

Benefits of Trade Finance Instruments for Risk Mitigation and Capital Adequacy

Tashkent, June 17, 2019

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Credit risk in trade finance and the Basel capital frameworks

- I. Credit risk distribution and mitigation in trade finance
- **II.** Basel treatment of funded and unfunded credit exposures

Benefits of unfunded trade finance instruments and ADB support

- **III.** Efficient capital allocation with unfunded trade finance
- **IV. ADB's funded and unfunded trade facilitation**

Annex I: Introduction to the Basel capital frameworks

Annex II: Capital adequacy calculation in five steps per Basel I

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## I. Credit Risk Distribution and Mitigation in Trade Finance

- Banks as intermediaries between contracting parties
- Clean payments
- Documentary collections
- Documentary credit
- Credit risk mitigation: Documentary collections vs. documentary credit
- Funded trade finance: Liquidity, no risk mitigation
- Banks' default rates of trade-related LCs, loans and guarantees



## Banks as Intermediaries Between Contracting Parties

Transaction type	Examples	Routing Payments	Presenting/ Releasing Documents	Assuming Commercial/ Credit Risk
Clean payments	Open account, Pre-payment	~	×	×
Documentary collections	Documents against Payment (DP) or Acceptance (DA)	-	•	×
Documentary credit; Guarantees	Letter of credit (LC), Standy-by LC; Performance bond, General guarantee	~	~	~

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### Clean Payments (1 of 2): Pre-Payment



#### Clean Payments (2 of 2): Open Account (O/A)



### Documentary Collections (1 of 3): D. against Payment



### Documentary Collections (2 of 3): D. against Acceptance



#### Documentary collections (3 of 3): Guaranteed Draft



## Credit Risk Mitigation with Documentary Collections

Counterparty	Impo	orter	Issuing Bank
Type of Incident	Rejects Goods	Defaults	
Risk type	Commercial (Crea	Credit, Country	
Open Account	×	**	n/a
DP	×	~~	n/a
DA	×	**	n/a
Guaranteed DA	×	~	xx

Importe

- Compared to O/A, DA reduces the legal risk associated to enforcing the payment.
- Guarantees facilitate credit from the *Exporter* to the *Importer* by substituting the latter's credit risk
- DP is the safest form of collection for the *Exporter*, while the *Importer* can still reject the goods
- \* International standards on bills of exchange are recognized in most countries, facilitating the legal enforcement of dishonored trade acceptances

## Documentary credit (1 of 3): Unconfirmed Letter of Credit



#### Documentary credit (2 of 3): Confirmed Letter of Credit



#### Documentary credit (3 of 3): Stand-by Letter of Credit



Exporter

## Credit Risk Mitigation with Documentary Credit

Counterparty	Impo	orter	Issuing Bar	nk	Confirming Bank		
Type of Incident	Rejects Goods	Defaults	Defaults	Finds	Discrepancies	Defaults	
Risk type	Commercial (Cred	iit, Country, Legal)	Credit, Country	O	perational	Credit	
Unconfirmed LC	~	$\checkmark$	xx		**	n/a	
Confirmed LC	~	~~	~		xx	×	
Stand-by LC	~	~~	depends **	****		depends **	

- The probability that discrepancies are found (→ possible loss of credit risk protection) increases with the number and complexity of documents examined by bank(s) → higher for commercial LC
- A Stand-by LC minimizes this risk for the Exporter → less defense options for importer.

\*\* Stand-by LCs can be confirmed with little paperwork and, in that case, presented to confirming or issuing bank - a key benefit over (counter) guarantees \*\*\* Documents for stand-by LCs are rarely discrepant, as the beneficiary only needs to state the buyer's default and present a copy of the invoice

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Exporter

### Credit Risk Mitigation: D. Collections vs. D. Credit

Counterparty	Impo	orter	Issuing Bar	וא	Confirming Bank				
Type of Incident	Rejects Goods	Defaults	Defaults	Finds Discrepancies		Defaults			
Risk type	Commercial (Crea	dit, Country, Legal)	Credit, Country	O	perational	Credit			
Open Account	×	**	n/a	n/a		n/a		n/a	
DP	×	$\checkmark\checkmark$	n/a		n/a	n/a			
DA	×	**	n/a		n/a	n/a	orter		
Guaranteed DA	×	~	xx		n/a	n/a	Impo		
Unconfirmed LC	~	$\checkmark\checkmark$	xx		xx	n/a	-		
Confirmed LC	~	$\checkmark\checkmark$	~		xx	×			
Stand-by LC	×	$\checkmark$	depends **		<b>*</b> ***	×			

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#### Funded Trade Finance: Liquidity, No Risk Mitigation



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## Banks' Historical Default Rates of LCs, Loans and Guarantees

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#### Trade Finance, 2013-2016



Source: ICC Trade Register 2017.

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- The process of capital adequacy calculation
- Step 3: Making off-balance sheet items comparable to assets
- Risk profiles and Basel II CCFs of unfunded credit products
- Step 4: Risk-weighting credit risk equivalents and assets

→ Refer to Annexes I and II for more background and details

## The Process of Capital Adequacy Calculation



## Step 3: Making Unfunded TF Exposures Comparable To Assets

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\* "Direct credit substitutes, e.g. general guarantees of indebtedness (including standby letters of credit serving as financial guarantees for loans and securities) and acceptances (including endorsements with the character of acceptances)" (Basel I, Annex 3.2.)

\*\* "e.g. performance bonds, bid bonds, warranties and standby letters of credit related to particular transactions" (Basel I, Annex 3.1.)

## Risk profiles and Basel II CCFs of unfunded credit products



CCFs are determined by Credit Risk (x-Axis) and Payment Risk (y-Axis).

They are a gross but necessary simplification of complex products such as (Stand-by) LCs.

## Step 4: Risk-Weighting Credit Risk Equivalents and Assets



Assumption: The benefiaries of all off-balance sheet exposures are enterprises, not banks

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- Credit conversion factors under Basel I-III and in Uzbekistan
- LCs and stand-by LCs require less capital
- LCs and stand-by LCs can finance larger volumes
- Benefits for capital management

## Credit conversion factors under Basel I-III and in Uzbekistan

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\* Treatment of lending commitments depends on the original (rather than residual) maturity

\*\* e.g. stand-by LCs, performance bonds/ guarantees



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## (Stand-by) LCs Require Less Capital for the Same Volume

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Instrument	Notional / Book Value	x	Credit Conversion Factor	=	Credit Risk Equivalent	$\left  \rightarrow \right $	Risk- Weighted Assets *	→	Capital <i>Required</i> **
LC (short-term)			20%		\$20,000		\$20,000		\$2,000
LC (long-term)			50%		\$50,000		\$50,000		\$5,000
Stand-by LC	\$100,000		50 /0		\$50,000		φ50,000		φ5,000
Gen. Guarantee			100%		\$100,000		¢400.000		
Loan			n/a		n/a		<b>Φ</b> 100,000		\$10,000

\* 100% risk weight for enterprises per Basel I

\*\* Assumption: Minimum Capital Adequacy Ratio is 10%



## LCs Can Finance Larger Volumes with the Same Capital

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Instrument	Available Capital **	→	Risk- Weighted Assets *	→	Credit Risk Equivalent	÷	Credit Conversion Factor	=	Notional / Book Value
LC (short-term)							20%		\$500,000
LC (long-term)					¢100.000		50%		¢200.000
Stand-by LC	\$10,000		\$100,000		<b>\$100,000</b>		50%		<b>\$200,000</b>
Gen. Guarantee	$\begin{array}{ccc}1 & & I\\1 & & I\\1 & & I\end{array}$						100%		¢400.000
Loan					n/a		n/a		<b>\$100,000</b>

\* 100% risk weight for enterprises per Basel I

\*\* Assumption: Minimum Capital Adequacy Ratio is 10%



### **Benefits for Capital Management**

- The following CCFs are applied to trade-related unfunded exposures:
  - > 20% for short-term LCs
  - > 50% for long-term LCs, stand-by LCs, performance guarantees etc.
- This reduces the basis for risk weighting, allowing for:
  - > A more efficient use of issuing and confirming bank's regulatory capital
  - Higher trade finance volumes with a given risk appetite
  - > Compared to loans or non-transaction-specific guarantees, the magnitude of this effect is:
    - Fivefold  $(1 \div 20\% = 5)$  for short-term LCs
    - Twofold (1 ÷ 50% = 2) for long-term LCs and all stand-by LCs, performance guarantees etc.

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- Credit risk in an international trade finance transaction
- Risk weights and ratings for banks under Basel I and II
- Multilateral development banks as guarantors
- ADB's credit guarantee absorbs inter-bank risk
- Partial risk transfer with selected global banks
- Risk relief from the ADB's 0% risk weight
- Key features of ADB's credit guarantees
- ADB's revolving credit facility provides liquidity

## Credit risk in an international trade finance transaction



## Risk Weights and Ratings for Banks under Basel I and II

Basel I		Risk Weights
OECD and domestic banks		209/
Nen OECD henke	borrowing in their own currency or for ≤1 year	2076
NON-OECD DANKS	borrowing in FX or for >1 year	100%

Pacal II			Risk Weights for Long-Term Issuer Ratings									
Daselli		Unrated	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Less					
Based on Sovereign R	ating	100%	20%	50%	1009	%						
Based on Corporate $\leq 3$				50%	150%							
Maturity (in Months)	> 3	50%	20%	Ę	100%							

#### Risk Weights and Ratings for Banks under Basel II

- Risk weights for banks depend on their corporate rating or the applicable sovereign rating
- Banks need to choose one of these approaches and apply it uniformly to all other banks
- International ratings are not binding for domestic exposures in local currency:
  - > Sovereign rating approach: 20% risk weight (RW) even if sovereign is rated A+ or worse
  - Corporate rating approach: 20% RW if rating is AA- per national scale but worse internationally

Racol II		Risk Weights for Long-Term Issuer Ratings									
	Unrated AAA to AA- A+ to A- BBB+ to BBB-				BB+ to B-	Less					
Based on Sovereign R	ating	100%	20%	50%	1009	%					
Based on Corporate Rating and Original Maturity (in Months)≤ 3				50%	150%						
		50%	20%	Ę	50%	100%					

## Multilateral Development Banks as Guarantors

- ADB is a multilateral development bank (MDB)
- **Basel I-III:** Risk weights of obligors can be replaced by those of certain thirdparty guarantors, including the ADB
  - > ADB's credit guarantees can lower the risk weight for inter-bank exposures
- **Basel I:** 20% Risk weight for credit exposures guaranteed by MDBs
  - > ADB can support confirming banks where the issuing bank's risk weight is 100%
- Basel II and III: 0% Risk weight for AAA-rated MDBs
  - > ADB's credit guarantees are attractive for any inter-bank exposure
- Even some **Basel I countries** use **Basel II risk weights** for banks and MDBs
  - Check national regulations on capital adequacy

#### ADB's Credit Guarantee Absorbs Inter-bank Risk



## Effect of ADB's 0%-Risk Weight on Risk-Weighted Assets



#### Partial Risk Transfer with Selected Global Banks



## Risk Relief from the ADB's 0% Risk Weight

Scenario (Confirming Bank's Perspective)	RWA Before	-	Risk Transfer	=	RWA After	$\rightarrow$	Capital Required *
No Risk Transfer	\$100,000		\$0		\$100,000		\$10,000
Credit Guarantee (individual transaction)	\$100,000		\$100,000		\$0		\$0
Credit Guarantee (under RPA)	\$100,000		\$85,000		\$15,000		\$1,500

\* Assumption: Minimum Capital Adequacy Ratio is 10%

## Key Features of ADB's Credit Guarantees

The TFP's credit guarantees mitigate inter-bank risk ....

... via the ADB's zero-risk weight under Basel II and III, ...

... allowing for:

- > A more efficient use of confirming bank's regulatory capital
- > Higher trade finance volumes with issuing banks with a given risk appetite:
  - 6.7 times as large when bundling transactions under RPAs (100 ÷ [10% × 1.5] = 666.7)
  - For individual transactions, constrained only by the ADB's available credit limit

### ADB's Revolving Credit Facility Provides Liquidity



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#### **IV. Questions?**



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#### **Annex I: Introduction to the Basel capital frameworks**

- Capital Adequacy: Security Cushion for Unexpected Loss
- International standard setter for prudential regulation
- Evolution of the Basel Accords
- Elements of Basel I, II and III in Uzbekistan

## Capital Adequacy: Security Cushion for Unexpected Loss



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## Capital Adequacy: Security Cushion for Unexpected Loss

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- The Unexpected Loss is, by definition, unknown
- All we know is: our Security Cushion must exceed it
- And we are able to assess our Risk Exposure
- Hence, the regulator prescribes how to identify and quantify these variables and obliges banks to maintain the relationship between
  - Security Cushion (Numerator) and
  - Risk Exposure (Denominator), i.e. the
  - Capital Adequacy Ratio, above a certain level the Regulatory Minimum
- The Regulatory Minimum represents the regulator's risk appetite



## International Standard Setter for Prudential Regulation



BANK FOR INTERNATIONAL SETTLEMENTS

Oldest international financial organization, founded in 1930 in Basel, Switzerland

Fields of activity:

- Payments:Central bank of central banksResearch:Financial system stabilityRegulation:Policy analysis and dialogue
- → 6 committees issue guidelines, among them the
  Basel Committee on Banking Supervision (BCBS)
  → Developed the Basel Accords (frameworks)



## Evolution of the Basel Accord: Basel I and II

#### 1988: Basel I (1996: Market risk amendment)

- Soundness of banking systems •
- Nationally: Maintain capital cushions as risk buffers
- Internationally: Converge the national capital definitions

#### 2004: Basel II

- Pillar 1• Operational Risk Charge• More risk-sensitive credit risk weights, use of external ratings and internal models
- Pillar 2•Improve banks' risk management practices••Converge the risk buffer definitions of regulators and banks
- Promote market discipline by means of enhanced disclosure requirements for banks Pillar 3

2011-2017: Basel III as reaction of global financial crisis (2007-2009)

### Evolution of the Basel Accord: The three pillars of Basel II



#### Capital adequacy is the first of 3 pillars of Basel II

## Evolution of the Basel Accord: Stages of Basel III

2011: A global regulatory framework for more resilient banks and banking systems

- Tier 1 capital: 'common equity' (CET1) vs. 'additional' (AT1), more deductions
- Tier 2 capital: stricter eligibility criteria, corresponding deduction of investments
- Higher CAR requirements ('buffers') for systemically important banks (SIBs)
- Minimum leverage ratio related to banks' size, non-sensitive to risk weights or models

2013/2014: Net Stable Funding Ratio (NSFR) and Liquidity Coverage Ratio (LCR)

2016: Deduction of G-SIBs' investments in capital instruments (TLAC)

2016/2019: Capital requirements for market risk

2017: Finalizing post-crisis reforms

- Standardized approaches more credit risk-sensitive:
  - Risk weights (e.g. loan-to-value ratio, solvency of bank counterparties)
  - Credit conversion factors (e.g. for lending commitments)
- Leverage ratio buffers for SIBs Internal models: safeguards against model risk

### Elements of Basel I, II and III in Uzbekistan



Uzbekistan has adopted most Basel III elements while still applying Basel I risk weights. It is the country with the strictest rules for capital deductions within the TFP.

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#### Annex II: Capital adequacy calculation in five steps per Basel I

Concept: Adequacy of Security Cushion for Risk Exposure

- 1. Identify eligible regulatory capital components
- 2. Prudential adjustments to capital: Limits and deductions
- 3. Convert off-balance sheet items to credit risk equivalents
- 4. Risk weights for assets and credit risk equivalents
- 5. Calculate capital adequacy ratios

## Concept: Adequacy of Security Cushion for Risk Exposure



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## 1. Identify Eligible Regulatory Capital Components



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## 2. Prudential Adjustments to Capital: Limits and deductions



Goodwill

Limitations on Tier 2 Capital



- Tier 2 ≤ Tier 1
- Subordinated Debt ≤ 50% of Tier 1
- General Loss Provisions ≤ 1.25% of credit RWA

Subtractions from both Tier 1 + 2 Capital\*



 Investments in deposit-taking subsidiaries Regulatory Capital bfc

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\* Treatment under Basel I differs among countries; 50:50 per Basel II; more sophisticated per Basel III

## 3. Convert Off-balance Sheet Items to Credit Risk Equivalents

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\* "Direct credit substitutes, e.g. general guarantees of indebtedness (including standby letters of credit serving as financial guarantees for loans and securities) and acceptances (including endorsements with the character of acceptances)" (Basel I, Annex 3.2.)

\*\* "e.g. performance bonds, bid bonds, warranties and standby letters of credit related to particular transactions" (Basel I, Annex 3.1.)

## 4. Risk Weights for Assets and Credit Risk Equivalents



Assumption: The benefiaries of all off-balance sheet exposures are enterprises, not banks

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## 5. Calculate Capital Adequacy Ratios



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#### Where to find the Basel Accords



Basel Accord	Title	URL
I	International Convergence of Capital Measurement and Capital Standards	https://www.bis.org/publ/bcbsc111.htm
II	International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version	https://www.bis.org/publ/bcbs128.htm
III	International Regulatory Framework for Banks; Basel III: Finalising post-crisis reforms	https://www.bis.org/bcbs/basel3.htm; https://www.bis.org/bcbs/publ/d424.htm