

Vanguard ETF Challenge 2025

Vanguard World Semiconductor ETF (VWS)

Epsilon Investments

By: Connor Whyte, Muhammad Ali,
Abhi Sorari, Tyrin Boyd

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Executive Summary and ETF Overview

Executive Summary

- Global semiconductor market surging from AI, data centers, EVs, and 5G and upcoming 6G in 2030s.
- Market projected to reach **\$700.9B** in 2025 (+11.2% YoY) with continued strong growth.
- H1 2025 revenue: **\$346B** (+18.9% YoY); high capex signals lasting investment cycle.
- Only semiconductor ETF with intentional **5-segment coverage**: Fabless (**35.5%**), IDMs (**29%**), Equipment (**14%**), Foundries (**14%**), Analog (**7.5%**)



ETF Overview

- **ETF Name:** **Vanguard World Semiconductor (VWS)**
- **Objective:** Long-term capital appreciation via investments in core semiconductor companies across the value-chain.
- **Strategy:** Rules-based selection, caps to limit single-name concentration.
- **Target Investors:** Thematic growth investors, advisors, and institutions seeking focused semiconductor exposure.
- **Main risks:** Sector Cyclical, single-name concentration, & Geopolitical Supply-Chain risk.



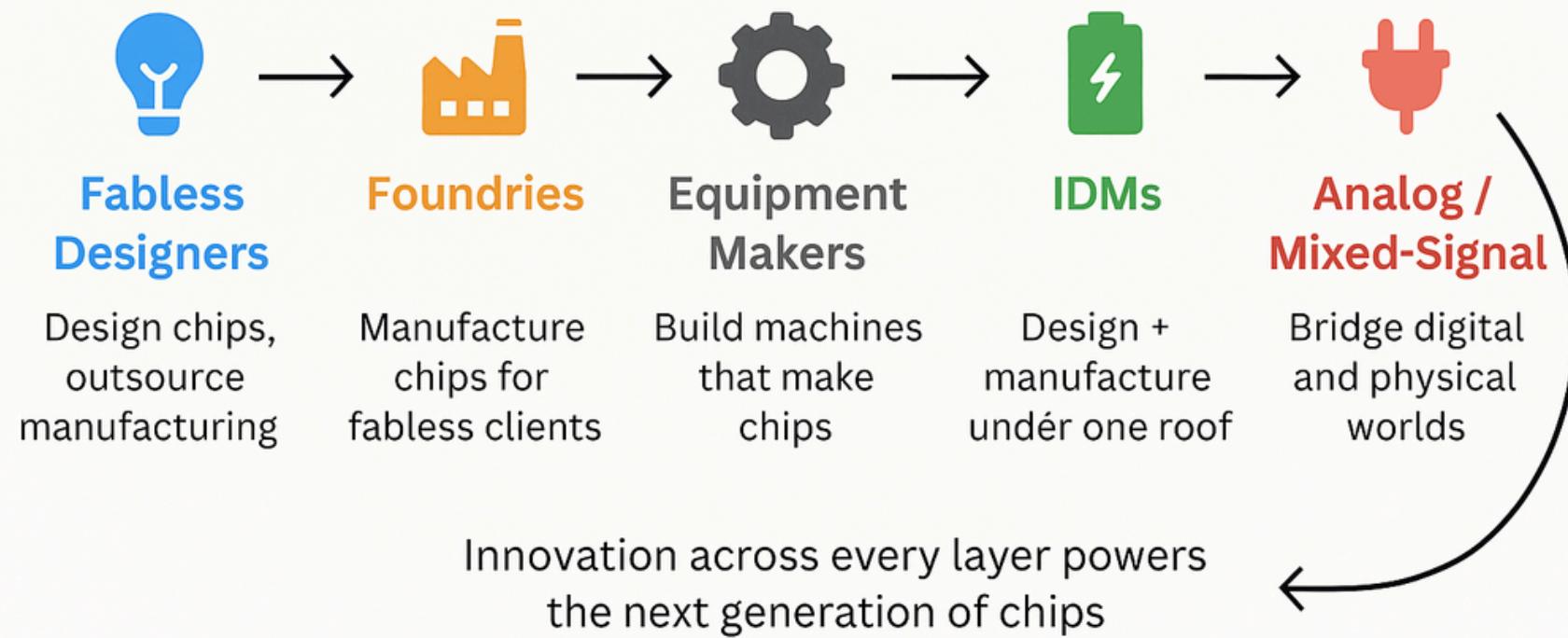
Market Gap: Why VWS ETF?

Coverage	Σ Holdings	Largest Position	Top 10 Weight	Value Chain Coverage	What They Miss
SMH	25-26	NVDA: 18.7-19%	76.4%	Partial: Heavy fabless (NVDA, AMD, AVGO), foundry (TSM), equipment (ASML, AMAT, LRCX), minimal analog	<ul style="list-style-type: none"> ✗ Concentration risk (1 stock = 19 %) ✗ No dedicated analog segment ✗ No mid-cap exposure
SOXX	30-34	AVGO: 7.9% or AMD: 10%	57.5-60%	Partial: Balanced fabless/equipment/IDM but incomplete analog coverage	<ul style="list-style-type: none"> ✗ Limited foundry exposure ✗ No strategic mid-cap layer
XSD(SPDR)	40-50	Largest: 2.8-3.1% (equal-weight)	<25%	Broad but unfocused: Equal-weight across all segments including small-caps	<ul style="list-style-type: none"> ✗ Treats leaders = laggards ✗ High volatility / weak returns
PSI	30	AVGO: 5.9%	~60%	Partial: Focus on "manufacturers" - IDMs and some foundries, limited fabless	<ul style="list-style-type: none"> ✗ Under-weight fabless & equipment ✗ Minimal analog
VWS	14	7-7.5%	72%	COMPLETE: Intentional 5-segment coverage	Fills every gap with capped risk & mid-cap innovation (30 %)

Semiconductor Sectors

The Semiconductor Value Chain

From Design to Deployment - How Chips Are Made



- The semiconductor ecosystem operates as a tightly linked value chain, from design to manufacturing, equipment, and analog integration.
- Each layer adds unique value, and VWS ETF captures exposure across all five, unlike most existing ETFs that focus on only one or two.

Fabless Designers



Fabricators/Foundries



IDMs



Equipment and Materials



Index Design

Industry Exposure:

- **Classified under GICS 4520 (Semiconductors & Semiconductor Equipment) or generates ≥50% revenue from semiconductor activities.**

Market Cap:

- **Market cap ≥ \$1 billion.**

Value Chain Alignment:

- **Company must be categorized into one of the five semiconductor value-chain groups included in the index.**

Segment Classification

- Eligible companies are categorized into 5 semiconductor value-chain groups:

Size-Tier Classification

- Within each segment, companies are sorted into:
- Mega/Large Cap: > \$20B
- Mid Cap: \$2B-\$20B

Ranking & Selection

- Companies are ranked by float-adjusted market cap within each size tier.
- The index selects the Top 10 Mega and Large Caps and Top 4 Mid Caps across segments.

*During each semiannual reconstitution, the index re-runs the full selection methodology and refreshes its constituents, replacing any companies that no longer qualify with the top-ranked eligible mega and large- and mid-cap semiconductor leaders for each sector.

70% Mega and Large-Cap Holdings

- **Consists of the Top 10 mega and large-cap companies**
- **Each receives an equal weight of 7%**

30% Mid-Cap Holdings

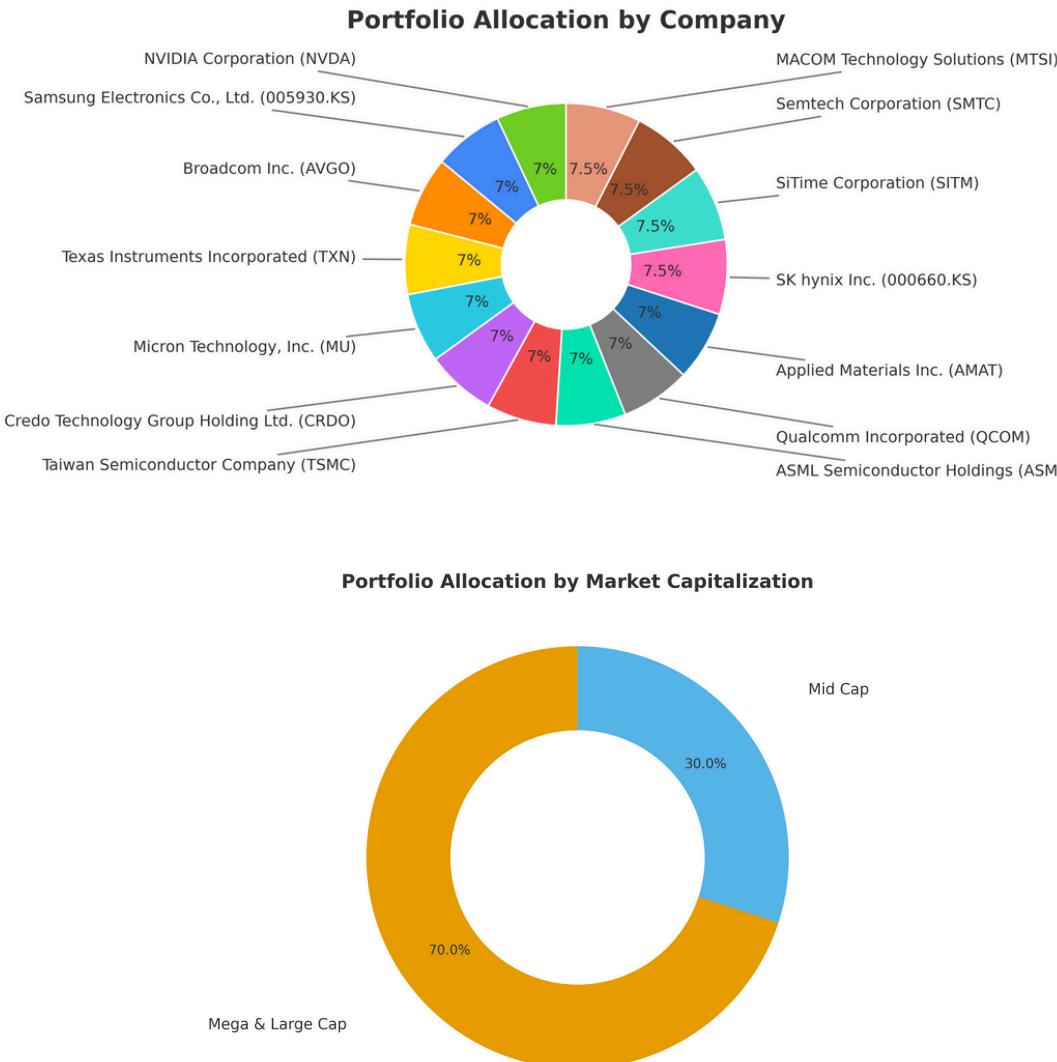
- **Consists of the Top 4 mid-cap companies**
- **Each receives an equal weight of 7.5%**

Quarterly Rebalance

- **Reset weights to maintain 70% mega and large-cap / 30% mid-cap structure**
- **Equal weight within each tier (7% / 7.5%)**

Portfolio Structure

Vanguard World Semiconductor ETF (VWS)



Portfolio Details

Mega and Large Cap Holdings	NVIDIA Corporation, Samsung Electronics Co., Ltd., Broadcom Inc., Texas Instruments Incorporated, Micron Technology, Inc., Credo Technology Group Holding Ltd., Taiwan Semiconductor Company, ASML Semiconductor Holdings, Qualcomm Incorporated, Applied Materials Inc.
Portfolio Share: 70%	
Mid Cap Holdings	
Portfolio Share: 30%	SK Hynix Inc., SiTime Corporation, Semtech Corporation, Macom Technology Solutions

Vanguard World Semiconductor ETF (VWS)

ETF Segments

Fabless – Design-only semiconductor companies

- NVIDIA Corporation (NVDA)
- Broadcom Inc. (AVGO)
- Qualcomm Incorporated (QCOM)
- Credo Technology Group Holding Ltd. (CRDO)
- Semtech Corporation (SMTA)

Total Weight: 35.5%

Fab (Foundry) – Contract chip manufacturers

- Taiwan Semiconductor Company (TSMC)
- Samsung Electronics Co., Ltd. (005930.KS) (Foundry division)

Total Weight: 14%

IDM – Integrated Device Manufacturers

- Texas Instruments Incorporated (TXN)
- Micron Technology, Inc. (MU)
- SK hynix Inc. (000660.KS)
- MACOM Technology Solutions (MTSI)

Total Weight: 29%

Equipment Manufacturing – Semiconductor capital equipment

- ASML Semiconductor Holdings (ASML)
- Applied Materials Inc. (AMAT)

Total Weight: 14%

Analog – Analog & mixed-signal semiconductor designers

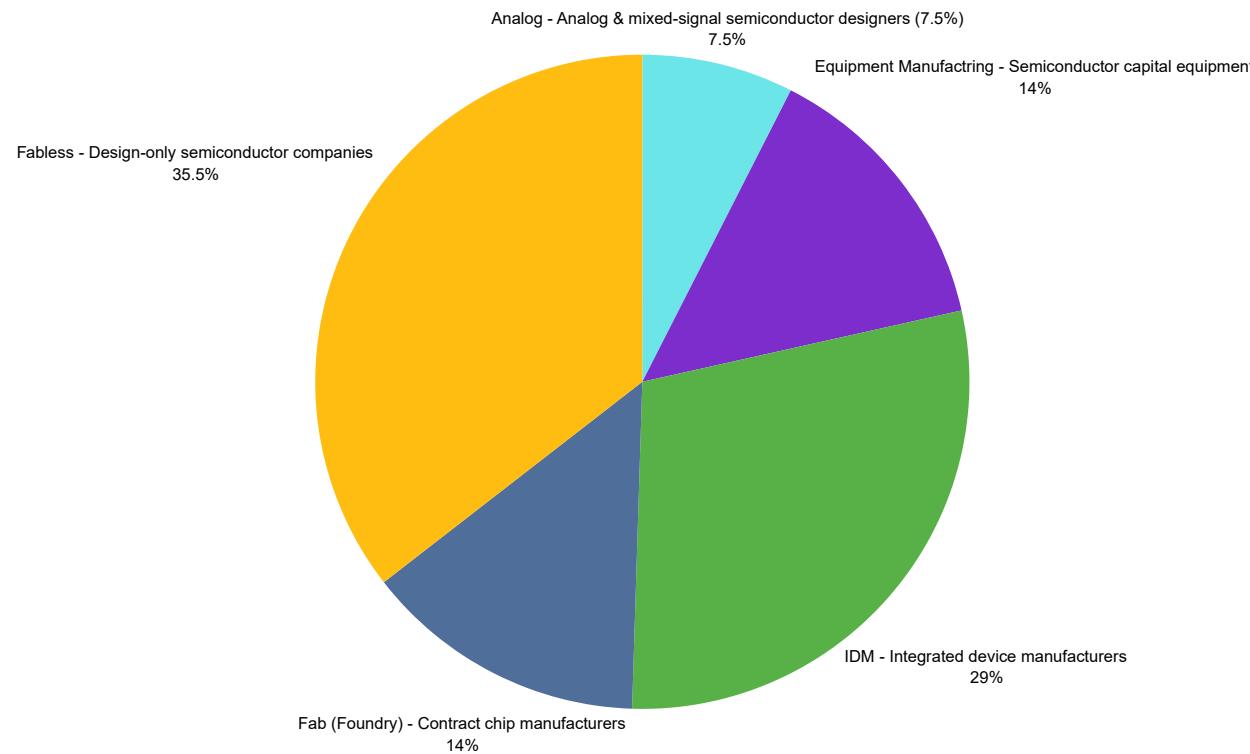
- SiTime Corporation (SITM)

Total Weight: 7.5%

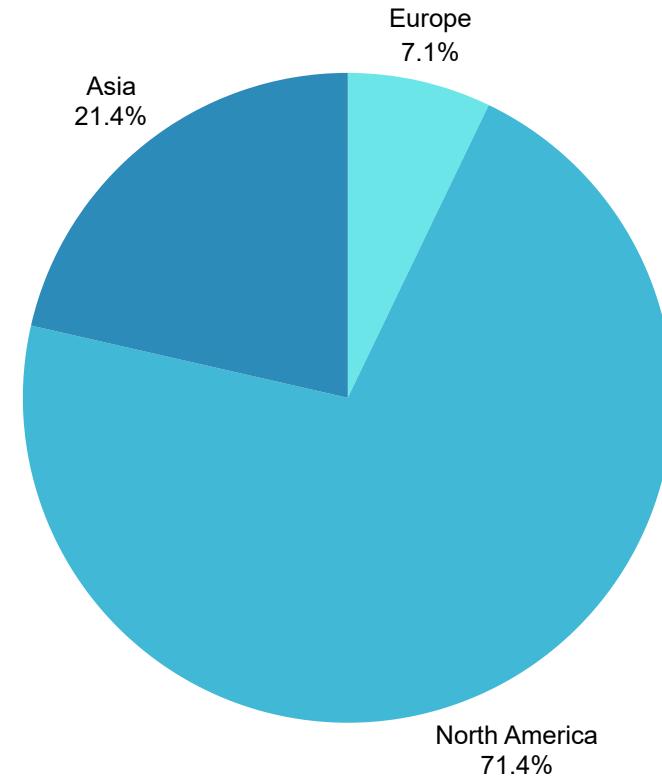
Vanguard World Semiconductor ETF (VWS)

Industry and Global Weights

Weights by Industry



Global Representation



Target Investors

Vanguard World Semiconductor ETF (VWS)

Potential Investors

Narrative Driven ~ Thematic

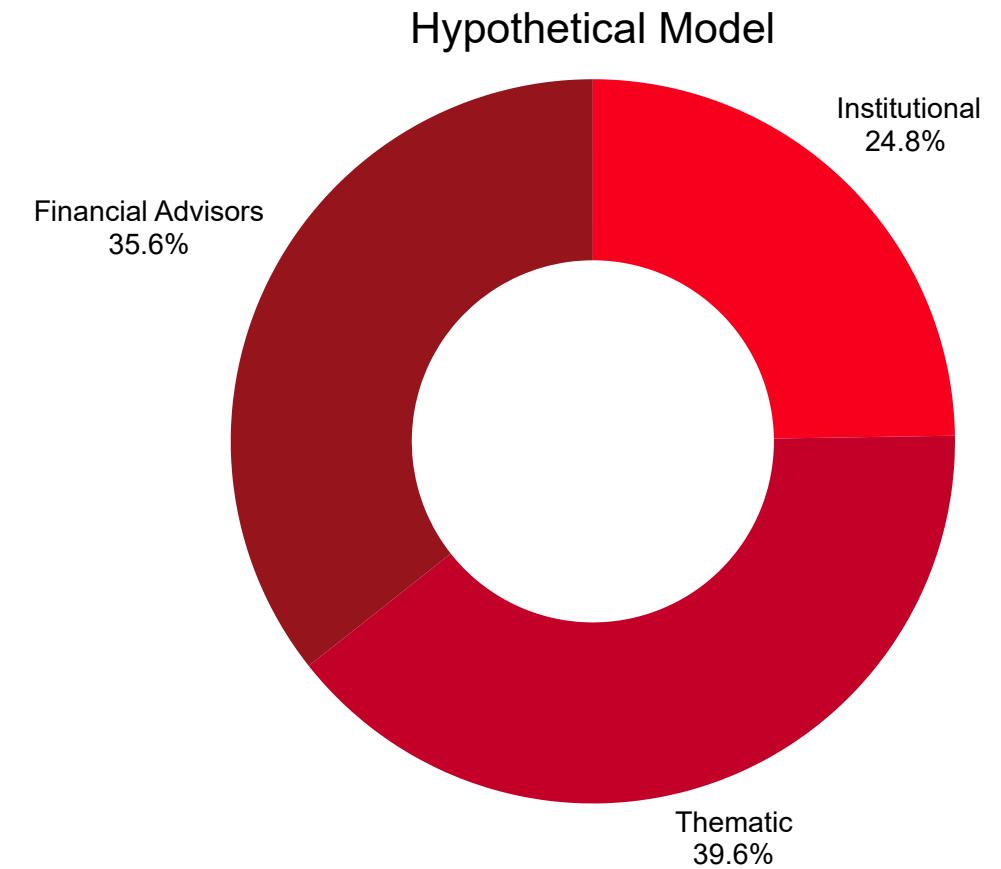
- Trends lead to opportunity
- Global or Market impact
- Long-term holds for profitable exit
- Portfolio build of congruent companies in different sectors
- Attractions to NVIDIA and Qualcomm

Risk Aware ~ Financial Advisors

- A diverse assortment of ETFs is attractive
- One single company does not rule and create imbalances
- 10% Cap with diversity provides “safeguard” for risk management through ecosystem
- 30% 70% split provides calculated growth with the presence of stability

High Growth ~ Institutional

- Attraction to the 30% mid-cap growth opportunity
- Multiple desired stocks can be bought with no need for single buys
- Liquid asset allocation with ease and speed
- Asset Managers, Mutual Funds, Hedge Funds, Public Pension



Thank
You!