INNOVATIONS IN ASSET FINANCE
Unlocking the potential for low-income customers
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Asset finance offers donors and investors a potentially scalable approach to advancing several SDGs.
Assets and the SDGs: What’s the connection?

A growing body of evidence suggests that assets help poor people **capture opportunities** and **become resilient**, with effects that advance several Sustainable Development Goals.
Evidence supports a theory of change for asset ownership

Evidence suggests that asset ownership can help build . . .

- **Financial resources**: Income generation, store of value
- **Human capabilities**: Access to info, social capital, education, improved well-being
- **Physical capabilities**: Access to markets, basic services, shelter/safety, nutrition
Productive assets like livestock can help households build financial resources, for example, by allowing them to increase and diversify their incomes. In Bangladesh, ultra-poor women who were given cows increased their incomes by 37%, while per capital household expenditure increased by 10%.

Source: Bandiera, et al. 2017
Expanding access to information is one way assets improve human capabilities. In Niger, agricultural traders who adopted mobile phones were able to obtain prices more quickly and from more markets, decreasing price dispersion by as much as 10 to 16%.

Source: Aker 2010
Assets support physical capabilities

Improved health outcomes are one way that assets support physical capabilities. A study in Uganda found that households that financed solar home systems reported **9 percentage points** lower incidence of coughing at home and a near complete elimination of fires and burns from lighting sources.

Source: Chen, et al. 2017
Financing is key to promoting asset ownership at scale

- Asset transfer programs have demonstrated enormous impact but are expensive, require effective targeting, and may face obstacles to scale (Banerjee et al. 2015).
- With the SDGs facing an estimated annual investment gap of $2.5 trillion, financing offers a more sustainable alternative to transfers, with the potential to drive asset ownership at scale.
- But the terms of traditional microfinance loans often are poorly suited to financing assets. More specialized asset finance products like leasing have struggled to reach low-income households.
- New innovations in asset finance business models promise to overcome challenges to reaching low-income households, with products tailored to the asset being financed and needs of diverse customer segments.
Inclusive asset finance must emphasize core principles of consumer protection in financial services, such as transparency, fair treatment, and effective recourse.

Asset finance products also pose specific risks to consumers:

- **High prices.** The cost of financing can be high, with customers sometimes paying 2 or 3 times an asset’s retail value.
- **Lack of transparency.** Pricing of asset finance products can be opaque. Customers may see only the full price being charged and installments due, but may be unaware of the true cost of financing. The terms also may lack transparency, with customers who don’t understand that they risk repossession and may lose equity in their asset if they fall behind on payments.
- **Unreliability.** Assets can break down, leaving customers liable for repayment but unable to benefit from their asset.
- **Perverse incentives.** Because financing allows providers to sell to customers who otherwise would be unable to afford their products, the incentive to drive sales volumes may lead them to push financing on and approve customers who cannot sustainably service the debt.
Responsible asset finance requires steps to protect customers - 2

- Given the unique risks of asset finance, stakeholders should promote tailored approaches to consumer protection. For example, the principles developed by the Global Off-Grid Lighting Association (GOGLA), the industry group for pay-as-you-go solar home system providers, include:
  - Transparency
  - Responsible sales and pricing
  - Good consumer service
  - Good product quality
  - Data privacy
  - Fair and respectful treatment
Recognizing the opportunity to expand asset ownership, asset finance providers are deploying innovative business models that promise to overcome obstacles to serving low-income customers.
Asset finance providers face obstacles to serving low-income customers

• In-demand assets can be unreliable or hard to find—especially in rural areas.
• Cost of financing operations and small ticket size.
• Low value of assets, depreciation, difficulty finding assets, the cost of repossession, and a lack of secondary markets complicate efforts to minimize loss given default.
• Lack of formal credit histories and unavailability/unaffordability of insurance policies increase risk.
• Providing after-sales service is complex and expensive.
• Poor capacity and lack of access to markets prevent customers from maximizing income generation from assets and increases repayment risk.
But providers are finding solutions to overcome these obstacles

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<th>Obstacles to serving low-income customers</th>
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<td><strong>Unreliable and hard-to-find assets</strong></td>
<td>• <strong>Specialized assets.</strong> Companies sourcing or designing and manufacturing low-cost, reliable assets tailored to the needs of low-income consumers.</td>
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| **Cost of small ticket loans**           | • **Digital credit.** Instant, automated, and remote credit decisions remove the need for in-person applications with a financial services provider.  
  • **Digital payments.** Reduce cost and improve speed of collections, allow customers to pay anytime, anywhere.  
  • **Agent networks.** Reduce cost of origination, distribution, and maintenance by offering proximity to customers without investing in a full branch/outlet. |
| **Minimizing loss given default**        | • **Remote lock.** Offers lenders security by allowing them to turn off assets remotely in event of non-payment.  
  • **GPS (global positioning system).** Facilitates repossession by tracking asset location. |
| **Risk**                                 | • **Alternative credit scoring.** New credit scoring methodologies allow providers to analyze customer creditworthiness using alternative data.  
  • **Collateral registries.** Countries are increasingly creating collateral registries that allow lenders to secure loans by using the asset as collateral.  
  • **Microinsurance.** Technologies like remote sensing, RFID chips, and digital payments reduce cost and moral hazard, allowing lenders to reduce risk by taking out policies on both borrowers and their assets. |
| **Complexity/cost of after-sales service** | • **Remote sensing.** Providers monitor asset health and use to anticipate and quickly remedy maintenance issues. |
| **Poor customer capacity and lack of access to markets** | • **Capacity building.** Offering training on how to use assets, business skills, and financial literacy increases the likelihood of repayment.  
  • **Market making.** Connects idle assets with demand to maximize use and cash flows. |
These solutions allow providers to build more inclusive business models.
The right business model depends on the type of asset being financed

**Productive assets.** Because *productive assets* (e.g., farm equipment) generate income, they offer additional security to lenders when financing customers with little credit history.

**Quality-of-life-enhancing assets.** These assets (e.g., refrigerators) do not generate income that can improve customer ability to repay. Financing may require additional data on customer creditworthiness and/or use of the asset as collateral.

**Low-value/depreciating assets.** Assets that are low in value (e.g., solar home systems) or depreciate rapidly (e.g., smartphones) pose particular challenges to lenders. Lower value/rapidly depreciating assets are more difficult to use as collateral given the high cost of repossession/low resale value. Therefore, financing may be short term, unsecured, and reliant on data to determine creditworthiness.

**High-value assets.** When lending for higher value assets, providers need to take additional measures to mitigate risk. This may include a more stringent underwriting process, a focus on assets that generate income and support ability to repay, and/or the ability to repossess and redeploy assets in the event of default. The high cost of some assets may also put ownership out of reach for low-income customers, even when financing is offered.
Mapping business models to asset characteristics

**Pay-as-you-go** financing is a type of lease that features flexible payments tied to use. It relies on the ability to lock the asset remotely. The lock reduces the need to repossess and resell assets, making it well-suited for low-value or rapidly depreciating quality-of-life-enhancing assets.

**Asset-as-a-service** is a rental-based model that allows customers to pay for the use of an asset without building equity or obtaining ownership. The model relies on the ability to lock assets remotely and typically is used for lower-value, quality-of-life-enhancing assets.

**Buy now, pay later** allows customers to be instantly approved to purchase an asset on credit at the point of sale. Financing is unsecured, requiring data to score customers and predict repayment. Typically used for lower-value quality-of-life-enhancing consumer durables like TVs and refrigerators.

**Microleasebacks** allow customers who have paid off leases to borrow against their equity in the asset. The use of remote locking technology enables leasebacks to be used for low-value, rapidly depreciating quality-of-life-enhancing assets.

**Rent-to-own** is a type of lease that allows customers to acquire ownership of an asset by making a down payment and paying off the remaining cost over a fixed period of time. Providers serving low-income customers typically use this model for higher-value productive assets that support ability to repay and can be physically repossessed and redeployed in event of nonpayment.

**Asset-backed lending** uses the asset being financed as collateral for the loan. Like rent-to-own, this makes it more suitable for higher value productive assets, but because ownership is immediately transferred to the borrower, it requires collateral registries to facilitate repossession.

**Digital marketplaces** provide access to on-demand rentals by connecting owners of idle assets such as cars, motorbikes, and tractors to customers who pay for their use. The model is well-suited to high-value and often productive assets that are too expensive for low-income customers to purchase or finance.
A review of global examples reveals how asset finance providers are leveraging emerging business models to drive asset ownership among low-income households.
BUSINESS MODEL: Pay as You Go

HOW IT WORKS
Pay-as-you-go (PAYGo) financing is a type of lease that features **flexible payments tied to use**. A combination of **remote locking and digital payments** allows the lender to **shut off the asset** in the event of nonpayment. When customers make a payment, the asset is instantly reactivated for a fixed period of time. Customers do not incur late fees or penalties. They obtain ownership after paying the full cost of the lease. Shutting off a productive asset can reduce ability to repay, so it is potentially **better suited for quality-of-life-enhancing assets**. Typically used for **low-value assets** for which repossession is not economical.

WHAT MAKES THIS MORE INCLUSIVE?
Tying payments directly to use and eliminating late fees and penalties provides flexibility for customers facing shocks or dealing with unpredictable cash flows. The lock also enables financing for low-value/rapidly depreciating assets that poor customers want but that providers would not otherwise finance due to economics of repossession.

A customer in Senegal with a PAYGo smartphone. In Senegal, PayJoy licenses its locking technology to partner Baobab+, allowing the solar home system provider to offer PAYGo smartphone financing. Photo credit: PayJoy
GLOBAL EXAMPLES: Pay as You Go

PayJoy first launched its smartphone financing service in Mexico and the United States, before expanding to Asia and Africa. Its proprietary locking technology allows it and its partners to extend PAYGo financing to customers with no credit histories, despite low initial asset value, rapid depreciation, and the difficulty of repossession. In some markets, PayJoy also uses a proprietary scoring algorithm to determine customer creditworthiness even in the absence of formal histories.

M-Kopa is one of the first off-grid solar companies to offer PAYGo financing. Today, it sells not only solar home systems, but also TVs, refrigerators, and other assets that can run on solar energy. Like the solar home system, these other assets tie payments to use, with the solar home system shut off in the event of nonpayment.

Kopa Gas uses a smart meter to provide clean cooking solutions to customers in Tanzania who struggle to afford the upfront costs of switching from charcoal to liquid petroleum gas. The smart meter allows customers to digitally prepay only for the gas they use, rather than purchasing an entire cylinder and cookstove upfront. Once customers have used up their credit, the meter locks, and customers must add more credit to unlock the device.
BUSINESS MODEL: Asset as a Service

HOW IT WORKS
The asset-as-a-service model is similar to the PAYGo model in that payments for an asset are tied to use. But in this case, customers do not build equity or obtain ownership. When the customer stops paying, access to the asset is revoked remotely (remote locking). The provider is responsible for ensuring that the asset is in good working condition and that it is replaced at the end of its useful life.

WHAT MAKES THIS MORE INCLUSIVE?
Paying for an asset as a service provides a flexible way for customers to benefit from an asset without needing to purchase it outright, worry about missed debt payments, or deal with breakdowns and depreciation.

An Energryn customer in Mexico shows off a newly installed solar water heater. Millions of Mexicans lack access to energy for cooking, lighting, heating, and entertainment. Energryn offers solar solutions to these households, enabling them to pay a subscription fee for use of valuable assets like solar water heaters. Photo credit: Energryn
GLOBAL EXAMPLES: **Assets as a Service**

**Energryn** customers in Mexico can prepay for services like hot water, rain water collection, and water purification. Energryn installs solar-powered equipment at the customer’s home. Customers go to a participating outlet to prepay and receive a code that they can use to activate the device. If a customer fails to pay their weekly or semi-monthly bill, the device is switched off remotely.

**Kytabu’s** digital platform allows students to rent electronic copies of textbooks for as little as one day at a time using mobile money. The platform allows students who would otherwise struggle to pay upfront for expensive textbooks to pay for only what they use.
BUSINESS MODEL: Buy now, pay later

HOW IT WORKS

Buy now, pay later allows customers to be instantly approved to purchase an asset on credit at the point of sale. The model is well-adapted to financing lower value, quality-of-life-enhancing assets.

WHAT MAKES THIS MORE INCLUSIVE?

By extending credit to poor and rural customers at the point of sale, buy now, pay later models are expanding access to consumer durables like appliances and TVs. Providers may rely on agent networks to bring their products to rural customers. In some cases, models incorporate alternative credit scoring to assess customers with no credit histories and/or digital payments to reduce the cost of collections.

A Boonbox customer in India receives a delivery. The rural e-commerce company partners with microfinance institutions to offer rural customers the option to purchase household goods on credit. Photo credit: Inthree Access
Dharma Life works with a network of rural entrepreneurs in India to sell solar lamps, clean cookstoves, water purification systems, and other assets. It finances entrepreneurs with working capital loans, in turn, the entrepreneurs provide purchase financing to customers at the point of sale. Dharma Life ensures delivery of assets and provides after-sales services. It also plans to introduce a micro life insurance product to reduce risk of default in the event of borrower death.

Rural e-commerce service Boonbox partners with financial institutions to provide rural customers the ability to purchase TVs, air conditioners, washing machines, etc. Loan officers and banking correspondents (agents) use the Boonbox app to show customers a curated selection of assets, take orders, and originate loans. Boonbox delivers the products and provides after-sales services. Partner microfinance institution (MFI) KGFS is exploring the use of a new digital app to estimate customer cash flows and instantly approve customers for loans. It also is looking at microinsurance to cover borrowers during catastrophic events and is working on an electronic registry to allow customers to collateralize moveable assets to secure financing.
BUSINESS MODEL: Microleaseback

HOW IT WORKS
Microleasebacks use remote locking to allow customers who have paid off leases for low-value, depreciated assets such as solar home systems or smartphones to borrow against their equity in the asset. Similar to the original lease, the asset is locked in the event of nonpayment.

WHAT MAKES THIS MORE INCLUSIVE?
The ability to lock assets remotely in the event of missed payments allows providers to rely on the value a customer places in their asset to secure lending. This means that even assets that do not retain value over time (e.g., smartphones) can be used to unlock financing, providing low-income customers with access to loans for school fees, agricultural inputs, or even consumption smoothing.

Ugandan students do homework under light provided by a Fenix solar home system. Poor households often struggle to pay for education expenses, so Fenix offers its customers the option to re-lease their solar home systems in exchange for a cash loan that can be used for education. Photo credit: Fenix International
GLOBAL EXAMPLES: Microleaseback – 1

For customers of PAYGo solar provider Fenix International in Uganda, education represents a significant expense. A family spends a reported average of $110 per primary student and $236 per secondary student annually. Most Fenix customers are smallholder farmers with seasonal cash flows, meaning that finding money to pay school fees during certain school terms is difficult.

Recognizing a need for education financing to smooth expenses and ensure school attendance, Fenix piloted a product that allows customers to borrow for school fees using the equity in their solar home system. The households repay the loan using the same PAYGo approach, with their lights shut off in the event of nonpayment.

PayJoy’s PayJoy Cash is available in several markets. The product allows customers who have completed their smartphone payments to recollateralize their phones in exchange for a cash loan. When customers take out a PayJoy Cash loan, their phones are relocked and like the original PAYGo financing, each repayment provides 30 days of use.
GLOBAL EXAMPLES: Microleaseback – 2

Nacional Monte de Piedad has served customers in Mexico since 1775. It offers cash loans to customers who leave valuables such as gold, watches, sewing machines, etc., with the provider as collateral. Similar to a pawn shop, it provides its 2.5 million customers with average loans of 2,500 pesos (~US$130). But with new technologies like the internet of things (IoT), it is exploring new models. For the past two years, it has been offering a new leaseback product for vehicles. Whereas in the past, borrowers were asked to surrender the vehicle until the loan is repaid, now the provider installs a GPS tracker and a kill switch and allows borrowers to continue to use their vehicles as they repay their loan. If a customer defaults, the provider shuts off the car and quickly locates and repossesses it. The provider is looking into similar IoT-enabled products for assets beyond vehicles. “The future will belong to whoever can bring together financing and IoT,” explains Daniel Sanchez Ducoing, director of Planning.
**BUSINESS MODEL:** Rent to own

**HOW IT WORKS**
A rent-to-own lease allows customers to **acquire ownership** of an asset by making a down payment and paying off the remaining cost **over a fixed period of time**. The model can be used for **both productive and quality-of-life-enhancing assets**. Because the ability to repossess an asset in the event of default is an important feature of the model, it generally is **not suitable for low-value assets or assets that depreciate rapidly**.

**WHAT MAKES THIS MORE INCLUSIVE?**
The rent-to-own model is not new, but new solutions are allowing it reach many low-income customers for the first time. These include remote monitoring of assets, business models built around specialized assets, and capacity building programs that increase ability to repay. Rent-to-own leases are more flexible than loans and may allow borrowers to purchase or return the asset at any time during the loan period.

A SunCulture technician demonstrates the use of a sprinkler irrigation system. SunCulture finances solar-powered water pumps and irrigation systems that cost less to operate and maintain than diesel pumps. Photo credit: SunCulture
GLOBAL EXAMPLES: Rent to own

**Tugende** leases “drive-to-own” boda bodas, or motorcycle taxis, to drivers in Uganda. It claims that after drivers complete their lease payments and own the vehicle, they double their take-home earnings compared to renting through a landlord (Tugende 2019). The model relies on GPS tracking to repossess bikes in the event of default. It also provides business training to all borrowers to ensure they can maximize their incomes.

**Rent-to-own Zambia** leases farm equipment and business assets, such as deep freezers, for microentrepreneurs. Once customers complete their payments, they assume ownership of the asset. The company relies on high-touch capacity building training for customers, which ensure that borrowers will maximize incomes and be able to meet their regular payments.

**SunCulture** leases solar water pumps using technology similar to that used by PAYGo providers, with the pump remotely shut off in the event of nonpayment. The pumps can be used for irrigating fields or drawing water for household consumption. In addition to training borrowers, SunCulture uses sensors to analyze the weather and soil and give guidance on how much to irrigate. It also monitors pump power consumption to determine whether the farmer could benefit from more efficient irrigation methods.

**Gravity** partners with MFIs and distributors to offer customers in Mexico financing for solar home systems, solar water heaters, rain water collection, and water purification. Customers visit the nearest distributor and apply for financing at the point of sale. The application is uploaded to a platform that matches the customer with an MFI that provides the financing. The distributor installs and maintains the equipment and is responsible for repossessing it in the event of default. Remote locking shuts off the device when customers miss a payment. Customers make payments by visiting a participating merchant like Oxxo, where they receive a code they can use to unlock the device. Once the payments are complete, the customer owns the device.
BUSINESS MODEL: Asset-backed lending

HOW IT WORKS
This approach uses the asset as collateral to secure financing. Importantly, it is typically used for higher-value assets that can be repossessed and resold on secondary markets. As a result, the model depends on collateral registries.

WHAT MAKES THIS MORE INCLUSIVE?
Remote sensing technologies like GPS may be used to monitor and track assets. Microinsurance can be bundled into the loan to protect against the risk of damage to the asset or death of the borrower. For productive assets, lenders could provide capacity building programs that teach business skills and train customers on how to use the asset. By addressing high costs, repayment risk, and difficulty of repossession, this business model can reach previously excluded customers.

A customer in India stands with dairy cows she obtained using a loan from Samasta Microfinance. If cows fall ill or die, borrowers are unlikely to repay. So Samasta implants RFID chips in the cows it finances, enabling insurers to identify the animals and allowing Samasta to take out policies that mitigate risk. Photo credit: Samasta Microfinance
GLOBAL EXAMPLES: Asset-backed lending – 1

**Musoni**, based in Kenya, was the first MFI in the world to digitize all payments. It offers loans for assets such as motorbike taxis, using the asset as collateral. Digitization allows agents to onboard customers and originate loans, while GPS is used to track motorbikes and repossess them in the event of default. All borrowers receive business training, which helps to reduce the number of nonperforming loans.

**Shubham**, an Indian housing finance company, offers long-term loans (15-year terms on average) to customers with informal incomes. Loan officers carefully evaluate household cash flows, and loans are secured using the home as collateral. All borrowers must take out property insurance; they also are encouraged to take out health and life coverage.

In India, **Samasta** finances dairy cows, allowing customers to increase their incomes by selling milk. The cows are used as collateral, and the lender requires borrowers to insure the animals. Previously, insurance was not available due to moral hazard, but by introducing RFID chips implanted in cows, insurers are able to accurately identify each animal and verify claims. These insurance policies were key to unlocking financing.
African MFI Juhudi Kilimo also finances dairy cows, using the cows as collateral. It works with the Kenya Cooperative Insurance Company to provide each borrower with a mobile-enabled insurance policy that customers pay for digitally. The policy covers 50–80% of the value of the animal in the event of death. Capacity building is a key component, with borrowers offered training on how to maintain and derive income from their cows.

Accesso Crediticio, based in Peru, offers vehicle financing for taxi drivers. Drivers repay their loans for the natural-gas-powered taxis at the pump, with payments added to what they spend at partner natural gas service stations. The taxis feature remote sensing technology that facilitates repossession in the event of default.

JUMO Drive is a product offered by JUMO in partnership with Uber in Kenya. It allows drivers for the ride hailing service to apply for vehicle financing from participating lenders. The service relies on a credit-scoring algorithm that uses the drivers’ earnings, trips, and behavioral data from the Uber platform to determine creditworthiness. Each loan is tailored to the individual driver, with flexible repayments automatically deducted from driver earnings on the Uber platform. The service includes vehicle tracking for lenders and a maintenance plan to help manage risk.
BUSINESS MODEL: Digital marketplaces

HOW IT WORKS
If a customer cannot afford an asset or needs to use it only during a constrained time period (e.g., planting or harvest), renting it can be an economical alternative to financing. Leveraging remote sensing and digital payments, digital marketplaces connect owners of idle assets such as cars, motorbikes, and tractors to customers who pay for their use.

WHAT MAKES THIS MORE INCLUSIVE?
Previously, the only way to access the benefits of high-value assets like tractors or trucks would be to finance them or purchase them outright, which excludes low-income customers. By allowing customers to pay for use rather than ownership, digital marketplaces open access to assets for which traditional financing would not be viable.
Hello Tractor started out as a tractor financing company, but it quickly realized that many farmers were too small to need a tractor full time. In Sub-Saharan Africa, most agriculture is seasonal, thereby limiting the usefulness of owning expensive machines. In response, the company reoriented itself to providing the technology and platform to connect tractor owners with demand for their services. Farmers request tractor services via the app or booking agents, the tractor owner pairs the request with a tractor and sends the tractor to the farm. Hello Tractor collects data on tractor use to draw on when financing tractor owners.
Donors and investors can help scale high-impact business models. But figuring out what works in asset finance will take the support of funders committed to improving the lives of poor people.
There is an opportunity to scale asset finance. Now What?

- New business models are proving that asset finance can expand asset ownership for low-income households.

- These models are nascent and little is known about their viability at scale.

- Donors and investors should evaluate opportunities to support early stage business models, with a focus on better understanding demand and key drivers of sustainability.

- Funders should take the lead in encouraging the development and adoption of consumer protection frameworks adapted to this new generation of financial services providers.
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