

**EAST WEST BANCORP, INC.**

**Model Risk Management**

**Model vs. Non-Model Assessment Form (MRM-Control01)**

**(CONTROL 1)**

**Version: v03**

# The Model vs. Non-Model Assessment Questionnaires

**To All Potential Model Owners: The ENTIRE “Model vs. Non-Model Assessment Questionnaires” section needs to be filled out by your team.**

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| **Completed by:** | **Nicholas Lawhon** |
| **Completed Date:** | **02/01/2024** |
| **Quantitative Process Name** | **Lexis Nexis Instant ID** |
| **Quantitative Process Description & Objective** | **Objective: *Instruction:*** *Please provide the objective/business purpose of this model*  The Digital Bank uses Lexis Nexis Instant ID to verify identity information for SSN new account onboarding applicants. Lexis Nexis uses High Risk Indicators/CVI (comprehensive verification index) scores to determine whether an identity appears to be legitimate or fraudulent.  **MRM:** LexisNexis® InstantID® InstantID is powered by proprietary modeling, advanced matching logic, and a high-quality collection of public records and proprietary identity data. InstantID compares individual or business information to validate and verify identities. Use its index value and potential risk indicators to help you better know your customers. – *Source: InstantID Analyzing Results.pdf.*  **High Level Description:**   1. Portfolios, Products, and/or Banking Transaction Channels the Quantitative Process Applies to: ***Instruction:*** *Please list the portfolio names and dollar amount (e.g., total commitment amount, total balance amount, etc.) this quantitative process is applied to.*   Lexis Nexis Instant ID applies to SSN Digital New Account Onboarding applications. As of 12/22/23, there were 1,929 active accounts (the number of active consumer accounts whose accounts were created via Digital Banking SSN new account onboarding) with an aggregate balance of $37,632,827.83.   1. In-house Built or Vendor Built *(please provide the vendor’s name and web address)*:   Vendor Built; LexisNexis.   1. Date of First Use and Current Status:   Lexis Nexis was implemented by the Digital Bank in 2018 and is currently still in use today.   1. Input Data: ***Instruction:*** *Please provide high level description of data that are needed to use this process.*   The key input data from an EWB perspective is the applicant information we provide to Lexis Nexis ID for validation – Name, Date of Birth, SSN, Address, and Phone Number.   1. Assumptions and Limitations: ***Instruction:*** *Please* *describe key assumptions and limitations of this quantitative process).*   One assumption is that the Lexis Nexis Instant ID product is actively monitoring new and emerging identity threats and updating their logic as needed.  In terms of limitations, there may be a limitation in terms of the amount of consortium data/data sources being levered by Lexis Nexis Instant ID.   1. Production Environment: ***Instruction:*** *Please describe in what environment this quantitative process is being used (e.g., excel, computer program, or vendor/internal built platforms, etc.).*   The production environment is our Digital Banking new account onboarding flow in Production (Lexis Nexis Instant ID is implemented in the Digital Banking SSN new account onboarding flow in Production, via API calls. Lexis Nexis Instant ID provides the ID verification for SSN applicants wanting to apply for a Digital Banking account.).   1. Output and Usage (e.g., management reporting, regulatory reporting): ***Instruction:*** *Please describe how the quantitative process’ output is used. If there are more than one use, please list and describe all.*   The key output is the response that Lexis Nexis Instant ID returns after interrogating the applicants’ information and risk scoring. Based on the results of the verification an application can either be auto declined, put in a pending status for BSA review, or auto approved. The logic is as follows:  CVI (Comprehensive Verification Index) score of 0,10 = Auto Declined, score of 20, 30, or 40 = Manual Review, score of 50 = Auto Approved   1. Output Impact (e.g., business decision and reputation):   The output impact is ultimately the recommendation based on risk scoring to either auto approve, manually review the application, or auto approve the application.   1. Does this process directly use output of other models as input data?   No – N/A from EWB perspective.   1. Does this process output directly feed into other models?   No, the Instant ID output does not feed into the Actimize model.   1. Please list and provide the model/system/platform related documentation (e.g., methodology documentation, whitepaper, process flow, user’s guide, etc.)  * Instant ID Reference Guide.pdf * InstantID Analyzing Results.pdf |
| **Quantitative Process Owner & Business Group** | **Centralized Operations Administration** |
| **Quantitative Process Users & Business Group** | **Legacy EWB & Digital Banking** |
| **Final Conclusion by MRM** | ***\*Note:*** *The Final Conclusion is completed by MRM only.*  Based on information provided, the LN AML Insight is a model. |
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| **#** | **Model vs. Non-Model Assessment Questions** | **Yes/No Rationales** |
| **Please Note:**   * Model Owners are required to provide detailed rationales with appropriate and adequate supporting information addressing each Yes or No answer for MRM to perform Model vs. Non-Model evaluation. * The final Model vs. Non-Model decision is going to be based on qualitative evaluation of below question responses and associated rationales. | | |
| **1** | **Are one or more input data and/or assumptions inherently uncertain?** | |
|  | * **Guideline for Yes:** The input data and assumptions are inherently uncertain, propagating uncertainty into the output. Some inputs may be inferred by mathematical methods or based on expert judgment. | ***Instruction:*** *Please provide detailed rationale and supporting materials for your Yes or No answer.*  ***Owner:*** *Yes – since ultimately the Lexis Nexis Instant ID rules are making an assumption based on the risk indicators present in the applicant’s data.*  **MRM:** No additional comments. |
| * **Guideline for No:** The “true”, real-world values of the input data and assumptions are known with certainty. |
| **2** | **Does the choice of methodology yield some variation in the results?** | |
|  | * **Guideline for Yes:** Many methodologies can be used to reasonably implement the theory, yielding some variation in the results. The results are not necessarily “correct/incorrect” but rather “better/worse” based on expert judgment and performance. Benchmarking results are comparable but not exactly the same. | ***Instruction:*** *Please provide detailed rationale and supporting materials for your Yes or No answer.*  ***Owner:*** *Yes – similar to the response for #1 – there is the possibility that different methodologies could warrant different results.*  **MRM:** No additional comments. |
| * **Guideline for No:** The arithmetic calculation is objectively “correct” and precise regardless of the methodology used because there is only one generally accepted answer. |
| **3** | **Are mathematical theories such as behavioral, probabilistic, statistical, or fuzzy logic used to quantify uncertainty?** | |
|  | * **Guideline for Yes:** Behavioral, probabilistic, statistical, or fuzzy logic theories are used on top of the arithmetic calculations to measure, analyze, or simulate uncertainty. Models are generally trying to solve complicated problems without an exact solution. | ***Instruction:*** *Please provide detailed rationale and supporting materials for your Yes or No answer.*  ***Owner:*** *My assumption is yes.*    **MRM:** No additional comments. |
| * **Guideline for No:** Complex mathematical theories are not used to quantify uncertainty in the calculations. |
| **4** | **Are businesses rules used that require ongoing optimization or calibration?** | |
|  | * **Guideline for Yes:** Business rules are used that require optimization or calibration in order to fine tune performance on an ongoing basis. | ***Instruction:*** *Please provide detailed rationale and supporting materials for your Yes or No answer.*  ***Owner:*** *Yes – the Instant ID rules are managed by Lexis Nexis.*  **MRM:** No additional comments. |
| * **Guideline for No:** Data is simply recast by aggregating, mapping, or categorizing using objective business rules. |
| **5** | **Is the output a forward-looking forecast and can be back-tested?** | |
|  | * **Guideline for Yes:** If the output is a forward-looking forecast and implies a level of uncertainty about the outputs, it qualifies as a “quantitative estimate”. Back-testing can be used to gauge the model performance by comparing the model forecast against actual historical outcomes. | ***Instruction:*** *Please provide detailed rationale and supporting materials for your Yes or No answer.*    ***Owner:*** *Yes – since Lexis Nexis Instant ID is returning risk results/recommendations that indicate the likelihood of the identity information for an applicant is deemed high risk.*  **MRM:** No additional comments. |
| * **Guideline for No:** The output is not a forecast and there is little or no uncertainty; it generates defined arithmetic results with “right” or “wrong” answer if different arithmetic methodologies used; in addition, back-testing would not generate any particular value. |

**Below please find supplemental information MRM would like to share with your team regarding the Model vs Non-Model Assessment process. Please note that these are for your information only.**

# Appendix 1. Overview of the Assessment

The **Model vs. Non-Model Assessment Process (MRM-Control01)** described in this document is to support the Model Owners in the effort of analyzing and categorizing quantitative processes as Model or Non-Model. It is intended to establish operating process and standard guidelines to fulfill actions necessary to execute and support requirements outlined in the Model Risk Management (MRM) Policy (MRM-PnP01) and Procedures (MRM-PnP02). Instructions and guidelines in this document are applicable to and required for all East West Bancorp, Inc., East West Bank (U.S.), Hong Kong, and China’s (collectively, “EWB” or “Bank”) quantitative processes.

This Model vs. Non-Model Assessment Process supports the enterprise-wide MRM Framework and is not intended to replace any entity procedures (e.g., the Greater China).

# Appendix 2. Description of the Model vs. Non-Model Assessment (CONTROL 1) Methodology

## The Model vs. Non-Model Assessment Categories

The Model vs. Non-Model Assessment is categorized in three areas:

1. **The Information Input Component (Inputs) –** Delivers specific assumptions, theories, and data to the quantitative estimation process

* Data Inputs
* Assumptions
* Scenarios

1. **The Processing Component (Analytical Techniques) –** Transforms inputs into quantitative estimates

* Statistical Theories
* Economic Theories
* Financial Theories
* Mathematical Theories

1. **The Reporting Component (Quantitative Estimation Report) –** Translates the quantitative estimates into useful business information for decision making

* Forecasting
* Estimation
* Management Decision Support

**Definition of a Model per SR 11-7:**

“… the term model refers to a quantitative method, system, or approach that applies statistical, economic, financial, or mathematical theories, techniques, and assumptions to process input data into quantitative estimates.”

**“A model consists of three components:**

* an information input component, which delivers assumptions and data to the model;
* a processing component, which transforms inputs into estimates; and
* a reporting component, which translates the estimates into useful business information.”

Models meeting this definition might be used for analyzing business strategies, informing business decisions, identifying and measuring risks, valuing exposures, instruments or positions, conducting stress testing, assessing adequacy of capital, managing client assets, measuring compliance with internal limits, maintaining the formal control apparatus of the bank, or meeting financial or regulatory reporting requirements and issuing public disclosures. The definition of model also covers quantitative approaches whose inputs are partially or wholly qualitative or based on expert judgment, provided that the output is quantitative in nature.”

## The Model vs. Non-Model Assessment Steps

Steps used for Model vs. Non-Model identification and assessment are:

* **Step 1:** Owners or Users of quantitative processes (refer to MRM Policy, MRM-PnP01 and MRM Procedure, MRM-PnP02 Roles and Responsibilities) are required to proactively submit a designated form, The MRM Model vs. Non-Model Assessment Form, to MRM to perform a “Model vs. Non-Model” assessment and determine whether the quantitative process is a model as defined in the Policy.
* **Step 2:** The MRM group will review submitted information and viewpoints of the Owner/User before making final determination of whether the quantitative process is a model. MRM will communicate with the Owner/User of the quantitative process classification results.
* **Step 3:** Should it be a model, MRM will work with the Owner/User to obtain additional required information for entering it into the **MRM** **Model Inventory** with information such as, model owner, business segments the model is applied to and each business use of the model.

# Appendix 3. Overview of the MRM Framework

The MRM Framework is comprised of the 11-controls for managing model risk at the Bank. These controls align with various stages of a model’s end-to-end lifecycle. This Model vs. Non-Model Assessment Process addresses **Control 1: Model Identification**.

**End-to-End Model Lifecycle and Model Risk Management Framework**

**Model Life Cycle**

**Model Risk Management Framework Controls**

**CONTROL 9**

**Ongoing Model Performance & Risk Monitoring**

**CONTROL 10**

**Model Change Management**

**CONTROL 8**

**Model Production Usage**

**CONTROL 6**

**Independent Model Validation**

**CONTROL 7**

**Model Approval for Production**

**CONTROL 1**

**Model Identification & Enterprise-wide Model Inventory**

**CONTROL 2**

**Model Inherent Risk Rating**

**CONTROL 3**

**Model Development**

**CONTROL 4**

**Model Production Implementation**

**CONTROL 5**

**Model Methodology, Production Implementation & Data Quality Assessment Documentation**

**CONTROL 11**

**Model Governance (Policy, Procedures, Guidelines and Templates) & Risk Reporting**

# MRM Control 1 Assessment Form Change Log

***Please Note:*** *This assessment form will only be revised when needed. However, the form is being evaluated when is in use for potential enhancement.*

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| **#** | **Doc. Version** | **High Level Change Description** | **Doc. Change Date** | **Section Changed** |
| 1 | v01 | First version | 10/31/2018 | All |
| 2 | v01 | Minor format update | 09/03/2020 | Throughout |
| 3 | v02 | Added SR 11-7 model definition in section C. | 03/03/2022 | Section C |
| 4 | v03 | Re-ordered the assessment form; no change on content | 01/11/2023 | Throughout |
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