DEMYSTIFYING SECURITIZATION FOR SOLAR PAY-AS-YOU-GO COMPANIES

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ABBREVIATIONS AND GLOSSARY

AFC	Africa Frontier Capital
AFDB	African Development Bank
DFC	United States Development Finance Corporation
DFI	development-finance institutions
EDF	*Électricité de France*
EUR	euro
FX	foreign exchange
KES	Kenyan shilling
OBS	off-balance-sheet
PAYGO	pay-as-you-go
SPV	special-purpose vehicle
SSA	sub-Saharan Africa

GLOSSARY

ADVANCE RATE	The percentage of an asset's value that a lender is willing to lend in a financing arrangement, often used to calculate the maximum loan amount based on the collateral value.
BACK-UP SERVICING	A contingency plan in which a secondary servicer is appointed to take over the servicing responsibilities of a primary servicer in the event of default, insolvency, or inability to perform its duties, ensuring the uninterrupted administration of the underlying assets.
DISCOUNT RATE	The rate used to determine the present value of future cash flows in discounted-cash-flow analysis, reflecting the time-value of money and the perceived risk of the investment.
ENHANCEMENT RATE	The degree to which the credit quality of an underlying asset or security is improved, often through credit-enhancement techniques in securitization or OBS financing. Credit enhancement refers to methods used to reduce the credit risk of an asset, such as overcollateralization, credit insurance, or subordination, thereby increasing its credit rating and making it more attractive to investors.
EQUITY BALANCE	The residual interest or ownership in an asset or company after accounting for all outstanding debt and liabilities.
FOREIGN-EXCHANGE HEDGING	The practice of using financial instruments, such as currency forwards or options, to manage or reduce the risk associated with currency fluctuations in international transactions or investments.
OFF-BALANCE-SHEET FINANCE	A form of financing that does not appear as a liability on the company's balance sheet, often used to keep debt levels low and maintain financial ratios that are appealing to investors.
SECURITIZATION	The process of pooling contractual debt, such as residential mortgages or consumer loans, and selling their related cash flows to third-party investors as securities, which may be in the form of bonds or other instruments.
SPECIAL-PURPOSE VEHICLE	A legal entity created to fulfill a specific or temporary objective, often used in securitization to isolate financial risk from the parent company and hold the underlying assets backing the securities.

EXECUTIVE SUMMARY

This paper aims to demystify off-balance-sheet (OBS) securitization for pay-as-you-go (PAYGO) companies working in sub-Saharan Africa (SSA). Its approach is to pose and answer questions that PAYGO companies would have in mind as they consider embarking on securitization. Investors stand to benefit from this paper as much as off-grid companies. It outlines the factors that PAYGO companies evaluate as they consider OBS financing, and informs investors how they can become more involved in OBS securitization. With this paper, we encourage off-grid companies to see how OBS facilities can help them grow and expand energy access in Africa. For sharing their experience in OBS financing, we thank Africa Frontier Capital, BBOXX Group, the Development Finance Corporation (DFC), D.light, NeoT Capital, and PaygOps.

Section 1 of this paper goes on to discuss why PAYGO business models are important for energy access. In 2022, more than 2.5 million households gained access to lighting through PAYGO solar energy. PAYGO business models enable lease-to-own payment plans and flexible instalments, which open a path for low-income households to enjoy cleaner, more reliable energy.

Section 2 explains why OBS financing is relevant to PAYGO companies. It covers the opportunity for OBS financing in SSA—estimated at $150 million to $375 million annually—and a brief history of OBS financing in SSA. The section also looks at the benefits of OBS financing for solar PAYGO companies, such as better cash flow, new funding opportunities, lower financing costs, and reduced foreign-exchange (FX) risk.

Section 3 reviews the entities that are usually involved in securitization—such as the originator, sponsor, and investor—and explains their roles in securitization.

Section 4 explores the key attributes of a securitizable asset and OBS financing considerations. These considerations comprise the regulatory environment, the age of the company, data requirements, durations, costs, and contingency plans.

Section 5 is an overview of the securitization process, including timelines, key steps, and responsibilities. Securitization usually takes four to eight months and costs $250,000 to $1 million.

Section 6 looks at contractual agreements that result from the securitization process (e.g., financing agreements) and what the agreements mean.

Section 7 lists the attributes of a term sheet, which sets out the agreement between the special-purpose vehicle (SPV) and the originator.

Section 8 offers a simple SPV Excel model to help companies understand what effect selling a pool of receivables to an SPV will have on their cash flow. It also discusses two additional tools, one to help the PAYGO company estimate the advance rate, and another to determine if securitization makes financial sense.

Section 9 lists entities with experience in OBS securitization which a PAYGO company can consult.

The paper **concludes** with suggestions to expand OBS financing in SSA.

SECTION I

Why is the PAYGO business model important for solar-energy companies?

A PAYGO business lowers the initial cost of acquiring a product by selling it to customers through credit, installments, or lease-to-own contracts. Customers pay a deposit at purchase (usually approximately 10 percent of the purchase price). Thereafter, they pay fixed instalments over a defined period (usually up to two years for the least expensive kits). About 40 percent of solar-energy kits in SSA are sold on a PAYGO basis. In 2022, households in the region bought more than 2.5 million solar-energy kits, representing $500 million in sales.[1] The World Bank estimates[2] that the PAYGO model will be critical to enable energy access for an additional 200 million people in the region.[3]

Despite being a critical enabler of energy access in SSA, PAYGO businesses face challenges. According to PAYGO companies and investors, one such challenge is low payment-collection rates, often well below ideal levels of 80 percent. A shortfall in payments reduces actual proceeds from sales, cash flow, and profitability. The second challenge is the high cost of capital, with interest rates close to 20 percent and funding available only in hard currency. Both issues can prevent businesses from securing equity capital.

[1] Power for All, "Fact Sheet: Off-grid PayGo: Unlocking Affordable Energy Access and Financial Inclusion in SSA," Power for All, April 2022, accessed May 9, 2023, https://www.powerforall.org/application/files/6316/4986/8168/Fact_Sheet_Off-grid_PayGo_Unlocking_Affordable_Energy_Access_and_Financial_Inclusion_in_SSA.pdf The $2.5 million and $500 million in credit sales are conservative estimates because the data is from only GOGLA-affiliated companies.

[2] International Finance Corporation, "Off-grid Solar Market Trends Report 2020: Report Summary," IFC, 2020, accessed May 9, 2023, https://africa-energy-portal.org/sites/default/files/2020-02/14005VIV_OFF-GRID-SOLAR-REPORT-V13-Exec-Sum-AW4vis.pdf

[3] Power for All, "Fact Sheet: Off-grid PayGo: Unlocking Affordable Energy Access and Financial Inclusion in SSA," Power for All, April 2022, accessed May 9, 2023, https://www.powerforall.org/application/files/6316/4986/8168/Fact_Sheet_Off-grid_PayGo_Unlocking_Affordable_Energy_Access_and_Financial_Inclusion_in_SSA.pdf

SECTION 2

Why is off-balance-sheet financing important for PAYGO companies?

How PAYGO companies finance their operations

PAYGO companies require working-capital to finance inventory purchases needed to support their growth. OBS financing is one way to secure working-capital. Companies can sell their receivables to an OBS facility—also known as an SPV—which, in turn, issues debt securities to investors to finance its purchase of receivables. This paper uses “SPV” and “OBS facility” interchangeably.

PAYGO companies operating in SSA are typically both retailers and consumer-finance providers. They source their products from manufacturers and sell them through the company’s distribution infrastructure. They also assess would-be customers’ credit worthiness (underwriting), finance their purchase (a credit sale) and, through various means (e.g., mobile-money payments), collect customers’ payments. Whatever the company sells, it must have been purchased as inventory before the sale was done.

Debt is an important source of financing for solar PAYGO companies. In 2021, debt was approximately 70 percent of the $455 million in external funding that off-grid companies (including PAYGO companies) raised to fund their growth and operations. This figure is a 1,000 basis-point increase since 2017, when debt was 60 percent of the $306 million off-grid companies raised.[4] Solar PAYGO companies use the debt they raise to buy inventory such as solar-energy kits. Companies typically raise inventory financing on their balance sheets, in which case the debt shows up on their balance-sheet statements. The company sells its inventory to a customer at a price called the contract value. The contract value amount of money the customer is expected to pay to own the item purchased.

Each product sold to a customer through credit generates cash (the deposit) and a receivable (the difference between the contract value and the deposit). A receivable is a promise of cash payments in the future. The customer makes receivable payments over a specified period (contract tenor) in fixed, specified amounts, which add up to the contract value balance (the contract value minus the deposit). The cash or mobile payments are usually made in equal amounts. The customer signs a sales contract with the solar PAYGO company covering the contract value, deposit, and repayment terms. The PAYGO company uses part of the money generated over the duration of each receivable to make any needed principal and interest payments on loans. The rest of the money is used to cover the company’s operations (e.g., overheads).

Even if the company can collect the entirety of its receivables, money locked up in receivables is money not available to buy new inventory, serve new customers, or pay down debt. Funding locked up in receivables which convert into cash too slowly or incompletely because of low collection rates can stress the company financially. For example, the company might default on its loan obligations because not enough cash is coming in to pay off inventory debt. This can lock the company out of capital markets. Another example of potential stress is operating losses that result from lost sales. Operating losses can happen because is the company does not have enough cash left after paying loans to buy inventory to meet customers’ demand. This could derail the company’s journey toward profitability.

[4] World Bank, *Off-grid Solar Market Trends Report 2022: State of the Sector* (Washington, D.C.: World Bank, 2022), accessed May 9, 2023, https://www.esmap.org/sites/default/files/esmap-files/Off-Grid%20Solar%20Market%20Trends%20Report%202022_Full_Optimized.pdf

The securitization opportunity in SSA

OBS financing is a significant enabler of consumer finance. In the United States, depending on the consumer-lending sector, an estimated 30 percent to 75 percent of consumer lending is securitized.[5] In SSA, securitization for solar PAYGO companies is a nascent though growing practice. Applying the proportion of securitized lending in the United States to SSA's current annual PAYGO sales of $500 million suggests an annual market opportunity of $150 million to $375 million.

This market opportunity has room to grow. Because PAYGO lowers barriers for customers to obtain products, this business model will remain a major path to electricity access for many in SSA, where more than half of the 1.2 billion-strong population people (versus 10 percent globally)[6] remain without access to electricity. As PAYGO sales grow, so will the opportunity for securitization. The cash unlocked from securitization will afford PAYGO companies the cash to sustain the growth needed to serve Africa's demand for electricity.

A brief overview of PAYGO securitization in SSA

One of the earliest attempts at securitization by a solar PAYGO company in SSA was in 2015. That year, Bboxx and Oikocredit set up a $500,000 off-balance-sheet vehicle to buy tranches of Bboxx's receivables denominated in Kenyan shilling (KES).[7] Persistent structured the deal and Oikocredit bought the U.S. dollar notes issued by the SPV. Bboxx did not scale the facility further because its size ($500,000) was too small to make it economically feasible. Bboxx found it more efficient to proceed with on-balance-sheet financing.

More securitizations for solar PAYGO companies have followed since, culminating in a $238 million facility established for off-grid company d.light in in 2022.

- In 2019, SunFunder set up a receivables-purchase facility of up to $9 million for SolarNow. Investors in SolarNow's receivables-backed notes included SunFunder and Oikocredit. For this facility, the main challenge was the need for a third party responsible for servicing the portfolio bought by the SPV.

- In 2020/2021, d.light—in conjunction with DFC (investor) and African Frontier Capital (arranger)—set up a $65 million OBS facility to buy Kenyan-shilling-denominated receivables from d.light's Kenyan operations. The SPV which issued the debt notes to DFC was called Brighter Life Kenya Limited 1. Norfund joined as a debt investor in 2021.

- In 2020, around the time d.light launched its OBS facility, Zola Electric Côte d'Ivoire, a joint venture between Zola and *Électricité de France* (EDF), launched a €40 million (approx. $40.1 million) OBS facility to buy Zola Côte d'Ivoire's receivables in local currency (CFA franc). Investors included *Société General* Cote d'Ivoire, the African Development Bank (AfDB), and *Crédit Agricole*. Financier NeoT was the arranger.

- In 2022, d.light launched Brighter Life Kenya Limited 2, a multi-currency OBS facility to purchase up to $238 million of the company's receivables' balance value. As with its last facility, d.light worked closely with AFC for this new, larger facility. In addition to DFC, the investor base expanded to three more investors: Oikocredit, Norfund, and responsAbility. Legal advisors Hogan Lovells and Bedell Cristin advised the investors.

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[5] Gary Gorton and Andrew Metrick, "Securitization," in *Handbook of the Economics of Finance, Volume 2A,* eds George M. Constantinides, Milton Harris, and Rene M. Schultz (Elsevier, 2013), 1–70, accessed May 9, 2023, https://www.sciencedirect.com/science/article/abs/pii/B978044453594800001X

[6] "Access to electricity (% of population)— Sub-Saharan Africa, World," World Bank, 2020, accessed May 9, 2023, https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=ZG-1W

[7] Entities mentioned in this document are illustrative and not exhaustive.

- First Growth Ventures, PaygOps, and Pawame are piloting a platform-based OBS facility. In the pilot, First Growth Ventures is securitizing Pawame's receivables using information and analysis provided by PaygOps.[8] The goal will be for clients of PaygOps' PAYGO technology to use the platform to sell the receivables they originate to investors through an SPV managed by First Growth Ventures. This receivables-aggregation model is one that holds strong promise for small PAYGO companies. This is because the SPV can aggregate receivables from many small companies using PaygOps' platform. Aggregating receivables in this way enables the SPV more easily to reach the $3 million in minimum monthly receivables issuance and sales to make the SPV economical. Section 5 elaborates on the issue of a minimum monthly receivables amount.

Benefits of securitization

1. **Improve cash flow and access to funding.** OBS financing can mean faster access to a certain percentage of cash tied up in a company's receivables balance. With access to the OBS facility, the PAYGO company can obtain cash by selling its receivables, and does not need to wait until its customers have fully paid their receivables. The company can use the cash it received from selling its receivables to the OBS facility to buy new inventory to fund new sales. This cycle works well when the unit economics of the product whose receivables are being sold is good. Specifically, the gross margin of each unit of the product should be 60 percent or more. A gross margin of 60 percent per unit implies that the cost of inventory per unit is about 40 percent of the product's contract value. On average, the PAYGO company will earn 50–60 percent of the receivable's balance value when it sells the unit's receivable to an SPV. The 50–60 percent is called the advance rate (which Section 5 covers in more detail).

   After paying off the unit's inventory cost, the company will have about 10–20 percent of the unit's balance value left to help cover the company's other expenses. Such expenses could be on-balance-sheet financing costs like interest on loans taken to finance inventory purchases. The company's ability to pay down past on-balance-sheet debt can improve its capacity to gain access to more on-balance-sheet financing opportunities.

   The "Advance Rate Calculator" tab in the Excel tool provides the PAYGO helps the PAYGO company estimate the advance rate it might get on receivables it sells to an SPV. Based on certain assumptions, the tool will estimate of the advance rate on the receivable balance. **The "Quick Decision Calculator" tab assess if the advance rate will, at the unit level, generate enough cash to pay off associated product-unit financing costs.** Section 9 discusses both tools.

2. **Lower cost of funding at scale.** When investors purchase a company's receivables, they are entitled to a portion of the company's cash flow rather than its profits, limiting the extent of investors' financial stake in a business. Credit-risk (that is, repayment-risk) assessments done as part of the securitization process will focus primarily on the quality of the receivables that are to be securitized. The receivables to be sold to an OBS facility will be assessed separately from the company.

   High-quality receivables can translate into a better credit-risk rating, lowering the cost of debt. When the PAYGO company sells its receivables to an OBS facility, customers' repayments on these receivables are available to the facility to use to pay interest and principal on the debt notes the facility issued to investors.[9] If the same investors had financed the company itself, they would be paid only after the

[8] "PaygOps Supports Last-mile Distributors' Scalability with a Disruptive Receivables Finance Mechanism," PaygOps, September 13, 2021, accessed May 9, 2023, https://www.paygops.com/post/receivables-finance-pilot-with-fgv-pawame. A supplementary video is available at: https://www.youtube.com/watch?v=1oev1aEYZLo&t=2557s

[9] Collecting customers' payments incurs a cost to the company, which may use a small amount of the receivable to cover administrative expenses in processing receivables.

company has covered its operating expenses. Because an SPV restricts investments to a company's credit portfolio, investors gain more direct access to the company's revenue through its customers' repayments, and do not have to wait to be paid back with profits. With their risk exposure limited to only one aspect of a company's finances—customers' repayment rates—those investing into the SPV are more likely to charge lower interest rates on their debt.

The PAYGO company can lower its financing costs also by using cash payments it receives from receivables sold to the OBS facility to pay off on-balance-sheet debt. When a company pays off on-balance-sheet debt quickly, it can allow the company to take out new inventory loans with shorter tenors. Shorter-tenor loans usually come with lower interest rates.

The above assumes that the company is operating at a scale at which it generates and sells upwards of $3 million in PAYGO receivables to the OBS facility each month. Section 5 returns to the question of scale.

3. **Reduce or stabilize FX risk.** A main source of FX risk for a PAYGO company comes from earning income in local currency while buying inventory or servicing debt in U.S. dollar (USD) or euro (EUR). A depreciation of the local currency, e.g., KES, means more of the local currency is required to pay the same amount of debt and suppliers' dues denominated in a more stable, or "hard," currency such as USD or EUR.

   An OBS facility helps reduce FX risk by paying the PAYGO company in hard currency for its local-currency receivables. The hard currency enables the PAYGO company to settle debts and dues without resorting to increasing amounts of local currency.

   Because the SPV earns local currency from the receivables it owns, but pays its investors in hard currency, the facility in effect takes on some of the FX risk that the PAYGO company would have borne. The facility manages this FX risk by factoring the FX-hedging cost into the (lower) advance rate it offers the PAYGO company for its receivables. The up to 50–60 percent advance rate that is common in the market already reflects the SPV's FX-hedging cost. Section 5 resumes the discussion on the advance rate.

SECTION 3

Key entities in an OBS securitization: Who does what?

The table below shows the parties involved in OBS finance.

Figure 1: Key entities in an OBS securitization

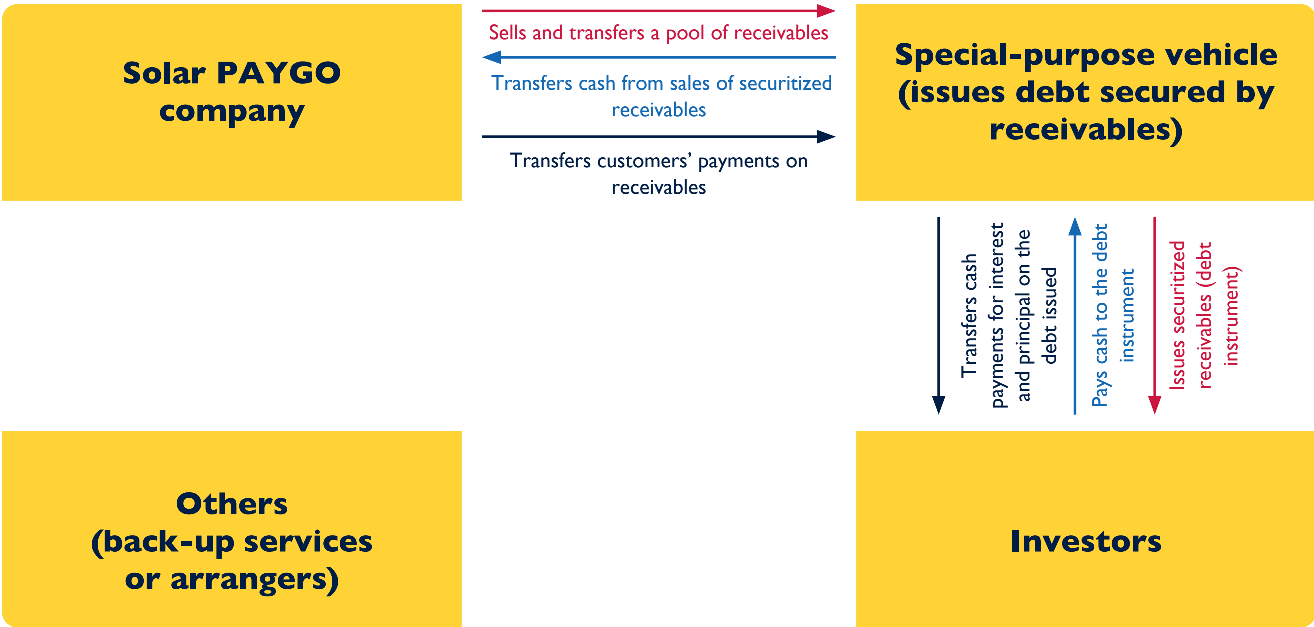

Table 1: Key entities in an OBS securitization with roles and examples

ENTITY	ROLE	EXAMPLE
PAYGO company (originator)	• The originator generates local-currency-denominated receivables in the ordinary course of its business. It does so by selling solar products to consumers on credit and in local currency. It then sells a pool of such the receivables, ideally without recourse to its other assets, to an SPV for upfront cash. In reality, some recourse always occurs: e.g., the PAYGO provider uses new receivables to replace 5–10 percent of the value of receivables whose collection levels drop below certain thresholds agreed upon with investors. Recourse is also available in other cases, such as fraud. • The originator also acts as the servicer of the receivables once it has sold the receivables to the SPV. That is, the originator manages the ongoing relationship with the customer on behalf of the SPV. This includes customer service, collecting repayments, and remitting the cash to an SPV-designated collections account. For this additional service, the PAYGO company earns a servicing fee from the SPV or investors. • The SPV, when selling receivables, usually receives payment from the investors in the currency of the debt instrument that the SPV issues. This is almost invariably EUR or USD. • The originator collects and makes payments to the designated account in the local currency in which in the cash is received from customers.	d.light

ENTITY	ROLE	EXAMPLE
SPV (issuer)	• The SPV is a single-purpose legal entity that is insulated from the originator's insolvency. The SPV buys receivables from the solar PAYGO company with cash from the investors' credit. The SPV underwrites and prices the receivables-based debt and pays the cash to investors. • Because the receivables repayments are in the local currency of the market in which they originated, the cash remitted to the SPV is also in local currency. As a result, the SPV will usually have agreements in place with currency-hedging service providers like TCX to hedge any loss in value due to depreciation. • The SPV's activities and rules of operation (e.g., how it distributes cash from receivables) are usually very tightly defined by its charter. This is done to minimize its engaging in any activities that could be detrimental to investors (e.g., deciding to buy receivables from a different sector).	Better Life Kenya I
Investor	• The investor purchases the debt the SPV issues, and receives debt payments (interest and principal) from the SPV. • In developed markets, investors are usually banks, insurance companies, and pension funds. In SSA, international development-finance organizations have been the main purchasers. Local insurance companies and pension funds are yet to get involved because the debt issues are yet to be rated by third-party rating agencies.[10] • Investors are usually attracted to SSA-focused SPV structures because of: » The legally robust nature of SPVs and their reduced financial risk: Restrictions on SPVs' operations make them "bankruptcy-remote" vehicles that own the receivables. » The opportunity to assist PAYGO companies in SSA by purchasing their receivables. » Limited FX risk given that the SPV prices the receivables it purchases to take FX risks into account.	DFC; Norfund; Oikocredit
Back-up servicer	• The back-up servicer steps in to perform the PAYGO company's servicer function if the company cannot collect payments from users because of, for example, bankruptcy. • No independent back-up servicing companies appear to serve SSA's solar PAYGO securitization market. Filling this gap can expand the OBS securitization market. Today, the OBS arranger usually fulfils the role of a back-up servicer role and uses the originator's contingency plans. If the originator does not have one in place, it will be required to establish one as part of the securitization effort. Section 5 discusses contingency plans.	Africa Frontier Capital (in the context of the BKL1/d.light SPV) PaygOps in the context of the Frontier Growth Ventures/ PaygOps/ Pawame SPV pilot
Arranger	• The arranger—an investment advisor or facilitator— is usually appointed by the originator or SPV investors. • The arranger is structures (designs, sets up, and manages) the OBS facility and the corresponding securities offering for SPV investors. • The arranger is usually the main entity preparing or overseeing the various legal agreements and their development. These agreements govern how the OBS facility operates. Section 7 briefly discusses such agreements.	Africa Frontier Capital Frontier Growth Capital

[10] A rating agent is an independent third party. It is not the arranger and has no stake in the deal. The mandates of local pension funds and insurance companies usually require independent ratings to determine the credit quality of the debt instrument being issued.

ENTITY	ROLE	EXAMPLE
Sponsor	• The sponsor is the entity that pays for the entire process upfront and then recoups the funding upfront or over time from the SPV's funds. • The sponsor can be the PAYGO company/originator, though current market experience is that the arranger is often the sponsor. The arranger then recoups the costs it in the form of fees from the SPV's receivables-based cash inflows, or as a portion of the debt disbursed to the PAYGO company.	Africa Frontier Capital
Others	Other entities that can also help to establish an SPV. • **Data-service providers** can help to manage and analyze originators' or sponsors' data. • **Lawyers** must ensure that transactions and associated documents are properly structured and drafted in line with the laws of the jurisdictions which the securitization covers. The PAYGO company and investors will typically each have its own lawyer(s). Hired by the arranger, the lawyer coordinates the relationship between the PAYGO company and the investors, and acts on behalf of the arranger. • **Financial intermediaries** such as telecommunications companies, banks, and other financial institutions facilitate payments associated with the OBS facility. • **A trustee** holds the investors' security interest in the receivables for their benefit. A trustee is usually a financial institution like a bank. • **Currency-hedging service providers** can hedge against fluctuating currency-exchange rates by swapping or forwarding contracts. FX-hedging services integrate their fees into the discount rate applied by the arranger to the future value of the receivables sold to the SPV. More on this in Section 5.	Hogan Lovells (lawyers) Safaricom (Kenyan Telco; enables mobile-money-based payment collection) Avanza (global PAYGO-system manager) TCX (FX hedging)

SECTION 4

What should the company bear in mind when considering OBS securitization?

Securitizable assets should be transferable and have reasonably certain future cash flows

Assets to be securitized must, with reasonable certainty, generate cash flows in the future. To get a sense of whether the future cash flows will be predictable, arrangers will often look to the PAYGO the payment history of the company's receivables portfolio to estimate future performance. Arrangers will also look at the PAYGO company's underwriting and debt-collection procedures to see if effective processes are in place to collect payments from customers.

Securitized assets must also be transferable. That is, the asset's future cash flows can be contractually assigned to a third party (in this case the SPV when the sale to the SPV is made).

What to bear in mind with receivables securitization

The table below lists what a PAYGO company must consider regarding securitization.

Table 2: Key considerations by category

CATEGORY	WHAT TO KNOW
How will securitization interact with local laws?	• Parties to the SPV should understand the local regulatory regime for securitization. They should anticipate the legal ramifications of securitization, consumer-protection and privacy laws, and securitization statutes (such as Kenya's). Local legal counsel will help the company and arrangers to answer these questions. • It is important for the company to check that market from which receivables originate enables the PAYGO company to sell the receivables. In many countries, selling receivables into an SPV triggers value-added tax on the balance value of the receivables. This means the SPV will be forced to pay the tax on revenues it might not receive because collections from customers are not guaranteed. This can make selling receivables impractical. • The PAYGO company (the originator) should have legally defensible and enforceable mechanisms to deal with non-paying customers. An OBS facility will be unwilling to buy receivables from markets with weak or no legal frameworks that govern debt collection. • All information transferred to the SPV (e.g., customers' contracts) must be permissible by local privacy laws. • It is good practice to consult a local tax and audit expert on possible tax and debt-collection issues that can arise in a particular country. Auditors can assess how tax authorities categorize selling receivables to an SPV.
Is the PAYGO company mature enough?	• The company should be at least in the growth stage with three or more years of receivables performance and audited company financials. • The company's receivable history should ideally be at least as long as the lifetime of the OBS facility. Most SPVs last four to seven years. OBS facility's underwriters use data on receivables to establish a purchase price (called the advance rate) for the receivables' balance. • Assuming the receivables being bought will, on average, have a repayment window left of two years, and the OBS facility budgets 2.5 years for repayments (two years and a six-month buffer), the years during which the SPV can buy new receivables will be up to 2.5 years for a five-year facility.

CATEGORY	WHAT TO KNOW
Is the company sustainable?	• The company should be a going concern over the duration of the OBS financing window. This means the company should make a credible case that it can operate for at least as long as the would-be facility's four-to-seven-year lifespan. Given that most solar PAYGO cannot guarantee that they will be going concerns in four to seven years, SPVs have been adapted to: 1. Offer a shorter facility length, although SPVs with a duration less than three years are uncommon. 2. Adjust the advance rate downward to reflect the perceived risk if the company has not operated long enough for securitization. 3. The amount of time a business can remain solvent can be estimated by dividing the company's positive equity balance by average net annual losses (if the company is loss making). Alternatively, if the equity balance is negative, the company's lifetime can be equated to its outstanding cash, or average annual "cash burn." Cash burn is an average of the company's net cash flow over the last two to three years.
Does the company offer robust sales and reliable products?	• For each product whose receivables are to be securitized, the PAYGO company should have sold at least 5,000 units. For each such product, repayment data (collection rates, default rates, and 30-day portfolio-at-risk)[11] must exist for a time window which should be at least the duration of the facility's window. • Arrangers consulted for this paper suggest that the 5,000-unit level provides them enough data to generate confident insights into the repayment rates of future receivables. • The PAYGO company should establish quality and warranty protocols for its products. The business should share data on technical issues encountered and resolved, and obtain quality standards such as Verasol. • Comprehensive data on products are crucial to help parties to the SPV model and value the receivables to be securitized.
Are the on-balance-sheet lenders aware of the securitization?	• The PAYGO company must seek senior-debt holders' consent to the use of receivables, current and future, for any OBS facility. As senior lenders, they will likely have some of their debt collateralized by the company's assets (which can include receivables). Ideally, once the PAYGO company can securitize its receivables in an SPV, it will use on-balance-sheet debt solely to finance inventory.
Is the portfolio big enough?	• OBS finance practitioners suggest that the originator's pre-securitization receivables portfolio should be worth at least $5 million. Having a sizable receivables portfolio is necessary because: » A large outstanding receivables pool means the company may not have the required customer-repayment data to aid financial analyses necessary for the securitization. » A large receivables base helps make the SPV economically attractive from day-one. A large existing base of receivables, once securitized, will help the SPV generate cash flows quickly and in sizeable amounts to cover its operating costs. • Sales of receivables to the SPV will require careful alignment and negotiation between the PAYGO company's on-balance-sheet lenders (who financed the inventory that generated the receivables), and the SPV (which wants to purchase the receivables without recourse). If the PAYGO company defaults, its on-balance-sheet lenders cannot claim the receivables sold to the SPV. PAYGO companies considering OBS securitization should inform their on-balance-sheet lenders early on of their intention to pursue securitization. • If the cash to be received from selling receivables to an SPV is enough to pay-off any on-balance-sheet debt, associated penalties, and the interest balance, on-balance-sheet debt lenders may be more open to a securitization.

[11] To learn more about these key performance indicators, see: "PAYGo Perform KPIs: Financial, Operational, and Portfolio Quality Indicators for the Pay-as-you-go (PAYGo) Solar industry," CGAP, 2023, accessed May 9, 2023, https://www.findevgateway.org/paygo-perform-kpis

CATEGORY	WHAT TO KNOW
What value of receivables must the company generate in the future?	• Securitization practitioners suggested that the PAYGO companies suitable for OBS financing must have the potential to generate at least \$1 million in new receivables per month. This is about 5,000 new unit sales each month, assuming the average market price of \$200 per solar kit. The optimal figure is at least \$3 million in monthly receivables. Cost-amortization benefits begin to apply between \$1 million and \$3 million in monthly purchases by the OBS facility. The higher the volume, the better. • Receivables' short lifespan (rarely more than two years) compared to the lifespan of an SPV (four to seven years) means the SPV will buy a stream of new receivables. SPVs' need for a stream of receivables to be available for purchase is consistent with the requirement that the PAYGO company originate \$1 million of new receivables each month. The stream of sales to the SPV helps generate a steady stream of cash collections from receivables to maintain the SPV's operations and provide its investor with a steady stream of returns. • To reduce conflict of interest or selection bias, most SPVs have a strong preference to purchase all the originator's receivables in each market the SPV prioritizes. The PAYGO company selling its receivables to an SPV would be tempted to sell the worst set of receivables to the SPV and keep the best sets for itself. Buying all of them prevents this behavior. • If a company generates less than \$3 million in monthly receivables, it can still be suitable for an SPV. The company's best path to securitization is likely through the arranger that will aggregate the PAYGO business' receivables with those of other companies. Through aggregation, investors can create a pool of monthly receivables worth \$3 million.
How much will the securitization cost?	• Individuals and companies experienced in securitization suggested a budget of \$250,000 to \$1 million to cover legal and structuring costs for a first securitization. If the SPV and securitization process is standardized (on subsequent issues), costs per deal could diminish to \$25,000 to \$50,000. Lower costs for the initial securitization depend on coordination among the parties and on an efficient legal process. The budget includes legal costs and fees for the arranger to design and underwrite the securitization. Sponsors that market to investors and secure their interest will also levy fees. As part of the securitization process, the arranger will present the PAYGO company with a full list of costs and their basis. • Issuance costs for an on-balance-sheet facility can be approximately 2.5 percent of the facility's size. If the originator wants to achieve a similar 2.5 percent cost for an OBS facility, it must amount to approximately \$40 million (2.5 percent of which is \$1 million, assuming the higher end of the budget) over its lifespan. If the facility's receivables are bought only in the first three years, then the OBS facility should buy approximately \$1 million in receivables monthly. To reduce the SPV's issuance cost to 1 percent of its total value, an OBS facility should buy more than \$2.5 million in receivables from the originator per month. This optimal monthly figure is close to the \$3 million that SPV specialists have suggested. • Who covers the cost of the securitization is a matter of negotiation between the originator and arranger. Originators with large cash reserves can cover the cost. Otherwise, the arranger often covers the cost and recovers (that is, amortizes) it over the life of the facility. The arranger incorporates the cost of establishing the SPV into the discount rate used to determine the advance rate the originator gets. • For its servicing role, the PAYGO company will typically be paid about 0.5 percent of the monthly receivable payments collected and remitted to a designated account by and on behalf of the SPV.
What advance rates are possible?	• For the receivables it sells to the SPV, the PAYGO company usually receives cash payments not more than 50–60 percent of the balance value of these receivables. For example, if the receivables' balance value is \$1,000, the PAYGO company will get \$500 to \$600 of that balance value. The balance value of the receivables is simply the contract value of the receivables minus payments made by the customer. The maximum amount of the receivables' balance value paid to the PAYGO company is called the advance rate. • The advance rate paid out for subsequent receivables sold to the OBS facility is usually adjusted upward or downward depending on how well the OBS facility's receivables are performing. For example, if outstanding receivables in the OBS facility have a higher collection rate than used to establish the advance rate, the PAYGO company's new receivables to the OBS facility may earn a higher advance rate.

CATEGORY	WHAT TO KNOW
What advance rates are possible?	• The advance rate depends on the collection rate and the discount rate applied to receivables' future cash flow. » The collection rate represents the share of expected future receivables cash that will be collected. The higher collection rate, the higher the advance rate. It is established using the company's historical collection rate on its receivables. » The arranger establishes the discount rate. This rate reflects a mix of factors: Investors' returns-expectations for receivables-backed debt that the SPV will issue to investors; default rates expected for the receivables; FX hedging cost on the future cash flows from the securitized receivables; and the SPV's future ongoing operating costs (e.g., receivables servicing costs). The discount rate is the comprehensive cost of the funds the SPV raises. The discount rate is usually in the upper ranges of 30–40 percent and applied to the local-currency receivables' future cash flows. • The **"Advance Rate Calculator"** tab in the accompanying Excel tool lets users estimate an advance rate according to the expected collection rate, remaining balance, remaining tenor, discount rate, and the enhancement rate. To arrive at the advance rate, at least two steps must be taken. 1. The discount rate is used to discount collection-rate-adjusted future cash flows of the receivables to their present value. The present value at discount rate is the maximum price a buyer will pay for the receivables today. The buyer will own the receivables' expected future cash flows, and earn a return equal to the discount rate. 2. Dividing the calculated present value by the balance value of the receivables and subtracting a buffer yields the advance rate. The discount rate is often 30–40 percent or more. Usually, about 50 percent of this value is a combination of interest and FX-hedging costs. The 40 percent discount rate consists of: » Debt cost in hard currency is 6–7 percent. » FX hedging costs 10–13 percent (e.g., for Kenya). In an ideal world, the sum of the hard-currency cost of debt and FX hedging will roughly equal the cost of local-currency borrowing in the market from which receivables originated. » Servicing and administration costs for the SPV make up the balance at 14–20 percent. If the arranger pays for some or all the securitization cost, that cost is usually reflected in this component of the discount rate. 3. A buffer is built into the calculation rate of the present value to improve the financial attractiveness of the receivables to prospective investors. If cash flows materialize as planned, the originator is refunded any extra cash held by the SPV. » The enhancement incentivizes the originator to generate high-quality receivables and collect payments. The originator is last in line for any cash received from the SPV's cash collections. » The enhancement rate is usually more than 10 percent. When the enhancement rate is a positive amount, the receivables-backed debt issued by the SPV is "overcollateralized." That is, the debt is backed by more receivables (the collateral) than is needed. • For example, if the balance value of receivables contracts is $2,000, and their present value is $1,400, and one applies a 10 percent enhancement, the advance rate will be 60 percent: (1400/2000) - 10% = 70% - 10%. • Under a set of reasonable assumptions, a PAYGO company aiming to benefit from an advance rate of about 50 percent or more should have collection rates exceeding 75 percent.[12]

[12] The key assumption is that the receivables have a tenor of up to 24 months, with two months of additional collections to reflect allowances from uncollected receivables payments. The discount rate is 40 percent (7 percent debt interest rate; 13 percent FX hedging; 20 percent serving and other costs), with a 5 percent enhancement rate.

CATEGORY	WHAT TO KNOW
What advance rates are possible?	A PAYGO company with an average receivables collection-rate of 60 percent (which most companies in the sector experience today) can get an advance rate close to 50 percent, albeit with difficulty. The most realistic path to such an advance rate is for the SPV to apply a discount rate of about 15 percent and enhancement of up to 5 percent. These two assumptions are only realistic only if: 1. The SPV's investors lower their return expectations to less than 0 percent (e.g., it is zero if the investment is a repayable grant). 2. The market currency from which the PAYGO company originates receivables has low currency-volatility, resulting in FX-hedging costs of up to 5 percent. 3. The PAYGO company pays for most, if not all, the cost of establishing the SPV upfront. Grant funding can also defray this cost. • Once the PAYGO company has estimated the advance rate, it should consider if, at a single product-unit level, securitization makes financial sense. The cash the PAYGO company would receive from an SPV should be enough to off the cost of each unit of inventory that has generated the receivable. • The **"Quick Decision Calculator"** helps the company assess if securitization makes financial sense. We recommend the PAYGO company use the **Advance Rate Calculator** to establish an advance rate. It can then use that advance rate in the **Quick Decision Calculator**, alongside other assumptions, to assess if the advance rate will make financial sense, considering the inventory costs associated with each unit's receivable.
How long will securitization take?	• The end-to-end securitization-structuring process typically takes four to eight months, though can stretch to a year. The process comprises assessments, negotiations, and structuring and launching the SPV. • To speed up the securitization, the originator should share comprehensive, high-quality data on its finances and business performance, and help the parties' legal teams to coordinate.
What credit-management processes should be in place?	• Robust cash-collection and cash-management processes will maximize repayments from customers while treating them with dignity. These processes must ensure that collected cash is easy to monitor and remit to the SPV. • The company's collection systems must be easily accessible to the SPV's back-up servicer if it needs to step in. An efficient collection system is easily accessible within a few hours. The back-up servicer should be able to take over at least 80 percent of the collection process within a defined time (e.g., one day). • Regarding repossessions, the PAYGO should carefully establish the associated costs and responsibilities of the SPV and the receivables servicer. Repossessions involve significant costs. The parties should align their repossession policies and incentivize the servicer to repossess products only when it is sensible. If the SPV owns the system, the servicer does not get a benefit from repossessing, refurbishing, selling it.
How should you design receivables contracts?	• The PAYGO company should have robust customer contracts in place. Each sales contract between the PAYGO company and customer should be: 1. Standardized: There are few to no variations from customer to customer. 2. Transferable: Future cash can be assigned to a party different from the originator of the receivables. 3. Enforceable: Repayment can be enforced legally. • The contracts should be informed by local-market legal and auditing expertise.
What should your reporting systems do?	• The originator should have robust systems that can report the portfolio performance of the securitized receivables. The originator should report collection rates and amounts, default rates, write-offs, and 30-day portfolio risk). This data should be available for all receivables and cohorts of receivables, reported at least weekly and accurately.[13] Most effective is a live system which is always up to date, showing the daily performance of the receivables sold to the SPV.

[13] See also: "PAYGo Perform KPIs: Financial, Operational, and Portfolio Quality Indicators for the Pay-as-you-go (PAYGo) Solar industry," CGAP, 2023, accessed May 9, 2023, https://www.findevgateway.org/paygo-perform-kpis

CATEGORY	WHAT TO KNOW
What should your technology systems do?	• High-quality, digital monitoring is valuable whether or not the company opts for securitization. • Robust reporting relies on interconnected accounting, supply-chain management, and payment systems that generate easily accessible and analyzable data. • Robust means that the company has policies that ensure that data financial data are reported with integrity. This data should be easily accessible in formats suitable for analysis and should be available to the back-up servicer if needed.
What makes a good contingency plan?	• The PAYGO company should have a plan if it can no longer service the receivables it sold to the SPV. This scenario can occur because of bankruptcy or if the SPV removes the originator as a servicer for breach of contract. • The plan should have a clear (and, ideally, tested) process to transfer key business functions to a back-up servicer. These functions are: 1. Call centers and service centers for customers. 2. Maintenance and repair operations for SPV-linked customer contracts under warranty. 3. Payment collection and remission for receivables that are SPV-pledged. 4. Systems to manage credit risk and loan accounts. • The arranger is likely to discuss a contingency plan with the PAYGO company.

SECTION 5

Elements of OBS securitization

Figure 2 shows phases of OBS securitization. The estimated budget is $250,000 on the low end. It can rise to several million dollars. The process will take four to eight months, but can extend to a year.

Figure 2: Key phases in OBS securitization

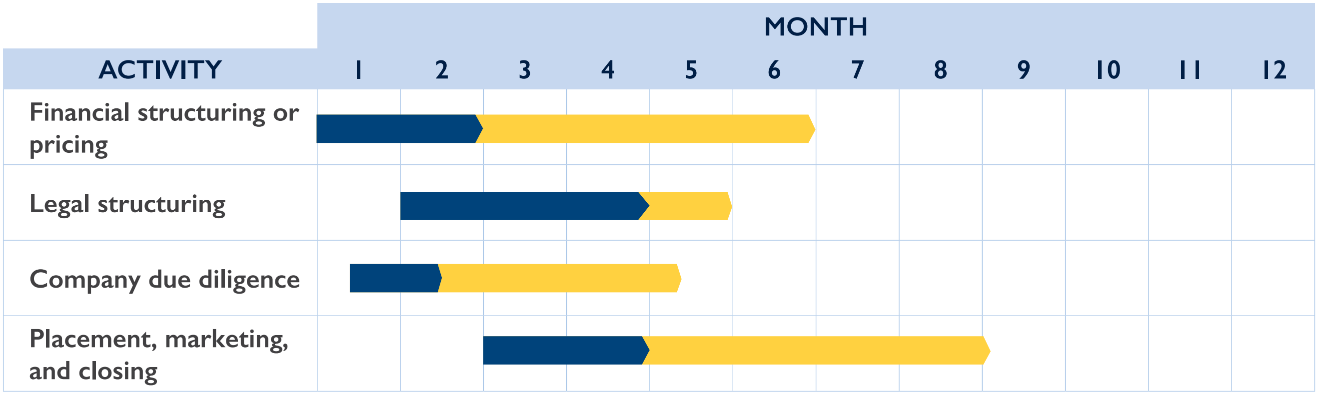

Table 3: Modeling key phases in OBS securitization by phase

CATEGORY	ITEM	DESCRIPTION	PROVIDER	TIMING	BUDGET
Financial structuring or pricing	Single-unit pricing model	Analyze margins; price payment plans versus risk.	PAYGO company	2–6 months depending on the quality of the data	10%–15%
	Portfolio and note-valuation model	Discount future cash flows.	Sponsor/arranger		
	Cash-flow model	Model the SPV's cash flow.	Sponsor/arranger		
	Scenario-simulation engine	Model scenarios to understand note performance in relation to default rates (loss of principal) and delinquency rates (liquidity issues).	Sponsor/arranger		
	Data-input worksheet and process	Route information from the accounting systems of the issuer to price notes and simulate scenarios.	Sponsor/arranger		
	Market (benchmark rate) analysis and note pricing	Analyze local capital markets and market prices; iterate pricing of notes.	Sponsor/arranger		
Legal structuring	Legal- and regulatory-threshold analysis	Analyze legal and regulatory limitations and implications to determine if a market is suitable for securitization.	Sponsor/arranger/ legal advisers	3–4 months	45%–50%
	Term sheet draft	Prepare a draft term sheet that reflects the key financial terms of the receivables purchase, issuance fees, and basic investor rights.	Legal advisors		

Legal structuring	Negotiating key terms	Agree on the key terms used in the draft term sheet between the PAYGO company and the sponsor/arranger.	Sponsor/arranger and PAYGO company	3–4 months	45%–50%
	Drafting and negotiating legal documents	Prepare and agree on the associated legal documents, including financing agreements, sales and purchase agreements, servicing agreements, and back-up servicing agreements.	Legal advisors		
Company and portfolio due diligence	Due diligence for investors	Perform due diligence regarding the financial, commercial, and operational performance of the PAYGO company and the initial portfolio.	Sponsor/arranger, and PAYGO company	1–3 months depending on the quality of the originator's data	10%
Placement and marketing	Placement and marketing with investors (other than lead investor)	Finalize terms sheets and placement documents; meet potential investors.	Sponsor/arranger and PAYGO company	2–6 months depending on whether the offering has been presold	30%–35%
Closing	Closing	Finalize pricing, sign contracts, and transfer funds.	Sponsor/arranger and PAYGO company/legal advisors	< 1 month	5%

SECTION 6

Contractual agreements required in OBS securitization

The arranger's legal counsel prepares the first drafts of the contractual agreements for the OBS facility and helps to develop them into the final documents.

Table 4: Key agreements in securitization

AGREEMENT	DESCRIPTION
SPV setup and operation	• Establishes the SPV and its roles, responsibilities, and boards. The PAYGO company creates the SPV, sometimes in conjunction with the arranger.
Purchases and sales (includes the deed of sale and origination agreement)	• The PAYGO company agrees to sell a pool of receivables to the SPV and the SPV agrees to buy them. These agreements set the purchase price and establish representations and warranties about the receivables and other matters.
Servicing	• The PAYGO company agrees to collect and remit the amounts due to the SPV on the receivables in exchange for the agreed-upon servicing fee. • If maintenance of the product is required, it will be included in the servicing agreement and will define roles.
Financing, or note purchase	• Comprises the receivables-backed notes (i.e., debt) issued by the SPV and bought by debt investors. The agreement will usually specify financing, frequency, tenor, interest rates, and cash waterfalls (who gets paid first). • If FX hedging is needed, a separate hedging agreement between the SPV and the hedging-service providers should be drawn up.
Back-up servicing, limited license, and escrow	• The back-up servicer agreement is similar to the servicing agreement. It is signed with the entity that will step in to act as the servicer if the originator (PAYGO company) can no longer perform its servicing function. The agreement sets out the terms the step-in and servicing fees. • The agreement between the servicer and originator also covers licenses and technology to be transferred to the back-up servicer.

SECTION 7

Simplified term-sheet template

Term sheets are drafted and signed after the arranger has performed due diligence on the PAYGO company and the portfolio it seeks to securitize. The simplified term sheet below lays out elements of the agreement the SPV will sign with the originating PAYGO company. The table shows the three main sections of the term sheet and what they cover. Here is a link to a term sheet that illustrates the summary below.

Table 5: Key sections of a term sheet

AGREEMENT	DESCRIPTION
Transaction parties	This identifies transactions in the OBS securitization and expectations. The parties are the issuer, originator, servicer, sub-servicer, and trustee.
Terms of the debt note issued by the SPV	The terms cover the note currency, advance rate, interest rate, payment frequency. They also define default conditions, payment dates, and prepayment.
Transaction structure	To structure the SPV, the parties must identify: • What a contract means and what the originator must report when it sells receivables to the SPV. The items to be reported are the present value of the contracts, number of contracts, and the remaining term of the receivables. The parties must establish what constitutes a defaulted contract. • Standards that receivables contracts must adhere to if they are to be included in the SPV pool (the contract has not defaulted, for example). • The timing and conditions of revolving purchases and sales into the SPV pool. • The list of documents the parties sign it, and when the signature should occur. • Fees for the arranger and SPV's trustee. • Others: servicing (of contracts); use of proceeds (what happens to the money the issuer collects from the sales of notes to investors); initial closing date; governing law of the transaction documents; various accounts (collection account, payment account, and reserve account); priority of payments (for the cash in the payment account); and any covenants and overcollateralization terms.

SECTION 8

Simplified SPV Excel model

This simplified SPV Excel model (access it here) offers three tools.

- The first tool is the advance rate calculator (see the "Advance Rate Calculator" tab) The tool will help the PAYGO company estimate the advance rate it might get on receivables it sells to an SPV. The tool will estimate the advance rate on the receivable balance according to a set of assumptions. The table below is a snapshot of what the tool looks like. When the user enters data into the yellow cells, the tool calculates an advance rate. The values that appear in the tool are illustrative. For actual values, the PAYGO company should engage an arranger.

ADVANCE RATE CALCULATOR

	Unit	Value	Formula	Comment
PayGo company's receivables parameters				
Contract value	Local currency	1000.00	a	The Contract Value us the total payments expected from the customer (inclusive of any deposit)
Balance value = Contract Value's remaining balance	% of receivables contract value	90%	b	This is the Contract Value less Deposits and any payments already made as of the time of the sales. This is also the nominal value of the receivables the SPV will buy
Remaining tenor (of equal monthly payments left) on Balance value	Months	24.00	c1	
Additional months of collection after the official tenor on the Balance value ends	Months	2.00	c2	The actual extension the SPV will use will be subject to their discretion and the facts they gather from their analyses. It will usually be 25%-50% of the upper bound (see Row 13 for the Upper Bound)
Tenor used by the SPV	Months	26.00	c = c1 + c2	This is the total number of months the SPV plans to collect payments from the receivables it will purchase
Expected collection rate on balance value	% of expected monthly repaym	75%	d	
Rough Upper bound on Additional months of collection	Months	8.00		Sets an upperbound on the value of c2. c2 should not ideally not exceed this value if the customers continues to pay the collection-rate adjusted payments
SPV parameters				
Discount rate (cost of funding that combines investor return, FX hedging, and other ongoing SPV costs but excluding SPV set-up costs)*	Per annum	40%	e = e1+e2+e3	
Cost of debt in hard currency	Per annum	7%	e1	This is the return paid to the SPV's investors. It is a hard currency rate
FX hedging cost	Per annum	13%	e2	This is cost of hedging the SPV's local currency inflows when they are converted to hard currency. We assume all inflows are hedged
Others: servicing costs; SPV ongoing operational costs outside of servicing	Per annum	20%	e3	The SPV pays the Originator for its servcing; and has its own operating costs in needs to cover (cash management; cost amortization etc)
Enhancement rate (effectively an equity incentive stake for the PayGo originator)	% of Balance value	5%	f	This added by the OBS facility to provide a cash buffer used to minimize disruptions to expected cash payments to investors. If all goes according to plan, this is returned to the Originator The enhancement aims to overcollaterize the receivable's balance
Advance rate calculation				
Balance value	Local currency	900.00	g=a*b	
Monthly expected repayment	Local currency	37.50	h=g/c1	
Actual repayment	Local currency	28.13	i = h*d	
Present value of future cash flows from receivables	Local currency	484.03	j	
Present value as a share of contract value	% of Balance value	54%	k=(j/a)	Uses c as tenor
Advance rate estimate on the PayGO's Balance value of the receivables that will be sold to the	**% of Balance value**	**49%**	l= k-f	

Important assumptions to plug into the calculator to get an estimate of the advance rate are:

- Contract balance value, remaining tenor, additional buffer tenor, expected collection rate, servicing costs, and defaults. (The PAYGO company can provide this information.)
- Cost of debt in hard currency, FX-hedging costs, operating costs for the SPV, and the enhancement rate. (The arranger will have access to this set of data.)

- The second tool is a quick-decision tool (see the "Quick Decision Calculator" in the Excel tool). It helps the company assess if securitization makes financial sense. An SPV can be viable if the if the PAYGO company gains enough cash from each receivable contract sold to pay off its debt from acquiring products it has sold on credit.
- The cost of this inventory is the on-balance-sheet debt that the PAYGO might need to pay off if it sells the receivables to an SPV. The payment might be required by the on-balance-sheet lenders if they believe proceeds from the SPV are insufficient to service their loans.

QUICK DECISION CALCULATOR

PayGo's on-balance sheet debt parameter for unit to be securiti	Unit	Value	Calculatio	Comment
Advance rate on a unit receivable	**% of Balance value**	**49%**	a	Use estimate from the advance rate calculator tab here
Balance value	% of Contract value	90%	b	Use estimate from the advance rate calculator tab here
Product unit gross margin	% of Contract value	60%	c	This is = (Contract Value - Unit Cost of Good Sold)/Contract Value
Share of debt used to buy/finance a unit of inventory	% of Inventory value	100%	d	
Share of the unit inventory debt still outstanding	% of Inventory debt	90%	e	
Early repayment penalty (and other costs) on the inventory debt	% of Outstanding debt	5%	f	
Disbursement fees (for arranger)	% of Balance value	5%	g	
Inventory unit value	% of Contract value	60%	h = 1-c	
Outstanding inventory debt	% of Contract value	22%	i = h*d*e	
Cost of retiring on-balance debt associated with the receivable to be sc	% of Contract value	23%	j = h*(1+f)	Principal + penalty
Cost of retiring on-balance debt associated with the receivable	**% of Balance value**	**25%**	k = j/b	
Difference between a unit's advance rate and its unit cost of (associated on-balances sheet) debt retirement	**% of Balance value**	**19%**	l = a-k-g	A positive number (green color) suggest that the advance rate is enough, cetris paribus, to enable the PayGo company to retire the ourstanding debt the unit (if any). A positive number suggests the securitization is favorable to the company. A negative number suggest the company should proceed with caution

- The third tool is a PAYGO company's SPV-related cash-flow model (access the tool here). It provides the PAYGO company with an overview of the company's cash flow. It shows if an SPV generates positive cash flow for the company.

SECTION 9

Key actors in OBS securitization for solar PAYGO companies

Table 6: Entities with OBS securitization experience in SSA

ENTITY TYPE	ORGANIZATIONS
Investors	• DFC • Norfund • Oikocredit • *Société Générale* • *Crédit Agricole* • SunFunder
Arrangers	• Africa Frontier Capital • First Growth Ventures • NeoT Capital • SunFunder
Legal advisors	• Hogan Lovells • Bedell Cristin • Norton Rose Fulbright
PAYGO companies (originators)	• BBOXX • d.light • Zola Electric/EDF • SolarNow
Back-up servicers	• None in SSA, representing a market gap
Other providers	• PaygOps (PAYGO-platform provider) • Angaza (PAYGO-platform provider) • TCX (FX-hedging)

CONCLUSION

Securitizing PAYGO receivables can unlock up to $375 million in additional financing for PAYGO companies in SSA. Securitization can provide the business with an additional source of funding by accelerating its access to cash locked up in receivables. Securitization can also lower the company's financing costs by limiting credit assessments to a pool of assets rather than the entire company. Companies can use securitized assets to gain access to hard currency to service debt (on their inventory, for example).

Companies and individuals with experience in OBS financing suggest that organizations considering securitizations should:

1. Have sold at least 5,000 product units, and have the associated data ready, by the time of the securitization. This information will give investors insight into customers' repayment behavior and collection rates.
2. Collect and share information on the receivables' performance (e.g., portfolio-at-risk for 30 days and collection rates) with the OBS facility frequently. The information enables the SPV to value new receivables.
3. Design and test a contingency plan that can transfer debt-collection activities to back-up servicers if the PAYGO company cannot service its debt.
4. Plan how to generate over more than $1 million in monthly receivables to sell to a potential SPV.
5. Fine-tune debt-collection systems to achieve high collection rates of at least 75 percent of the receivables to be securitized. This rate improves companies' likelihood of achieving a 50–60 percent advance rate.
6. Deploy standardized contracts for their products and establish SPVs in markets with the right legal frameworks for securitization (see Table 2 above).

Beyond what PAYGO companies can do to prepare themselves for securitization, independent back-up service providers can step in to scale OBS financing. Rating agencies can play their role to unlock local investors like pension funds and insurance companies, and DFIs can expand their role to assist OBS transactions. SSA presents a large opportunity for each of these institutions to become more involved in OBS financing.

1. SSA has a dearth of independent parties that offer back-up servicing. Back-up servicers drive the growth of securitization in the consumer-lending market.
2. Institutional investors like pension funds are markedly absent as SPV investors. SPVs' high-quality receivables denominated in local currency can help attract them. Many institutional investors are required by law to invest only in investment-grade securities. Ratings agencies should consider rating SPVs as investment vehicles. Pension funds' acceptance of local-currency repayments reduces the share of receivables repayments that needs to be hedged.
3. The few DFIs like DFC and Norfund involved in securitizing PAYGO companies have done so mainly as debt investors. A new class of investors, like foundations, could offer grant funding to lower SPVs' cost of debt. Another form of support is buying the first-loss tranches of SPVs' debt in SSA. DFIs can do more to assist PAYGO companies by subsidizing currency-hedging costs for SPVs. Moreover, given the high cost of small securitizations, more grant funding to cover the cost of structuring SPVs will benefit companies with smaller receivables bases.
4. PaygOps is developing a digital platform to assist smaller companies to manage their SPVs. Few such digital applications are available to small SPVs.

The two characteristics for a securitizable asset—transferability and the ability to generate future cash flows—suggest that electric transportation ("e-mobility") and productive-use assets could also benefit from securitization. Solar pumps, mills, and electric motorcycles are often sold on a lease-own-basis, or on the classic hire-purchase lease. Both sales models create a receivable for the seller. To make the product affordable to customers, the associated repayment contracts often span years (usually 1.5 years or more). Each resulting receivable is a series of future contractual cash-flow payments that the seller can transfer to another party, which is essential in an OBS facility.

Power Africa aims to achieve 30,000 megawatts of new generated power, create 60 million new electrical connections, and reach 300 million Africans by 2030.

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