Over the past two years, South Asia has seen rising external sector pressures due to elevated global commodity prices, monetary tightening by advanced economies, and shifting investor confidence. These movements have contributed to dwindling foreign reserves and currency depreciation pressures. Countries have made efforts to stabilize their exchange rates and preserve vital foreign reserves, including incentives for remittance inflows through official channels.

Many South Asian countries also tightened administrative controls on foreign exchange transactions in 2022. The policy measures included both exchange controls on the current account (e.g., import quantity and financing restrictions) and capital account controls (e.g., stricter approval process for outward flows). Table 1.3 in Chapter 1 and Table 1.3 of World Bank (2022) document the temporary exchange controls used in South Asian countries over the past year.

Even before the current crisis, many South Asian countries had long-standing capital control measures. These measures help countries stabilize the exchange rate by reducing sudden inflows and outflows of capital. As many South Asian countries have a fixed or managed exchange rate,¹ the capital control measures are also intended to help preserve the foreign exchange reserves needed to defend the exchange rate peg and manage exchange rate fluctuations. Table S.2 summarizes these long-term capital control measures in South Asian countries.

While the use of exchange and capital control measures help mitigate acute external sector pressures, such measures can also lead to the increased use of informal markets for

¹ For example, the Maldivian rufiyaa is pegged to the US dollar with a narrow band; both Nepal and Bhutan peg their currencies to the Indian rupee; prior to 2022, Bangladesh had a stabilized official exchange rate that was allowed to fluctuate within a 2 percent band of the US dollar during the reporting period.
foreign exchange. These informal exchange markets—including the Hundi and Hawala systems present in many developing countries (Khurram Sharif et al. 2023; Maimbo 2003; Mughal et al. 2023)—are prevalent across South Asian countries, partially because of the large remittance inflows in these countries. These informal exchange markets also operate relatively efficiently: they allow migrant workers to send and receive money instantly, and provide cross-border financial services for firms in the informal or shadow economy. The widespread use of these informal markets in turn makes exchange and capital controls less effective.

This spotlight outlines how informal foreign exchange markets operate, examines how exchange and capital controls contribute to their emergence, and discusses the macroeconomic implications.

S1. The operation of the informal foreign exchange market

The operation model of the informal foreign exchange market is illustrated in Figure S.1. A hypothetical official US dollar to rupee exchange rate of 1:10 is assumed for a hypothetical South Asian country.

Figure S.1. Operation model of Hundi/Hawala

Source: World Bank staff.
A natural informal foreign exchange market.

Before the implementation of any restrictions on foreign exchange use, it is not uncommon for small informal foreign exchange markets to exist to serve various purposes, including tax evasion and other illicit activities. For example, importers could evade the full impact of high tariffs in the hypothetical South Asian country by purchasing only a small portion of the required US dollars through commercial banks, obtaining the rest of the needed foreign exchange through informal agents, and invoicing lower imports equal to the amount of US dollars obtained from the banks. Although the importers often have to pay a more expensive rate purchasing US dollars in the informal market, they avoid paying the full import tariffs (Bangladesh Bank 2019; World Customs Organization 2018), but it comes at the cost of lost tax revenue for the government. There is an additional motive, namely that many, mostly small, importers do not have access to letters of credit in US dollars or banking services, and have to resort to the informal foreign exchange market (Rahimi 2020).

Exchange and capital controls create additional demand in the informal exchange market.

When an economy restricts foreign exchange use or the flow of capital, the policy measures can create shortages and uncertainty in the formal foreign exchange market, leading individuals and entities to use informal markets to purchase foreign exchange. This can happen in different ways, depending on the method of control. Importers may seek to evade quantitative controls on imports or restrictions on trade finance in the same way as described above for evading import tariffs: purchasing a portion of the foreign exchange from informal markets and falsifying commercial invoices to the customs authorities (e.g., misrepresentation of the classification and/or the value and volume of an international transaction of goods and services) to reflect only the imports purchased with foreign exchange obtained from the banks. In addition, in countries with controls on outward capital movements, firms investing abroad, together with students and outbound migrant workers traveling abroad may face difficulties obtaining enough US dollars through formal channels (Qorchi, Maibo, and Wilson 2003), while South Asians permanently relocated overseas may not be able to shift their assets abroad through legal channels. Through informal agents, they can purchase the needed US dollars, albeit at a more expensive rate. To complete the transaction, the informal agents instruct other agents in the network to set up funds in the destination country for clients, leaving no trace of cross-border activities in any formal financial system.

Thus, the restrictions in the formal exchange market create additional demand for US dollars in the informal exchange market, which allows the informal agents to charge a premium over the official exchange rate.
Where does the supply of foreign exchange in this informal market come from? The more attractive informal rates divert foreign exchange flows.

The supply side of the exchange rate market consists mostly of firms and individuals sending money into the South Asian country. Because of the higher rate charged on the demand side (for example 1:12), the informal agents can offer the suppliers of foreign exchange a more competitive rate (for example 1:11) than the official exchange rate. To complete the transaction, informal agents in the South Asian country provide the remittance in rupees to the families of migrant workers. This process does not require the remittance in US dollars to move across borders, nor does it trigger any changes in asset or liability positions of the formal banking system in either country. These two agents will then have the settlement process in a third country (Qorchi, Maibo, and Wilson 2003).

Could supply-side measures help close the parallel exchange rate gap and boost official remittance?

To encourage remittance inflows through formal channels, governments have implemented fiscal incentives, such as reducing remittance fees, increasing interest rates on savings from abroad, and promoting digital technologies. At the same time, some (for example, Habib 2023) suggest that official exchange rate depreciation can help boost formal remittance inflows by making the official rate more attractive to migrant workers. These measures may help temporarily in attracting remittance inflows through the formal channel. But as long as authorities cannot supply sufficient foreign exchange at the official rates due to restrictions, additional demand for foreign exchange that cannot be met in the formal market will shift to the informal market. This demand will continue to allow informal agents to offer a premium to the remitters above the official exchange rate. As a result, the gap between the official and informal rates will persist. For example, Figure S.2 shows the spread between official and informal exchange rates continues to exist in Bangladesh (left panel) and Pakistan (right panel), even after their currencies have depreciated. This parallel exchange market in turn diverts remittances to the informal channel (Adhikari and Katuwal 2015; Central Bank of Sri Lanka 2021).

In addition to remittances in the example, the supply of foreign exchange in the informal market can also come through the under-invoicing of exports and over-invoicing of imports (Agénor 1990; Biswas 2012; Biswas, Marjit, and Sarkar 2019).

Attractive rates may not be the only reason that migrants choose informal channels. The ability for migrants’ family to access formal banking services in the home country, transactional costs in the formal channel, informal credits available to the migrant’s family associated with remittance, and long-term client relationship are all important factors. For example, upon emergency, migrants may sometimes borrow from Hundi/Hawala agents to remit to their family.
S2. Suggestive evidence

This section presents evidence on the relationship between: (i) exchange and capital controls; and (ii) the demand and supply sides of the informal foreign exchange market. It provides evidence for two related hypotheses: first, facing exchange and capital controls, individuals use informal foreign exchange markets to circumvent restrictions, leading to a widening gap between official and informal exchange rates; and, second, the widening gap leads to a diversion of foreign exchange supply from the formal to the informal exchange market.

1. Facing exchange and capital controls, individuals use informal foreign exchange markets to circumvent restrictions, leading to a widening gap between official and informal exchange rates.

There are multiple ways to implement exchange and capital controls. We focus on the restrictions related to import finance, and proxy for it using a de jure measure of restrictions on commercial credit inflows from the IMF’s Annual Report on Exchange Arrangements and

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4 See Table S.2 for the long-term exchange and capital control measures in South Asia. Table 1.3 in Chapter 1 and Table 1.3 of World Bank (2022) document the temporary exchange controls used in South Asian countries over the past year.
Exchange Restrictions (Fernández et al. 2016). There are also multiple forms of capital control evasion. Firms may move foreign exchange abroad through trade mis-invoicing (Biswas 2012; Patnaik, Gupta, and Shah 2011; Steinkamp and Westermann 2022). Individuals may purchase foreign exchange from informal agents for international travel, education, international service, and real estate investment, among other activities. For this analysis, we focus on capital control evasion by firms when they use import mis-invoicing to circumvent import quantitative and financing restrictions.

Import mis-invoicing is computed as

$$\text{Import Mis-invoicing}_{i,t} = \left( \frac{\text{MR}_{i,t} - \text{MM}_{i,t} \left( 1 + \text{CIF} \right)}{\text{MR}_{i,t}} \right)$$

where $\text{MR}_{i,t}$ is economy i’s reported import from the world in period t. $\text{MM}_{i,t}$ is world exports to economy i in period t. CIF represents cost, insurance, and freight, which is assumed at 10 percent following the existing methodology (IMF 1993). A negative value indicates import under-invoicing and a positive value indicates import over-invoicing by country i.

There are a few caveats to the import mis-invoicing measure. First, the method used to calculate import mis-invoicing assumes that the manipulation of documents only happens at the import end. If both exporters and importers manipulate invoices, then the mis-invoicing cannot be detected by comparing reported imports and exports data. For example, OECD (Lanz and Miroudot 2011) estimates that about one-third of global trade is intra-firm trade among subsidiaries. Related importers and exporters may agree to record the same (manipulated) values on import and export invoices. Second, import mis-invoicing for services trade is not captured by our data. Third, import mis-invoicing captured using the method may simply reflect limited customs capacity instead of manipulated import values to evade capital controls. Last, the simplified estimation of CIF overlooks the cross-country and over-time variations in costs. Table S.1 summarizes the various purposes of import mis-invoicing. It is also worth noting that we do not attempt to use this proxy to accurately estimate the level of import mis-invoicing. Instead, it is only used to capture the changes in import mis-invoicing behavior in relation to the changes in exchange and capital control measures.

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5 The restrictions on commercial credit inflows usually refer to the restrictions on import finance provided by nonresident institutions to domestic importers, which capture a part of import finance restrictions.

6 Some have used the net errors and omissions (NEO) in country’s balance of payments as a proxy for informal remittance. But because the NEO is affected by changes in both informal remittances and informal trade flows, informal activities on both remittances and trade flows can make the NEO a noisy indicator for informal remittance. In a separate empirical analysis, we find no correlation between NEO and official remittance inflows in South Asian countries.

7 Due to the limitation of resources and the need for trade facilitation, customs officials may not inspect every shipment. Customs officials may not have up-to-date information on world market prices to help them determine whether the invoiced value is within the normal range (Baker et al. 2014).
A panel regression of 35 countries is conducted to establish the relationship between restrictions on import finance and import mis-invoicing. Figure S.3.A shows that the panel regression coefficient is negative and statistically significant, and is robust to controlling for macroeconomic variables, and year and country fixed effects. This suggests that, in countries and during periods with tighter controls on import finance, there is a stronger tendency for firms to under-invoice imports.\(^{8}\)

### Table S.1. Common purposes of import mis-invoicing

<table>
<thead>
<tr>
<th>Import under-invoice</th>
<th>Import over-invoice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoid regulatory requirements for imports over a certain value</td>
<td>Evade capital controls or shift money into a hard currency</td>
</tr>
<tr>
<td>Avoid import restrictions and high tariffs</td>
<td>Avoid anti-dumping duties</td>
</tr>
</tbody>
</table>

Source: Muryawan (2019); Slany, Chérel-Robson, and Picard (2020).

A panel regression of 35 countries is conducted to establish the relationship between restrictions on import finance and import mis-invoicing. Figure S.3.A shows that the panel regression coefficient is negative and statistically significant, and is robust to controlling for macroeconomic variables, and year and country fixed effects. This suggests that, in countries and during periods with tighter controls on import finance, there is a stronger tendency for firms to under-invoice imports.\(^{8}\)

### Figure S.3. Import finance restrictions and import mis-invoicing

**A. Effects of restrictions on import finance on import mis-invoicing in the world panel**

**B. The relationship between import mis-invoicing and the informal exchange rate gap in Bangladesh**

Source: A. IMF Direction of Trade Statistics Database, Fernández et al. (2016), World Bank World Development Indicators, and World Bank staff calculations. B. IMF Direction of Trade Statistics Database, Bangladesh Country Office, and World Bank staff calculations. Note: A. A lag is used on monthly imports to account for the lag between placing an order and goods entering the border. *** p<0.01. B. Line is a linear fit that is significant at the 5 percent level. Each circle shows the exchange rate gap for the month and the monthly (3-month lagged) share of import mis-invoicing between Bangladesh and the rest of the world.

\(^{8}\) In addition to import under-invoicing, capital controls may also lead to capital flight through import over-invoicing (Patnaik, Gupta, and Shah 2010; Steinkamp and Westermann 2021; World Customs Organization 2018), which can confound the relationship between capital control and import under-invoicing. But the statistically significant and negative finding between import finance control and import mis-invoicing indicates that despite the potential confounding effect, stronger import finance control is still associated with more import under-invoicing.
This increase in under-invoicing may lead to a parallel foreign exchange market. A simple regression analysis is used to investigate the relationship between the import mis-invoicing and the widening gap between official and informal foreign exchange rates in Bangladesh during 2000–2022. As Section 1.3 shows, the informal rate gap in Bangladesh fluctuated between 0 and 2 percent of the interbank rate before 2022, before an artificially strong official exchange rate and tougher exchange controls used to enforce the official exchange rate led to a rapid widening of the informal rate gap. The results from the regression show a statistically significant negative correlation (Figure S.3.B), suggesting an increasing import under-invoicing is associated with a widening informal exchange rate gap.

In Pakistan, the relationship between import mis-invoicing and the exchange rate gap is less clear-cut. This could be because Pakistan has more capital flows than Bangladesh, which allowed stronger capital flight through import over-invoicing when exchange and capital controls tightened. This stronger import over-invoicing would confound the relationship between capital control and import under-invoicing, and make import mis-invoicing noisier.

2. The widening gap between official and informal exchange rates can divert the supply of foreign exchange into the informal market.

Facing exchange and capital controls, individuals use informal foreign exchange markets to circumvent restrictions. The rising demand helps sustain a gap between official and informal exchange rates. It allows the informal agents to offer attractive rates to potential suppliers of foreign exchanges, which diverts the supply of foreign exchanges to the informal market. To study the diversion of foreign exchange supply, we first look at the changes in official remittance inflows. Remittance inflows are a crucial source of foreign reserves for many South Asian countries, but flows of remittance through informal channels can put downward pressure on the country’s foreign reserve level (see also Section 1.3).

To investigate the relationship between the exchange rate gap and official remittance inflows, we conduct a fixed effects regression on the monthly official remittances into Bangladesh between February 2011 and November 2022. The results show that the gap between the official and informal exchange rates has a statistically significant negative correlation with the official remittance inflows (Figure S.4). This is consistent with the hypothesis that a larger rate gap incentivizes remitters to use informal channels and thus diverts foreign exchange supply away from the formal channel. There is no statistically significant relationship between the official (inter-bank) exchange rate and remittance inflow, which suggests that depreciation of the official exchange rate may not have a positive effect on remittance if the informal rate gap does not change.

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9 To account for the government incentives for remittances through the formal channel, a 2-percent incentive starting July 2019 and a 2.5-percent incentive from January 2022 were included for the official foreign exchange channel.
Besides remittances, export proceeds are another major source of foreign exchange reserves for many countries. Stricter exchange and capital controls can lead to a widening informal rate gap, which in turn diverts the repatriation of export proceeds to the informal exchange market. We perform an event study to examine the relationship between import restrictions and weekly export proceeds in Pakistan. In May 2022, Pakistan announced import credit restrictions. The restrictions were rolled back in early January 2023, but the rationing of letters of credit continued to create unofficial import restrictions (Table 1.3). As Figure S.5.A shows, export proceeds coming into Pakistan (shown as deviations from the average of January–May 2022) fell dramatically after the implementation of the import credit restrictions, especially as the informal rate gap increased. During this period, the deviation in export proceeds was negative and statistically significant at the 1 percent level.

This relationship is not likely driven by seasonality. In fact, export proceeds in 2022 outperformed levels during the same period in 2021 for most months before July, but the 2022 proceeds consistently fell below the 2021 levels after the exchange rate gap started widening in July 2022 (Figure S.5.B).

A caveat for interpreting this result is that export proceeds may fall for other reasons. For example, when the local currency is expected to depreciate, exporters may park proceeds overseas and remit back after the depreciation to capture additional profits in the local currency. But, in this case, the deviation in export proceeds was even larger in January 2023 after the Pakistani rupee had already depreciated against the US dollar.\(^\text{10}\) This suggests that delayed repatriation was likely not the reason for the export proceeds shortfall. Pakistan also experienced falling imports starting the second half of 2022, which might affect export performance.

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\(^{10}\) During the weeks of January 29 and February 5 when the Pakistani rupee depreciated against the US dollar by about 20 percent compared with May 2022, the export proceeds were US$489 million and US$508 million, respectively, which were still lower than the average level of weekly export proceeds of US$538 million during the event window.
and reduce export proceeds. However, while exports declined by 20 percent from April 2022 to January 2023, export proceeds had a sharper drop of around 30 percent over the same period. This indicates that the decline in export proceeds may have been larger than can be explained by the impact of lower imports on export performance, suggesting the diversion of export proceeds to the informal exchange market could have played a role.

S3. Macroeconomic implications and conclusion

The combination of limits on the supply of foreign exchange in the formal market and the operation of the informal market can have profound macroeconomic implications, including (but not limited to) the following:

- Competitiveness: Exchange controls such as US dollar rationing often involve priorities given to certain sectors or firms. Firms on the priority list would have access to
foreign exchange through the formal channel and at cheaper rates, while firms not on the list would have to resort to purchasing foreign currency from the informal market at more expensive rates. In the short term, this can distort the level playing field between sectors or firms. Over time, this can lead to the misallocation of resources and undermine the overall competitiveness of the economy.

- Perpetuation of informal trade: Historically, South Asia already had elevated levels of informal trade, which accounted for about 50 percent of its formal trade during 1993–2005 (Taneja 2014). Tighter controls on foreign exchange will push more traders into the informal sector or shadow economy. This can in turn lead to a loss of fiscal revenue.

- Foreign reserve accumulation: As the informal exchange market in South Asia diverts remittances and export proceeds away from official channels, countries’ foreign exchange reserves are negatively impacted. As a result, countries have fewer resources to pay import bills, service external debt, and conduct market operations to prevent drastic currency depreciation.

The available evidence suggests that the implementation of exchange and capital controls, while intended to limit the outflows of foreign exchange, may have the unintended consequence of discouraging inflows. This can happen when such measures shift the demand for foreign exchange to the informal exchange market. The additional demand for foreign exchange allows the informal exchange market to charge a premium to parties buying foreign exchange and offer attractive rates to potential suppliers of foreign exchange, which gives rise to an exchange rate gap between the official and informal exchange rates. The rate gap in turn diverts the foreign exchange inflows away from the formal channel. As a result, the informal exchange channel undermines the goal of capital control measures to preserve foreign exchange.

Despite the downside, capital controls can be useful for countries with a fixed or administered exchange rate to regulate capital flows, especially when domestic capital markets and regulations are under-developed (IMF 2012; 2022a). A more transparent and less arbitrary approval process for firms and individuals to use foreign exchange, along with policies to improve export competitiveness, can help to build up foreign reserve buffers. At the same time, it is important for countries to relax capital controls gradually. Lessons from the Asian financial crisis have shown that a sound domestic financial system should be in place before a full liberalization (World Bank 2022). For smaller economies with very restrictive capital control measures, such as Bhutan and Nepal, allowing firms to set up trade offices overseas might be the first step (Kathuria, Yatawara, and Zhu 2021).

For example, until the early 1990s, India had a system of very strong capital controls. During 1990s, significant trade policy reforms led to an increased inflow of cheaper imports, which compelled Indian firms to become more competitive in the global market through using outward FDI (OFDI) to acquire foreign technology/brand names, securing inputs or supporting overseas trade activities. To accommodate firms’ evolution, capital control measures were relaxed by gradually expanding the automatic approval route and increasing the limit of OFDI (Kathuria, Yatawara, and Zhu 2021). The foreign reserve import cover increased from 0.5 month in December 1990 to 10 months in January 2023.
### Table S.2. Selected long-term capital controls and other foreign exchange restrictions

<table>
<thead>
<tr>
<th>Country</th>
<th>Trade-related measures</th>
<th>Capital control measures</th>
<th>Invisible current account measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>Advance payments of more than US$10,000 for imports require a repayment guarantee.</td>
<td>All outward direct investments require approval. Repatriation of dividends required. Investor required to directly deal with central bank. Residents purchase of capital market securities, money markets instruments, derivatives abroad are not allowed.</td>
<td>Limit for private travel is US$12,000 per year, US$10,000 for medical expenses.</td>
</tr>
<tr>
<td>Bhutan</td>
<td>Import license is require for importation of capital and intermediate goods from countries other than India</td>
<td>Outward direct investment not allowed unless approved by Ministry of Finance or Royal Monetary Authority. Investor required to directly deal with central bank. Purchase abroad by residents of all transactions in capital and money market instruments are subject to controls.</td>
<td>Travel allowances to countries other than India are limited to the equivalent of US$3,000 a passenger per year.</td>
</tr>
<tr>
<td>India</td>
<td>Advance payments allow unlimited advance remittance. However, importers must provide a standby letter of credit or bank guarantee if the amount is over US$200,000 for goods imports, or if the amount is over US$500,000 for services imports.</td>
<td>Most outward direct investment can go through automatic routes; Resident individuals may remit abroad up to the equivalent of US$250,000 a financial year; SEBI-registered venture capital and alternative investment funds may invest in equity and other instruments up to US$750 million. Repatriation of dividends required. Destination-specific procedures exist.</td>
<td>An overall limit of US$125,000 a financial year for individuals for permitted current and capital account transactions; outward remittance allowed provided all current taxes and other liabilities have been cleared.</td>
</tr>
<tr>
<td>Maldives</td>
<td>--</td>
<td>Lack of explicit legislation on outward direct investment. Directly dealing with central bank needed.</td>
<td>--</td>
</tr>
<tr>
<td>Nepal</td>
<td>2% for industrial materials and 10% for commercial goods in customs account.</td>
<td>Citizens may not make any type of investment in foreign countries; Outward flow of capital is restricted. Purchase of market securities bonds, other debt instruments, money market instruments, etc., are prohibited. Directly dealing with central bank needed.</td>
<td>Travel allowance is US$1,500 per person. Approval required for foreign investment profit repatriation.</td>
</tr>
<tr>
<td>Pakistan</td>
<td>100 percent cash margin requirement on import of items under 423 HS codes and advance payment of up to US$10,000 of invoice or 100 percent of the value of a letter of credit depending on the purpose.</td>
<td>Directly dealing with central bank needed. Repatriation of dividends required.</td>
<td>--</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>--</td>
<td>Automatic approval route exists for outward direct investment. Investors apply through authorized dealers. Repatriation of dividends required.</td>
<td>--</td>
</tr>
</tbody>
</table>

Reference


