, financial positions remained in the northeast quadrant, with substantial increases in the private sector debt ratio, and continued increases in the debt service ratio even as these increases were declining. The latter appears to largely be due to temporary forbearances for student loans and credit card loans, and temporarily relaxed conditions for mortgage payment delinquencies. For all countries (again, except Indonesia), the rise in leverage is partly due to the policy responses of reducing interest rates and relaxing financial regulations to encourage private credit creation. The proxied FPMs in Figure 15 suggest that policy responses to COVID-19 accompanied *worsening* financial positions, rather than substantially improving them or even sustaining them at pre-COVID-19 rates of change. Finally, on the case of Indonesia, the improvement in financial positions here requires more information before drawing conclusions; while the proxies in the FPM improved, a fully specified financial survival constraint is necessary to draw conclusions.

VI. Conclusion

The analysis in this paper of private financial positions during the COVID-19 pandemic yields several conclusions:

- (i) At the most macro-level view, given by the SFBs, a clear pattern across economies emerged in the first half of 2020: large private sector surpluses generated by large government deficits. Countries' current account surpluses declined as global trade slowed, hence these surpluses stopped being a source of private sector surplus.
- (ii) Available information about the private sector indicates that most of the increase in the sector's balance came from a large increase in household balances.
- (iii) Whereas some have argued that households (in this case, in the US) were simply saving the increased government transfers rather than spending them, possibly in anticipation of higher taxes, the reality is that (a) households increased saving by far more than the rise in government transfers; (b) households increased saving

mostly by reducing purchases of services that were unavailable for purchase, and perhaps out of precautionary reasons due to potential income and/or job loss; and (c) nonfinancial firms' subsector balances fell despite rising with household balances in previous recessions.

- (iv) Private sector financial positions in terms of debt ratios and debt-service ratios worsened in early 2020, which is atypical for the private sector in recessions. Because these indicators are simple proxies for leverage and (particularly) a financial survival constraint, the private sector's financial positions may have worsened even more than shown in Figure 15.

Whether government policies and interventions were enough to protect the private sector's financial position during the pandemic is a continuing question. However, in several countries, large private sector surpluses were accompanied by significant increases in private debt and debt service ratios, which suggests that, in these cases, the government deficits driving the large increases in private sector financial positions may not have been large enough to return private financial positions to prepandemic levels. If there are continued lockdowns and new waves of infection still forthcoming, incomes and balance sheets of households and firms may continue to worsen as a result.

References

- Asian Development Bank (ADB). ADB COVID-19 Policy Database. <https://covid19policy.adb.org>.
- _____. 2019. "Policies to Support the Development of Indonesia's Manufacturing Sector during 2020–2024: A Joint ADB–BAPPENAS Report." Manila. <https://doi.org/10.22617/tcs199910-2>.
- Barbosa-Filho, Nelson H. 2018. "A Vertical Social Accounting Matrix of the U.S. Economy." *Journal of Post Keynesian Economics* 41 (4): 578–97. <https://doi.org/10.1080/01603477.2018.1486208>.
- Bureau of Economic Analysis. 2020. *Concepts and Methods of the United States National Income and Product Accounts*. Washington, DC: United States Department of Commerce.
- Coombs, Bertha. 2020. "Plunge in Health-Care Spending a Big Reason US Economy Sank in First Quarter." CNBC.com, April 29. <https://www.cnbc.com/2020/04/29/plunge-in-health-care-spending-a-big-reason-us-economy-sank-in-first-quarter.html>.
- Eurostat. 2021. <https://ec.europa.eu/eurostat/web/sector-accounts/data/database> (accessed February 1, 2021).

- Felipe, Jesus, and Scott Fullwiler. 2020. “ADB COVID-19 Policy Database: A Guide.” *Asian Development Review* 37 (2): 1–20.
- Parenteau, Rob. 2010. “On Fiscal Correctness and Animal Sacrifices.” <https://www.nakedcapitalism.com/2010/03/parenteau-on-fiscal-correctness-and-animal-sacrifices-leading-the-piigs-to-slaughter-part-1.html> (accessed February 1, 2021).
- Vandenbroucke, Guillaume. 2021. “Personal Saving during the COVID-19 Recession.” *Economic Synopses* 2021 (2). <https://doi.org/10.20955/es.2021.2>.

