**INTERNATIONAL MONETARY FUND**

**IMF Institute for Capacity Development (ICD)**

**Joint Vienna Institute (JVI)**

**Course on Vulnerability Diagnostics (JV 17.10)**

Vienna, Austria

April 17-28, 2017

**Program**

### Monday, April 17

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<th>Time</th>
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| 8:30 a.m. – 9:00 a.m. | Administrative Briefing  
Mr. Yuriy Makovetskyy (JVI) |
| 9:00 a.m. – 10:00 a.m. | Opening Session/Initial Test |
| 10:15 a.m. – 12:15 p.m. | L–0  
**Vulnerabilities and Crises**  
Mr. Maksym Ivanyna (JVI)  
1. Theoretical overview  
2. Vulnerabilities and crises  
3. Structure of the course |
| 2:00 p.m. – 5:15 p.m. | Unit 1  
**Forecasting Methods for Tail Risks**  
Mr. Bertrand Candelon (consultant)  
L–1  
1. Defining tail risks  
2. VaR measures of tail risks  
3. Logit/Probit models  
4. The signal approach: threshold methods  
W–1  
Predicting Currency Crises via Probit/Logit Regressions |

### Tuesday, April 18

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| 9:00 a.m. – 12:15 p.m. | Unit 2  
**Fiscal Vulnerabilities I: Assessing Debt Sustainability**  
Mr. Ivanyna  
L–2  
1. Debt sustainability, debt crisis, and growth  
2. Deterministic DSA in closed and open economies  
W–2  
Assessing debt sustainability: debt-stabilizing primary balance, IMF’s approach to DSA |
| 2:00 p.m. – 5:15 p.m. | Unit 3  
**Financial Vulnerabilities I: Taxonomy and Measurement of Financial Risks** |

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1 Unless otherwise stated, coffee breaks will be held from 10:30 a.m.–10:45 a.m. and from 3:30 p.m.–3:45 p.m.
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| 9:00 a.m. – 12:15 p.m. | **Unit 4** | **External Vulnerabilities I: Bond Yields and Sovereign Default Risk**  
Mr. Ivanyna  
L–4  
1. From fiscal distress to external crisis  
2. Theory of sovereign default risk  
3. Assessing risks in practice  
W–4 | Explaining Sovereign Bond Interest Rates |

| 2:00 p.m. – 5:15 p.m. | **Unit 5** | **Financial Vulnerabilities II: Detecting Financial Fragility**  
Ms. Xu  
L–5  
1. Overview of stress testing  
2. Single-factor sensitivity analysis  
3. Identifying stress-testing scenarios: Case study  
W–5 | Bank Stress Test |

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| 9:00 a.m. – 12:15 p.m. | **Unit 6** | **Fiscal Vulnerability II: Short-term risks**  
Mr. Ivanyna  
L–6  
1. Risk-based DSA  
2. Interest rate growth differential and public debt  
3. Refined analysis of growth and interest rate shocks  
W–6 | Risk-based DSA, refined analysis of growth and interest rate shocks |

| 2:00 p.m. – 5:15 p.m. | **Unit 7** | **External Vulnerabilities II: Current Account Imbalances**  
Ms. Xu  
L–7  
1. Current account imbalances  
2. External balance assessment (EBA)  
W–7 | External Balance Assessment (EBA) |

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| 9:00 a.m. – 12:15 p.m. | **Unit 8** | **Financial Vulnerabilities III: Financial Cycles, Business Cycles and Systemic Risk**  
Mr. Candelon |
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| 2:00 p.m. – 5:15 p.m. | **Unit 9** Fiscal Vulnerability III: Stochastic DSA  
*Mr. Ivanyna*  
L–9  
1. Stochastic DSA vs. deterministic DSA  
2. Main steps of stochastic DSA: estimating relationship between DSA inputs, fiscal reaction function, simulations |

**Monday, April 24**

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| 9:00 a.m. – 12:15 p.m. | **Unit 10** External Vulnerability III: Reserve Adequacy  
*Ms. Xu*  
L–10  
1. FX Reserves: definition, composition and trends  
2. Analytics of reserve holdings  
3. Normative assessments of reserve holdings |

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| 2:00 p.m. – 5:15 p.m | **Unit 11** Financial Vulnerability IV: Spillovers and Contagion  
*Mr. Candelon*  
L–11  
1. Indicators of spillovers  
2. Network analysis  
3. Systemic risk measurement: VaR, CoVaR |

**Tuesday, April 25**

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| 9:00 a.m. – 12:15 p.m. | **Unit 12** Fiscal Vulnerabilities IV: Long-term Risks  
*Mr. Ivanyna*  
L–12  
1. Debt level and fiscal space  
2. Fiscal gaps: full account of government assets and liabilities  
3. Medium- and long-term fiscal adjustment needs |

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<th>Time</th>
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| 2:00 p.m. – 3:30 p.m. | **GL** Guest Lecture: April 2017 World Economic Outlook  
*Mr. Bertrand Gruss (IMF)* and *Mr. Weicheng Lian (IMF)* |
| 3:45 p.m. – 5:15 p.m. | **GW** Preparation for Participants’ Presentations |
**Wednesday, April 26**

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| 9:00 a.m. – 12:15 p.m. | **Unit 13** | The IMF’s Vulnerability Exercises  
Mr. Candelon  
L–13  
1. Overview of the VEE  
2. Key indicators and methodologies  
3. Putting it all together  
W-13  
Constructing a Vulnerability Index |
| 2:00 p.m. – 5:15 p.m. | **GW** | Preparation for Participants’ Presentations |

**Thursday, April 27**

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| 9:00 a.m. – 10:30 p.m. | **L-14** | Advanced Topics in Early Warning Systems  
Mr. Candelon  
1. Evaluating EWS  
2. Dynamic discreet choice EWS  
3. Crisis mutation EWS |
| 10:45 a.m. – 12:15 p.m. | **GW** | Preparation for Participants’ Presentations |
| 2:00 p.m. – 3:30 p.m. | **GW** | Preparation for Participants’ Presentations |
| 3:45 p.m. – 5:15 p.m. | **GW** | Case Studies: Participant Presentations |

**Friday, April 28**

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<tr>
<td>9:30 a.m. – 11:00 a.m.</td>
<td><strong>Final Test and Course Evaluation</strong></td>
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<td>11:00 a.m. – 12:00 p.m.</td>
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<td>Closing Session and Presentation of Certificates</td>
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