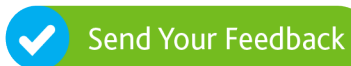


## ISSUER IN-DEPTH

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## Government of Costa Rica

### FAQ on the sovereign credit implications of recent cyberattacks

In early April, after a presidential election, the government of [Costa Rica](#) (B2 stable) suffered a cyberattack by the Conti ransomware group. The attack significantly affected key government agencies, disabling access to digital government services and operations. In addition, the government suffered another cyberattack in May by the HIVE ransomware group, which severely affected the country's publically run healthcare system. In this report, we assess the impact of these events and the government's response, drawing conclusions about the potential implications for Costa Rica's credit profile.

- » **How did the cyberattacks affect Costa Rica's fiscal accounts?** The government temporarily lost its ability to digitally collect and verify tax payments from both individuals and businesses, digitally process import duties and forms, and track general revenues and expenditures. We expect the fiscal deficit to remain close to our forecast of 4.8% of GDP, with risks to the downside. By year-end 2022, the debt burden will hover around 68% of GDP, and debt affordability (interest payments as a percentage of government revenues) will be around 31%.
- » **What economic sectors were most affected?** The cyberattacks disrupted international trade and healthcare, which together make up approximately 24% of Costa Rica's economic activity. International trade companies were unable to use digital customs payment and processing services, while the healthcare sector has been unable to provide access to and process key patient data. We expect economic costs to be relatively small and maintain our real GDP growth forecast of 4.0% for 2022.
- » **Has political risk increased as a result of the cyberattacks?** The cyberattacks occurred shortly after the presidential elections, leading us to think that the ransomware attackers were trying to exploit a transitional government period to maximize the benefit they would derive from it. Even in the face of major disruptions in tax payment services and some transfer payments, social unrest did not materialize. Political conditions remain stable with near-term risks related mostly to the impact of higher inflation on living standards.
- » **Does the government's handling of the attacks provide insights into its institutions and governance strength?** The attacks were a major test of Costa Rica's cybersecurity systems and the institutional capacity to manage an event risk of this nature. Even though the government was unable to prevent the attacks, it adopted ad-hoc solutions that appear to have been effective in confronting the problems that emerged from the cyberattacks.

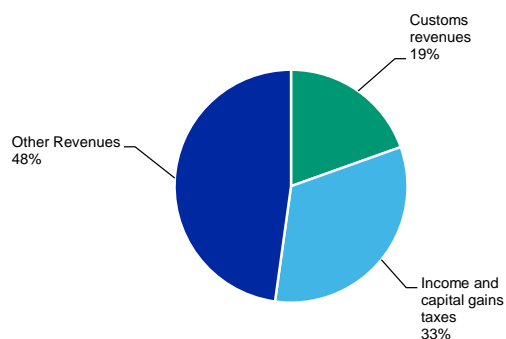
## How did the cyberattacks affect Costa Rica's fiscal accounts ?

In April 2022, a cyberattack disabled key digital government services offered by the Ministry of Finance, and a subsequent cyberattack severely affected the Ministry of Social Security. As a result, the government temporarily lost its ability to digitally collect and verify tax payments from both individuals and businesses, digitally process import duties and forms, and effectively track general revenues and expenditures. In addition, the attacks created difficulties in sending out transfer payments to individuals and wages to government employees.

The initial attack affected income taxes and customs duties, the government's two largest revenue streams, with income and capital gains taxes comprising 33% of government revenue in 2021 (5.2% of GDP) and customs fees 19% of total revenue (3.1% of GDP) (see Exhibit 1). Overall, government revenues represent around 15% of GDP, an amount that may fall slightly due to collection issues stemming from approximately two months of manual revenue collection. The subsequent attack on the Ministry of Social Security affected pension fund collections, payments and wages of some government workers. The cyberattacks introduce downside risks to our 4.8% of GDP fiscal deficit forecast for 2022 as lower revenue collection could potentially result in a larger fiscal imbalance (see Exhibit 2).

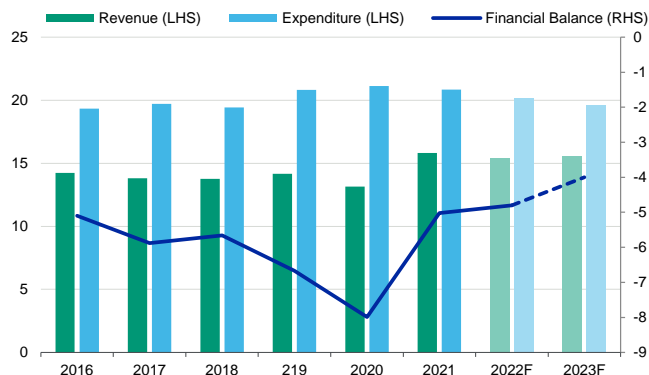
Several government ministries have had to remake their digital infrastructure with international technical assistance from the [US](#) (Aaa stable), [Spain](#) (Baa1 stable) and [Israel](#) (A1 positive). The introduction of an alternative digital payment system on 13 June is alleviating collection challenges. Taxes that were originally due in March, April or May were to be paid by the end of June or July, depending on the type of tax.

Exhibit 1  
The cyberattacks affected key revenue streams for the Costa Rican government  
Affected government revenue streams, 2021 % of total income



Sources: Ministry of Finance and Moody's Investors Service

Exhibit 2  
We expect the government's fiscal profile to improve moderately this year  
Government financial balance breakdown, % of GDP



Source: Moody's Investors Service

Between late April and mid-June, the government was unable to digitally collect taxes, but taxpayers were directed to make payments through their local banks. Initial reports indicate that the government was able to collect payments and also to issue domestic debt.

At present, the government has a stronger liquidity position than in late 2018, when it had to turn to Costa Rica's central bank for an emergency short-term loan amid a lack of sufficient domestic funding. Moreover, with the support of the IMF and other multilateral institutions, the government was able to mitigate fiscal risks that arose from short-term disruptions in tax collections. On 25 March 2022, following the completion of the first and second reviews of Costa Rica's IMF program<sup>1</sup>, the government had access to \$284 million in financing, which helped buttress its liquidity position.

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## What economic sectors were most affected?

The cyberattacks disrupted key economic sectors such as international trade and healthcare, which together make up approximately 24% of economic activity (see Exhibit 3). International trade companies were unable to use digital customs payment and processing services, while the healthcare sector has been unable to provide access to and process key patient data.

The original Conti cyberattack compromised the government's Tecnología de Información para el Control Aduanero (TICA), a digital service that allowed private businesses to manage their customs procedures online. The authorities subsequently introduced manual procedures to process customs documents, but local news media reports suggest businesses involved in international trade are facing daily losses of around \$38 million due to the disruptions. The government's decision to prioritize exports affected importers: nonperishable goods were stuck 20-25 days in the ports due to clearing issues, and a shortage of containers approved for transport will cause bottlenecks well into the summer months.

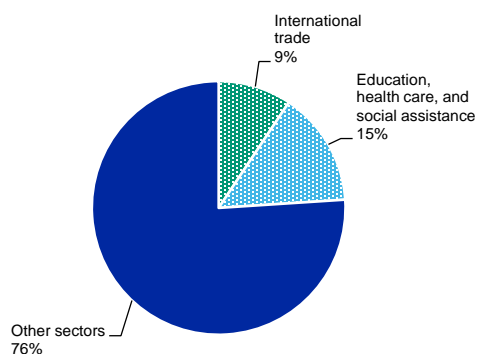
A subsequent cyberattack by the HIVE ransomware group, which may have connections to Conti, also affected the country's healthcare sector, disabling access to the government's EDUS patient information database. Without access to the database, hospitals had to cancel or reschedule appointments, at one point 7% of all appointments were affected. In addition, doctors have been unable to access patient records and hospitals have had to revert to more costly and slower manual methods and paper storage systems.

The additional cyberattack highlights the risk of further disruption. Moreover, these disruptions, along with the those mentioned beforehand, could become a headwind to the country's economic recovery – we currently forecast growth of 4.0% in 2022 (see Exhibit 4). The government has yet to provide a timeline on when TICA – or access to the EDUS system – will be restored, further complicating our assessment of the impact cyberattacks could have on economic growth.

Exhibit 3

### Cyberattacks have disrupted two key sectors of the economy

Affected sectors as a percentage of total economic activity, 2021

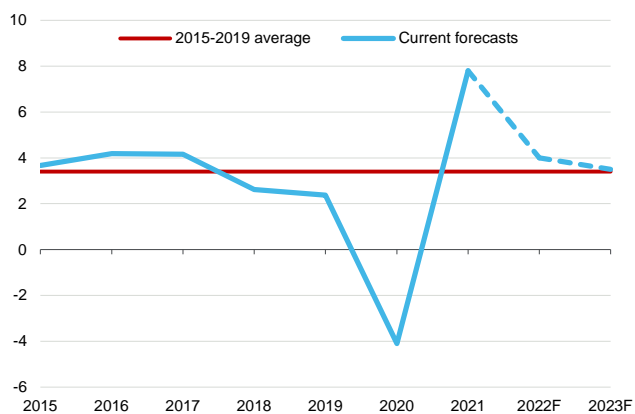


Sources: Central Bank of Costa Rica and Moody's Investors Service

Exhibit 4

### We still expect growth to revert to pre-pandemic rates

Real GDP growth, annual change %



Sources: Central Bank of Costa Rica and Moody's Investors Service

## Has political risk increased as a result of the cyberattacks?

The initial cyberattack happened shortly after second-round elections held on 3 April 2022, when presidential candidate Rodrigo Chaves won a close election with 53% of the votes. By 18 April, the computer systems of the Ministry of Finance were completely locked. On 8 May, President Chaves declared a state of national emergency in his inaugural speech as a result of the attack.

According to the government, the attacks severely compromised 27 government agencies, disrupting operations in the Ministry of Finance and the social security agency, which is in charge of managing the public pension fund and administering the state run healthcare system.

The cyberattackers known as the Conti ransomware group initially requested \$10 million from the government to unlock the encrypted government systems and stop the public dissemination of stolen files. After it became clear that the government was unwilling to pay,

the group raised the ransom to \$20 million and tried to create social disruptions urging the public to “overthrow the government.” In addition, news reports suggest that some individuals have not received their wages as a result of the attacks.

However, social risks failed to materialize. In the face of the disruptions caused by the cyberattack, the population rallied around the government instead of asking the authorities to give into the cyberattackers' demands, an outcome consistent with our assessment of Costa Rica's low political risk.

### Does the government's handling of the attacks provide insights into its institutions and governance strength?

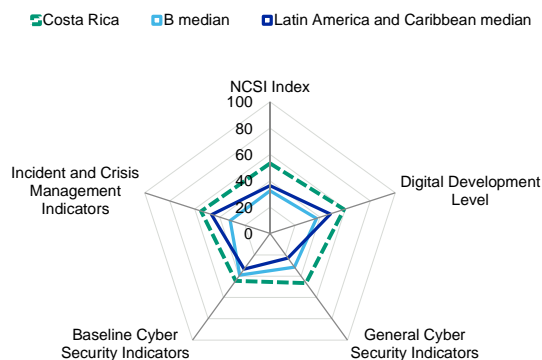
The attacks presented a unique stress test to the government's cybersecurity systems and its institutional capacity to respond to event risk. Although the government was unable to prevent the attacks, it was able to devise ad-hoc solutions to address a challenge the country had not confronted before – government officials has stated that 27 government institutions were affected.

The government has spent the past two months trying to fix the problems created by the cyberattacks on a ministry-by-ministry basis. On 13 June, the Ministry of Finance released a new digital tax payment portal and an updated tax collection schedule. The finance ministry had to completely reset its IT infrastructure, cleaning over 3,000 computers and resetting backups to ensure that the ransomware had been completely removed. Still, there is no timeline as to when some government digital services will be reestablished with TICA and the connection to EDUS remains offline, highlighting the difficulties in recreating an entire suite of digital services.

The government's ability to continue to operate even without key digital services is aligned with our “ba2” assessment of institutions and governance strength, showing that the sovereign has been somewhat resilient to the cyberattacks. That said, the country still faces difficulties navigating an environment in which some digital government services have not been fully restored.

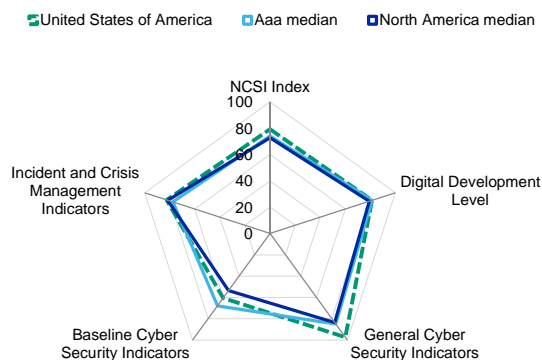
When looking at cybersecurity indicators, Costa Rica performs favorably compared to peers. While comprehensive cybersecurity indicators are limited in scope, Costa Rica scores well in cybersecurity when compared to Latin America and Caribbean peers, and relative to the B-rated median (see Exhibit 5), but much lower than countries with advanced cybersecurity capabilities like the US (see Exhibit 6).

Exhibit 5  
**Costa Rica's cybersecurity indicators score better than regional and rating peers...**  
 National cyber security index and subcomponents, latest



Sources: National cyber security index and Moody's Investors Service

Exhibit 6  
**...but still lower than sovereigns with a more comprehensive cyber policy such as the US**  
 National cyber security index and subcomponents, latest



Sources: National cyber security index and Moody's Investors Service

We expect that following this cyber event, ransomware groups may increasingly target cyberattacks on the digital government services of smaller sovereigns after seeing how crippling these attacks can be to the economies and governments of relatively smaller countries like Costa Rica.

## Moody's related publications

- » [Government of Costa Rica – B2 stable: Regular update](#), 9 June 2022
- » [Government of Costa Rica: Cyberattack disabling key government services is credit negative](#), 18 May 2022
- » [Cyber Risk – Global : Cyber risk survey of issuers finds growing investments, but gaps in preparedness](#), 31 March 2022
- » [Cyber Risk – Global: Broad sanctions against Russia raise risks of financially motivated cyberattacks](#), 11 March 2022
- » [Global – Cyber Risk: Russia-Ukraine tensions increase cyber risks across regions, asset classes](#), 18 February 2022
- » [Government of Costa Rica: Approval of IMF agreement gives Costa Rica financing and institutional support for difficult fiscal consolidation agenda](#), 27 July 2021
- » [Sovereigns – Global: Cyber risk survey indicates sovereigns define and rank risks differently, but preparedness is common priority](#), June 2021
- » [Government of Costa Rica – B2 stable: Annual credit analysis](#), 3 February 2022
- » [Sovereign Ratings Methodology](#), 25 November 2019

## Endnotes

- 1 In July 2021, [Costa Rica's congress approved an IMF program under the Extended Fund Facility](#) (EFF) that is providing financing and institutional support as the government seeks to consolidate its fiscal accounts. Under the program, Costa Rica will receive approximately \$1.8 billion in concessional financing. The government will receive this financing in six installments, pending successful completion of program reviews. So far, \$569 million (0.8% of GDP) has been disbursed. The program will run through July 2024 following a six-month program extension agreed to in March 2022.

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