Mitsubishi UFJ Investor Services & Banking (Luxembourg) S.A.

COUNTRY	SUB-CUSTODIAN	LOCAL SUB-CUSTODIAN
ARGENTINA	CITIBANK EUROPE PLC	THE BRANCH OF CITIBANK, N.A. IN THE REPUBLIC OF ARGENTINA
AUSTRALIA	CITIBANK EUROPE PLC	CITIGROUP PTY. LIMITED
AUSTRIA	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
BAHRAIN	CITIBANK EUROPE PLC	CITIBANK, N.A. BAHRAIN BRANCH
BANGLADESH	CITIBANK EUROPE PLC	CITIBANK, N.A. BANGLADESH BRANCH
BELGIUM	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
BENIN	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
BERMUDA	CITIBANK EUROPE PLC	THE HONG KONG & SHANGHAI BANKING CORPORATION LIMITED ACTING THROUGH ITS AGENT, HSBC BANK BERMUDA LIMITED
BOSNIA - HERZEGOVINA: THE FEDERATION OF BOSNIA AND HERZEGOVINA (SARAJEVO)	CITIBANK EUROPE PLC	UNICREDIT BANK D.D. MOSTAR
BOSNIA - HERZEGOVINA: THE REPUBLIKA OF SRPSKA (BANJA LUKA)	CITIBANK EUROPE PLC	UNICREDIT BANK D.D. MOSTAR
BOTSWANA	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK OF BOTSWANA LIMITED
BRAZIL	CITIBANK EUROPE PLC	CITIBANK, N.A. BRAZILIAN BRANCH
BULGARIA	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC, BULGARIA BRANCH
BURKINA FASO	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
CANADA	CITIBANK EUROPE PLC	CITIBANK, N.A., CANADIAN BRANCH
CHILE	CITIBANK EUROPE PLC	BANCO DE CHILE
CHINA	CITIBANK EUROPE PLC	CITIBANK, N.A. HONG KONG BRANCH **(B SHARES)**
CHINA	CITIBANK EUROPE PLC	CITIBANK (CHINA) CO. LTD **(EXCEPT B SHARES)**
COLOMBIA	CITIBANK EUROPE PLC	CITITRUST COLOMBIA S.A. SOCIEDAD FIDUCIARIA



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COUNTRY	SUB-CUSTODIAN	LOCAL SUB-CUSTODIAN
COSTA RICA	CITIBANK EUROPE PLC	BANCO NACIONAL DE COSTA RICA
CROATIA	CITIBANK EUROPE PLC	PRIVREDNA BANKA ZAGREB D.D.
CYPRUS	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC, GREECE BRANCH
CZECH REPUBLIC	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC, ORGANIZACNI SLOZKA
DENMARK	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
EGYPT	CITIBANK EUROPE PLC	CITIBANK, N.A., EGYPT
ESTONIA	CITIBANK EUROPE PLC	SWEDBANK AS
FINLAND	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
FRANCE	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
GEORGIA	CITIBANK EUROPE PLC	JSC BANK OF GEORGIA
GERMANY	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
GHANA	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK OF GHANA PLC
GREECE	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC, GREECE BRANCH
GUINEA-BISSAU	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
HONG KONG	CITIBANK EUROPE PLC	CITIBANK, N.A. HONG KONG BRANCH
HUNGARY	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC HUNGARIAN BRANCH OFFICE
ICELAND	CITIBANK EUROPE PLC	ISLANDSBANKI HF
INDIA	CITIBANK EUROPE PLC	CITIBANK, N.A. MUMBAI BRANCH
INDONESIA	CITIBANK EUROPE PLC	CITIBANK, N.A. JAKARTA BRANCH
IRELAND	CITIBANK EUROPE PLC	CITIBANK IS A DIRECT MEMBER OF EUROCLEAR BANK SA/NV, WHICH IS AN ICSD.
ISRAEL	CITIBANK EUROPE PLC	CITIBANK, N.A. ISRAEL BRANCH
ITALY	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
IVORY COAST	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
JAMAICA	CITIBANK EUROPE PLC	SCOTIA INVESTMENTS JAMAICA LIMITED
JAPAN	CITIBANK EUROPE PLC	MUFG BANK, LTD.

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COUNTRY	SUB-CUSTODIAN	LOCAL SUB-CUSTODIAN
JORDAN	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK, DUBAI INTERNATIONAL FINANCIAL CENTRE BRANCH
KAZAKHSTAN	CITIBANK EUROPE PLC	CITIBANK KAZAKHSTAN JSC
KENYA	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK KENYA LIMITED
KOREA	CITIBANK EUROPE PLC	CITIBANK KOREA INC.
KUWAIT	CITIBANK EUROPE PLC	CITIBANK, N.A. KUWAIT BRANCH
LATVIA	CITIBANK EUROPE PLC	SWEDBANK AS ACTING THROUGH ITS AGENT, SWEDBANK AS
LEBANON	CITIBANK EUROPE PLC	BLOM BANK S.A.L.
LITHUANIA	CITIBANK EUROPE PLC	SWEDBANK AS ACTING THROUGH ITS AGENT, 'SWEDBANK' AB
LUXEMBOURG	UBS LUXEMBOURG S.A.	
MACEDONIA (REPUBLIC OF NORTHERN	CITIBANK EUROPE PLC	RAIFFEISEN BANK INTERNATIONAL AG
MALAYSIA	CITIBANK EUROPE PLC	CITIBANK BERHAD
MALI	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
MALTA	CITIBANK EUROPE PLC	CITIBANK IS A DIRECT MEMBER OF CLEARSTREAM BANKING S.A. , WHICH IS AN ICSD
MAURITIUS	CITIBANK EUROPE PLC	THE HONG KONG & SHANGHAI BANKING CORPORATION LIMITED
MEXICO	CITIBANK EUROPE PLC	BANCO CITI MEXICO S.A.
MOROCCO	CITIBANK EUROPE PLC	CITIBANK MAGHREB S.A.
NAMIBIA	CITIBANK EUROPE PLC	STANDARD BANK OF SOUTH AFRICA LIMITED ACTING THROUGH ITS AGENT, STANDARD BANK NAMIBIA LIMITED
NETHERLANDS	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
NEW ZEALAND	CITIBANK EUROPE PLC	CITIBANK, N.A. NEW ZEALAND BRANCH



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COUNTRY	SUB-CUSTODIAN	LOCAL SUB-CUSTODIAN
NIGER	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
NIGERIA	CITIBANK EUROPE PLC	CITIBANK NIGERIA LIMITED
NORWAY	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
OMAN	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK, OMAN BRANCH
PAKISTAN	CITIBANK EUROPE PLC	CITIBANK, N.A. PAKISTAN BRANCH
PANAMA	CITIBANK EUROPE PLC	CITIBANK, N.A. PANAMA BRANCH
PERU	CITIBANK EUROPE PLC	CITIBANK DEL PERU S.A.
PHILIPPINES	CITIBANK EUROPE PLC	CITIBANK, N.A. PHILIPPINE BRANCH
POLAND	CITIBANK EUROPE PLC	BANK HANDLOWY W WARSZAWIE S.A.
PORTUGAL	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
QATAR	CITIBANK EUROPE PLC	THE HONG KONG & SHANGHAI BANKING CORPORATION LIMITED ACTING THROUGH ITS AGENT, HSBC BANK MIDDLE EAST LIMITED
ROMANIA	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC, DUBLIN - ROMANIA BRANCH
RUSSIA	CITIBANK EUROPE PLC	AO CITIBANK
SAUDI ARABIA	CITIBANK EUROPE PLC	CITIGROUP SAUDI ARABIA
SENEGAL	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
SERBIA	CITIBANK EUROPE PLC	UNICREDIT BANK SRBIJA JSC BELGRADE
SINGAPORE	CITIBANK EUROPE PLC	CITIBANK, N.A. SINGAPORE BRANCH
SLOVAK REPUBLIC	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC, POBOCKA ZAHRANICNEJ BANKY
SLOVENIA	CITIBANK EUROPE PLC	UNICREDIT BANKA SLOVENIJA D.D.
SOUTH AFRICA	CITIBANK EUROPE PLC	CITIBANK, N.A. SOUTH AFRICA BRANCH
SPAIN	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC
SRI LANKA	CITIBANK EUROPE PLC	CITIBANK, N.A. SRI LANKA BRANCH



Mitsubishi UFJ Investor Services & Banking (Luxembourg) S.A.

COUNTRY	SUB-CUSTODIAN	LOCAL SUB-CUSTODIAN
SWEDEN	CITIBANK EUROPE PLC	CITIBANK EUROPE PLC, SWEDEN BRANCH
SWITZERLAND	CITIBANK EUROPE PLC	CITIBANK, N.A. LONDON BRANCH
TAIWAN	CITIBANK EUROPE PLC	CITIBANK TAIWAN LIMITED
TANZANIA	CITIBANK EUROPE PLC	STANDARD BANK OF SOUTH AFRICA LTD. ACTING THROUGH ITS AFFILIATE, STANBIC BANK TANZANIA LTD
THAILAND	CITIBANK EUROPE PLC	CITIBANK, N.A. BANGKOK BRANCH
TOGO	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK COTE D'IVOIRE
TUNISIA	CITIBANK EUROPE PLC	UNION INTERNATIONALE DE BANQUES
TURKEY	CITIBANK EUROPE PLC	CITIBANK, A.S.
UGANDA	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK UGANDA LIMITED
UKRAINE	CITIBANK EUROPE PLC	JSC "CITIBANK"
UNITED ARAB EMIRATES, ADX	CITIBANK EUROPE PLC	CITIBANK, N.A. UAE
UNITED ARAB EMIRATES, DFM	CITIBANK EUROPE PLC	CITIBANK, N.A. UAE
UNITED ARAB EMIRATES, NASDAQ DUBAI	CITIBANK EUROPE PLC	CITIBANK, N.A. UAE
UNITED KINGDOM	CITIBANK EUROPE PLC	CITIBANK, N.A. LONDON BRANCH
UNITED STATES	CITIBANK EUROPE PLC	CITIBANK, N.A. NEW YORK OFFICES
URUGUAY	CITIBANK EUROPE PLC	BANCO ITAU URUGUAY S.A.
VIETNAM	CITIBANK EUROPE PLC	CITIBANK, N.A. HANOI BRANCH
ZAMBIA	CITIBANK EUROPE PLC	STANDARD CHARTERED BANK ZAMBIA PLC.
ZIMBABWE	CITIBANK EUROPE PLC	STANDARD BANK OF SOUTH AFRICA LTD. ACTING THROUGH ITS AFFILIATE, STANBIC BANK ZIMBABWE LTD

Mitsubishi UFJ Investor Services & Banking (Luxembourg) S.A.

COUNTRY	SUB-CUSTODIAN	LOCAL SUB-CUSTODIAN
ARGENTINA	EUROCLEAR BRUSSELS S.A.	CAJA DE VALORES S.A. GOVIES
AUSTRALIA	EUROCLEAR BRUSSELS S.A.	HSBC AUSTRALIA
AUSTRIA	EUROCLEAR BRUSSELS S.A.	OEKB CSD GMBH - MAIN
BELGIUM	EUROCLEAR BRUSSELS S.A.	BANQUE NATIONALE DE BELGIQUE, BRUSSELS
CANADA	EUROCLEAR BRUSSELS S.A.	ROYAL BANK OF CANADA, TORONTO
CZECH REPUBLIC	EUROCLEAR BRUSSELS S.A.	CITIBANK EUROPE PLC
DENMARK	EUROCLEAR BRUSSELS S.A.	VP SECURITIES A/S
FINLAND	EUROCLEAR BRUSSELS S.A.	EFI INFINITY
FRANCE	EUROCLEAR BRUSSELS S.A.	EUROCLEAR FRANCE
FRANCE	EUROCLEAR BRUSSELS S.A.	SOCIETE GENERALE SA, PARIS
GERMANY	EUROCLEAR BRUSSELS S.A.	CLEARSTREAM BANKING, FRANKFURT
GERMANY	EUROCLEAR BRUSSELS S.A.	DEUTSCHE BANK, FRANKFURT
GREECE	EUROCLEAR BRUSSELS S.A.	CITIBANK ATHENS
HONG KONG	EUROCLEAR BRUSSELS S.A.	HONGKONG SHANGHAI BKG CORP LTD
HUNGARY	EUROCLEAR BRUSSELS S.A.	CITIBANK EUROPE PLC, HUNGARIAN BRANCH OFFICE
IRELAND	EUROCLEAR BRUSSELS S.A.	CENTRAL BK/FIN SERV AUTH IRELAND
ISRAEL	EUROCLEAR BRUSSELS S.A.	CITIBANK N.A ISRAEL BRANCH
ITALY	EUROCLEAR BRUSSELS S.A.	ES-MIL S.P.A.
JAPAN	EUROCLEAR BRUSSELS S.A.	MUFG BANK, LTD.
JAPAN	EUROCLEAR BRUSSELS S.A.	MIZUHO BANK, LTD
LUXEMBOURG	EUROCLEAR BRUSSELS S.A.	CLEARSTREAM BANKING, FRANKFURT
LUXEMBOURG	EUROCLEAR BRUSSELS S.A.	LUXCSD S.A.
MALAYSIA	EUROCLEAR BRUSSELS S.A.	DEUTSCHE BK MALAYSIA BERHAD,KL
MEXICO	EUROCLEAR BRUSSELS S.A.	BANCO S3 MEXICO S.A.
NETHERLAND	EUROCLEAR BRUSSELS S.A.	EUROCLEAR NEDERLAND

Mitsubishi UFJ Investor Services & Banking (Luxembourg) S.A.

COUNTRY	SUB-CUSTODIAN	LOCAL SUB-CUSTODIAN
NEW ZEALAND	EUROCLEAR BRUSSELS S.A.	HSBC NEW ZEALAND
NORWAY	EUROCLEAR BRUSSELS S.A.	EURONEXT SECURITIES OSLO
PERU	EUROCLEAR BRUSSELS S.A.	CAVALI S.A. I.C.L.V. LIMA
POLAND	EUROCLEAR BRUSSELS S.A.	BANK HANDLOWY W WARSZAWIE SA
PORTUGAL	EUROCLEAR BRUSSELS S.A.	BNP PARIBAS
ROMANIA	EUROCLEAR BRUSSELS S.A.	CITIBANK ROMANIA
SINGAPORE	EUROCLEAR BRUSSELS S.A.	DEVELOPMENT BK OF SINGAPORE
SLOVAKIA	EUROCLEAR BRUSSELS S.A.	CITIBANK EUROPE PLC, POBOCKA ZAHRANICNEJ BANKY
SLOVENIA	EUROCLEAR BRUSSELS S.A.	UNICREDIT BANKA SLOVENIJA DD
SOUTH AFRICA	EUROCLEAR BRUSSELS S.A.	STANDARD BANK OF SOUTH AFRICA
SPAIN	EUROCLEAR BRUSSELS S.A.	BNP PARIS BAS S.A. SUCURSAL EN ESPANA
SPAIN	EUROCLEAR BRUSSELS S.A.	CACEIS BANK SPAIN, S.A.U.
SWEDEN	EUROCLEAR BRUSSELS S.A.	SKANDINAVISKA ENSKILDA BK,STOKHOLM
SWITZERLAND	EUROCLEAR BRUSSELS S.A.	SIX SIS
THAILAND	EUROCLEAR BRUSSELS S.A.	BANGKOK BANK LIMITED, BANGKOK
TURKEY	EUROCLEAR BRUSSELS S.A.	TURK EKONOMI BANKASI AS
UNITED KINGDOM	EUROCLEAR BRUSSELS S.A.	BANK OF NEW YORK MELLON, LONDON
UNITED KINGDOM	EUROCLEAR BRUSSELS S.A.	EUROCLEAR UK & INTERNATIONAL LTD
UNITED KINGDOM	EUROCLEAR BRUSSELS S.A.	MUFG BANK, LTD
UNITED STATES	EUROCLEAR BRUSSELS S.A.	JPMORGAN CHASE BANK, NY

PRIME BROKERS

COUNTRY	PRIME BROKER
UNITED KINGDOM	MORGAN STANLEY LONDON
UNITED KINGDOM	UBS AG LONDON
UNITED KINGDOM	GOLDMAN SACHS LONDON
UNITED KINGDOM	BNP AG LONDON