An Introduction to Fair Lending Marginal Effects for Financial Institutions

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1 Key Points – Definition & Usage

> "In CFPB underwriting reviews, which typically evaluate potential disparities in denial rates, Bureau economists may rely upon marginal effects, in addition to other methods of analysis, such as odds ratios…"
>
> *Supervisory Highlights, Fall 2015, pp 29-30*

Definition of Marginal Effects

- **Difference in credit decision denial probabilities** between prohibited basis and non-prohibited basis groups of applicants

Why Use Marginal Effects?

- **CFPB Uses Marginal Effects** in their fair lending analyses.
- **Reduces** fair lending risk versus odds ratios
- **Decreases** file review costs due to fewer files to review
- **Alternative analyses:** (1) Permits analysis of different applicant characteristics, (2) Identifies applicants with the greatest fair lending risk and, (3) Allows analyses by products and regions
- **Extension** of regression analysis

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2 Key Points - Example

1

Applicant Risk Factors

Credit Score: ***700***
DTI: ***30%***
LTV: ***80%***

Scenario A (Female Applicant)	Scenario B (Male Applicant)
Predicted Denial Rate ***50%***	Predicted Denial Rate ***20%***

MARGINAL EFFECT:
50% - 20% = 30%

2

Applicant Risk Factors

Credit Score: ***620***
DTI: ***40%***
LTV: ***90%***

Scenario A (Female Applicant)	Scenario B (Male Applicant)
Predicted Denial Rate ***75%***	Predicted Denial Rate ***60%***

MARGINAL EFFECT:
75% - 60% = 15%

Prioritize application review by denied applicants with the ***largest marginal effect***

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3 Advantages of Marginal Effects

Why use Marginal Effects?

1 CFPB uses marginal effects in their fair lending exam analyses

2 Reduce fair lending risks

3 Decrease file review costs

4 Allows for **alternate analyses**:

A **Sensitivity Analysis**
Assesses impact of different applicant characteristics (e.g.. DTI, LTV, credit score) on denial rates

B **Applicant Analysis**
Identifies individual applicants with the largest fair lending denial risk

C **Macro Analysis**
Permits comparisons of fair lending risk across products and geographies (Mortgage vs. Consumer Loans, Branch/ Region1 vs. Branch/Region2)

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4 Contact us to learn more

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