



Report prepared for the City of London Corporation, ESRC and Recipco  
by Z/en  
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## Summary Findings

# Capacity Trade and Credit: Emerging Architectures for Commerce and Money





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# Capacity Trade and Credit: Emerging Architectures for Commerce and Money

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About this report:

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## 1. Summary Findings

### 1.1 Capacity exchange – concept

Commerce underpins economic growth, advances socio-economic wellbeing and fosters mutual interests. The majority of business-to-business (B2B) trade uses money in the form of sovereign currencies, yet companies and governments also conduct trade on a bilateral, reciprocal basis by exchanging goods for goods without money. Such transactions are commonly known as ‘barter’ or ‘non-monetary trade’ and are widely regarded as less efficient than monetary trade since they require a coincidence of wants and needs between counterparties at one point in time, and are often contractually more complex.

Reciprocal trade is made possible on a *multilateral* basis by allowing counterparties to defer ‘payment’ for goods and services through a mutual credit system – i.e. a form of money – that is redeemable only in other goods and services and not in sovereign currency. Such money might be referred to as ‘common tender’ – a means of exchange that is widely accepted without legal coercion. Mutual credit brings participants back to the multilateral network to redeem their common tender since it is typically not redeemable for cash.

Multilateral reciprocal trade using common tender is not new, but information technology is transforming its ease, familiarity and potential to develop at scale. Multilateral reciprocal trade is more common among SMEs in local or national trading networks than internationally or among multinationals. Where larger government and multinational organisations engage in multilateral reciprocal trade, they have tended to focus on using spare capacity, such as excess media space. Recently, some larger multilateral reciprocal trade systems have become more prominent. Some interesting propositions for multilateral reciprocal trade using newer forms of common tender have also been more widely publicised.

This report defines “capacity exchanges” as “*membership-based systems within which companies can trade available capacity in the form of goods, services and infrastructure within and across industries, using common tender as a medium of exchange*”. This report explores four fundamental concepts of multilateral reciprocal trade and capacity exchanges – capacity, trade, credit and money. This exploration is followed by examples of contemporary practices in multilateral reciprocal trade using common tender, as well as some emerging innovations. Finally this report assesses the implications and benefits of a global capacity exchange hub in the UK.

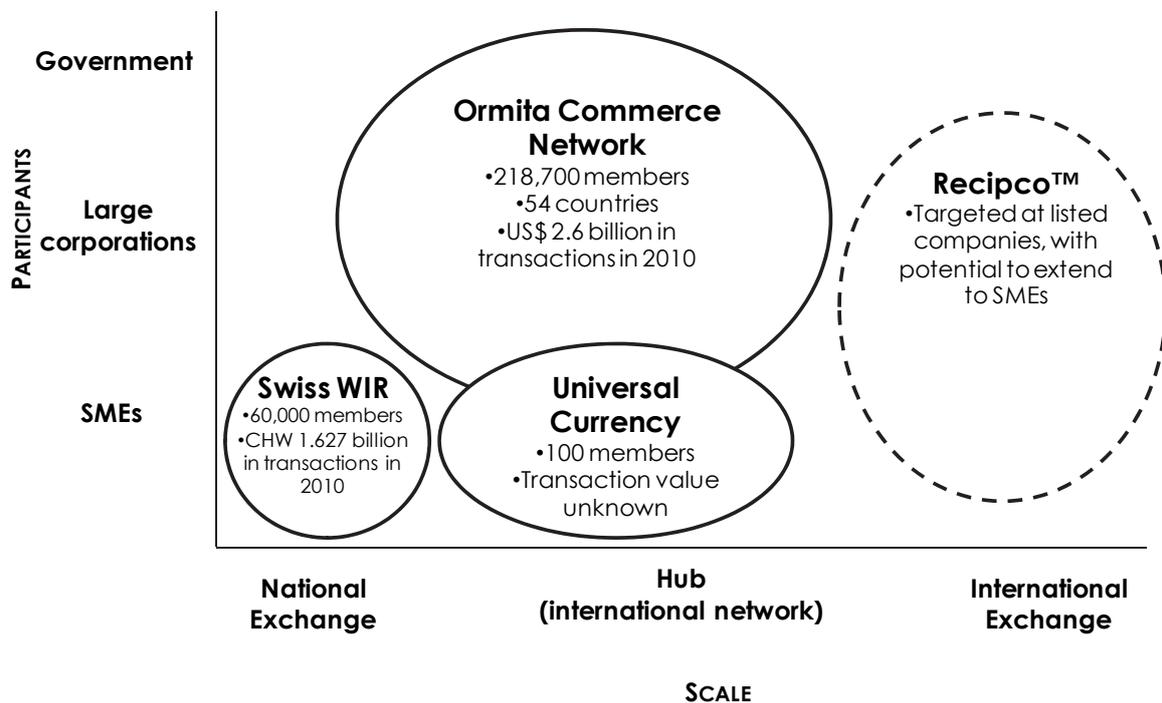
### 1.2 Capacity Exchange - context

Recent financial crises have affected economic output, trade and finance, and thus incomes, jobs and purchasing power. Financial crises lead people to explore new monetary systems, community exchange networks and alternative currencies. Well known historical examples include John Maynard Keynes’ *Bancor* suggestion after World War II, and the issuance of around 400 scrip currencies in the aftermath of the Great Depression in the United States. Local community exchange initiatives include

the British Local Exchange Trading Systems (LETS – see Appendix 17), the French SEL (système d'échange local) and the Argentinean Global Trading Network of 'barter clubs'.

Businesses often have excess capacity in their own goods, services or infrastructure, even more so when the financial cycle slows and credit tightens. Business people find that using capacity to source needed goods and services is an attractive alternative proposition to conventional sales and credit if it can increase sales, ease cash flow or reduce reliance on conventional credit. In order to illustrate the landscape of multilateral reciprocal trade using common tender, Figure 1.1 sketches the participants and scale of three existing systems and one proposed system. The Swiss WIR is an extensive national SME system founded in 1934; the Ormita Commerce Network is a barter network founded in 2007; Universal Currency is a mechanism created in 1997 using a common tender across a network of circa 100 local exchanges; and Recipco™<sup>2</sup> is a proposal for a capacity exchange focused on listed multinational companies with a mutual credit system backed by the members.

**Figure 1.1 – Multilateral reciprocal trading landscape**



<sup>2</sup> Note: Recipco Holdings Limited is one of the sponsors of this report.

## **1.3 Concepts: theories and developments**

### **1.3.1 Capacity**

Proponents of multilateral reciprocal trade claim that it leads to more efficient use of capacity at both company and country levels than is currently being achieved through standard methods of trading and traditional finance. Capacity utilisation at a macroeconomic level is difficult to measure comprehensively but existing indicators suggest that both developed and developing countries experience significant 'slack' in their economies which could be reduced by better capacity management. From a microeconomic perspective, no company operates at full capacity and there is always interest in new markets or ways of trading that might contribute to increased efficiency and competitiveness. Industries characterised by 'perishable' products or services have made concerted efforts in the past three decades to manage their supply chains and capacity better, most notably through use of information technology. If capacity exchanges were to improve capacity utilisation markedly, they would be economically significant.

### **1.3.2 Trade**

Trade underpins economic development and growth and is carried out through a variety of channels, both formal and informal. Trade can be facilitated in numerous ways, such as through formalised exchanges, third party brokers, government intervention or, more recently, through online platforms. Trade is primarily motivated by economic incentives (for-profit); but it is also encouraged to foster social cohesion and to generate wider benefits within society. A capacity exchange that allows organisations to access new trading channels and partners, and therefore increase trading opportunities, could foster economic growth and lead to wider socio-economic gains. Given the increasing complexity and sensitivity of supply-chains within industries, a capacity exchange that increases diversity and improves supply-chain efficiencies could be economically beneficial and perhaps reduce supply shocks.

### **1.3.3 Credit**

The financial system provides credit. Companies also 'create' credit when they use their own goods and services (i.e. their productive capacity) to finance the purchase of other goods and services needed, without the use of sovereign currencies. Recent economic crises and subsequent efforts to rebuild bank balance sheets have reduced traditional financial credit facilities. Constrained credit supply has led some businesses to seek new credit sources in order to maintain trading activity. SMEs seem to struggle more than larger organisations to access trade finance and credit. Capacity exchanges which create alternative credit and reduce reliance on conventional credit could be very attractive in today's business environment, and countercyclical to sovereign currency credit cycles.

### **1.3.4 Money**

Individuals and organisations have the 'capacity' to provide goods and services for trade. They then conduct trades, some of which are asymmetric, i.e. one side of the trade does not provide full settlement at the same time. Asymmetric trade typically involves deferring some obligation over time, creating a credit for one party and a

debit for another. If these credits and debits are recorded, a unit of account is created. These credits and debits, if trusted and used, create a store of value. If these credits and debits can be traded - that is one party can use a credit they own to discharge a debt they owe to a third party - the credit and debit system becomes a medium of exchange, i.e. money. However, there are legitimate concerns about the trust, safety and complexity of common tender as a means of exchange compared with traditional finance.

### 1.3.5 Multilateral reciprocal trade

Multilateral reciprocal trade takes many forms, but countertrade and organised forms of 'barter' are worth emphasising as they are the most widespread. Countertrade consists of complex contractual arrangements where imports, exports and trade finance are all part of the same package. Corporate barter and retail barter are forms of multilateral reciprocal trade where member companies use their own goods and services to finance the purchase of other goods and services. Precise figures on corporate and retail barter trade are scarce, though Table 1.1 indicates some of the types of transactions encountered during the research. The values of the trades in the table are imputed. These trades involved a number of different parties and were sometimes complex, with multiple participants often taking partial amounts. These types of multilateral reciprocal trades can require a significant degree of human resources to initiate and conclude.

**Table 1.1 – Sample goods in multilateral reciprocal trade<sup>3</sup>**

Goods/Services	Location	Value (US\$)
Communication equipment	Europe	1,500,000
Rubber	Europe	1,320,000
Communication equipment	Europe	6,000,000
Software upgrade	Europe	7,000,000
Rechargeable batteries	Europe	650,000
Transport planning	Philippines	60,000
Coconut oil	USA	15,000,000
Copper cathodes	Singapore, China	15,000,000
Public relations	Philippines	100,000
Coconut oil	South Africa	1,900,000
Cordless phones	USA	5,800,000
Radar detectors	USA, Netherlands	1,500,000
Garments	Europe	7,800,000

Offers to trade are diverse and, as well as those in the table above, include aircraft, advertising, commercial windows, jewellery and real estate/property among others.

<sup>3</sup> Goods, services and values are a representative sample from one exchange in the retail and corporate barter sector.

### **1.3.6 Countertrade**

Regularly quoted figures state that countertrade accounts for 20% or more of world trade, involving some 90 countries and accounting for US\$100 to US\$150 billion (Platt, 1992; Carter, 1997). Countertrade is often used to structure international sales when conventional means of payment are difficult, costly or nonexistent, including in times of conflict (e.g. Libya), embargo (e.g. Iran) or currency shortages (e.g. in the former USSR) (Hill, 2011).

The governments of developing and emerging countries (e.g. Philippines, South Africa and Argentina) see countertrade as a way to control imports and government procurement sources while enhancing international trade positions, diversifying export industries and alleviating trade imbalances. Advanced economies usually refrain from explicitly promoting countertrade though governments often promote, underwrite or conduct countertrade in strategic industries such as military equipment or energy. Countertrade is often criticised and dismissed on the grounds of its complexity and the lengthy negotiations on quality, delivery and relative value. Perhaps because of their complexity, individual countertrade transactions are usually significant in volume and value.

### **1.3.7 Modern forms of barter – corporate and retail barter**

Increasingly common in North America since the 1950s, barter networks have enabled companies to use their goods and services to finance the purchase of other goods and services. Two models, corporate barter and retail barter, can be distinguished, principally by the size of the participants and their transactions. Corporate barter allows larger organisations to buy things such as media and advertising capacity in exchange for payment in a combination of unsold inventory and cash. Deals are brokered by specialist third parties who act as principals in the transaction (Healey, 2001). Retail barter networks or trade exchanges are more like marketplaces, now increasingly automated, for member SMEs to exchange goods and services with each other using a system of mutual credit based on a common tender such as trade 'pounds', trade 'dollars' or trade 'credits'. Common tender can only be 'spent' on the exchange and cannot be redeemed for cash, thus encouraging repetitive participation on the exchange.

Multilateral reciprocal trade seems widespread, though comprehensive data is sparse. According to the International Reciprocal Trade Association (IRTA), one of the industry trade bodies<sup>4</sup>, some 700 retail barter exchanges exist as of 2009/10, most located in North and Latin America (IRTA, 2010). The most enduring retail barter exchange is the WIR multilateral commerce network, which has been operational in Switzerland for over 75 years, now comprising over 60,000 member SMEs (1 in 5 SMEs in Switzerland) with the value of WIR franc-based transactions amounting to CHF 1.627 billion in 2010 and representing circa 0.3% of Swiss GDP<sup>5</sup> for the same year (WIR Bank, 2010).

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<sup>4</sup> The other most prominent trade body is NATE – the US-based National Association of Trade Exchanges. There does not appear to be an equivalent trade body for the corporate barter industry.

<sup>5</sup> In 2010, Swiss GDP amounted to CHF 546.619 billion according to OECD statistics. Available from: <http://stats.oecd.org/index.aspx?queryid=350> [Accessed August 19, 2011].

Ormita Commerce Network was originally a software provider for corporate and retail barter trade. It acquired some of its clients and now operates a franchise model allowing members to trade across an international network of exchanges. Ormita's worldwide network handled annual transactions worth over US\$2.6 billion in 2010, with a presence in over 54 countries and offices in 24 countries. Ormita secures local partners with experience of doing businesses in their respective country's legal and socio-economic frameworks and offers them and their members trading opportunities at the international level. By offering wide-ranging trading opportunities and support services, including hospitality and travel barter, alternative funding for start-ups, commodity import offers, export assistance and countertrade, in addition to conventional corporate and retail barter, Ormita appears to meet a large portion of the various demands in the multilateral reciprocal trade industry.

A survey sent as part of this research to 200 existing corporate and retail barter exchanges elicited 26 responses. The survey indicated that SMEs usually form the bulk of membership (96% of respondents). Only one exchange surveyed included government agencies among its members, suggesting that direct government involvement is not yet significant in this industry, except in the context of countertrade. Most exchanges are small. Just over one third of respondents claimed that the annual value of trade on their exchange in 2010 was between US\$1 million and US\$10 million. Only two exchanges claimed that the value of trade on their exchange was greater than US\$1 billion. As an indication of operational size, the ratio of the operational turnover to the value of trade on the exchange is in the order of 1:10 to 1:30, i.e. an exchange where trades are made worth US\$1 billion might constitute a business of US\$50 million.

### **1.3.8 Prospects for existing forms of multilateral reciprocal trade**

The primary incentive for organisations to participate in multilateral reciprocal trade is the opportunity to source what they *need* using what they *produce* as payment, without the exchange of sovereign currency. The ability to pledge future capacity and production creates additional credit alongside traditional finance. While the proposition is attractive, commercial viability depends on the credibility of the marketplace and its operators, liquidity within the market to benefit members and the trust participants place in the common tender to be sustainable over time.

The multilateral reciprocal trade industry faces challenges. It relies on high degrees of trust, yet is not well understood by outsiders. Allegations of fraud (see, for example, discussions on Think Barter LinkedIn Group, 2011)<sup>6</sup> are associated with some issuers of common tender. With the exception of the Swiss WIR, formal financial regulation is sparse. While transactions are regulated for tax, the issuance of common tender and the management of mutual credit supply are not. Industry associations, such as IRTA, are attempting to self-regulate through standards and codes of conduct.

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<sup>6</sup> Interviewees active in the corporate and retail barter sector who participated in this research cited anecdotal examples of retail and corporate barter exchanges failing due to deficit spending on the part of the exchange operator, as a result either of ignorance or wilful abuse.

## 1.4 Trade and Tender

### 1.4.1 Common Tender

Money is often, inaccurately, assumed to be synonymous with sovereign or fiat currencies. Common tender is defined as “money ... commonly accepted as payment of debt without coercion of legal means” (Timberlake, 1987b). Common tender is distinct from sovereign currency and the phrase is used in this report to refer to money issued by a capacity exchange to record trade credits.

Common tender in multilateral reciprocal trade creates an endogenous mutual credit supply by deferring purchasing power from present to future (Wray, 1990). Its purpose is to store value until a trading partner is found, and not to do so in anticipation of a real or speculative return on capital. Common tender is thus money as a means of exchange, rather than money as a source of capital and using it in B2B trade is therefore an investment in the persistence of the trading community. To operate effectively, common tender must be legal, usable in trade, transferable as a means of exchange, persistent and trusted. Existing types of common tender differ on a number of features including their backing mechanisms, their rate of acceptance and their mechanism of exchange, if applicable, with sovereign currencies.

In existing systems of multilateral reciprocal trade, common tender is generally backed by the productive capacity of members in the form of goods, services and infrastructure they produce. Trust in the operator of the membership network is crucial. Most common tender used in multilateral reciprocal trade is artificially pegged on a 1:X basis on sovereign currency in order to facilitate valuation, accounting and tax treatment. This does not mean that the value of common tender is equal to that of the sovereign currency. The value can be considerably lower if exchange operators resort to deficit spending, namely issuing common tender as credit that is not supported by goods and services, in order to attract new participants. There have been attempts to ‘back’ common tender, i.e. to guarantee its exchange into something else of value, such as a sovereign currency, physical commodity or resource e.g. a kilowatt hour (Birch, 2010: 40).

Common tender can be used either in whole or part as a means of exchange, e.g. “payment will be 50% cash and 50% common tender”. The appropriate ratio of cash/common tender is disputed. The basic argument is between purists who believe common tender should be used on its own (e.g. IRTA), and those who believe that a mixture of common tender and cash works better (e.g. Swiss WIR). Purists feel that mixing sovereign currency with common tender in transactions leads to variable and uncertain acceptance across the membership, ultimately undermining the confidence participants may have in both the system and the common tender. Proponents of mixed means of exchange believe it helps leverage sales in both common tender and sovereign currency, while simultaneously allowing members some flexibility to manage their common tender budget.

As part of this research, a simulation experiment conducted in association with University College London demonstrated one environment in which trade values tend

to be stable at extremes (either 100% sovereign currency or 100% common tender); whereas combining common tender and sovereign currency as means of exchange seems to create a complex relationship between acceptance and faith in common tender and sovereign currency. As evidenced in geographic areas where multiple currencies co-exist, this complexity can be surmounted if the benefits of trade are sufficient.

## **1.5 Emerging and innovative proposals**

### **1.5.1 Alternative Currencies**

Alternative currencies are increasingly discussed in both business and academia. Some, hardly exhaustive, examples help to set the scene. Facebook credits and BitCoins are attempts to create common tenders for virtual communities. Facebook is tied to its social network while BitCoins are intended to be used across communities. Linden dollars (Second Life) have an exchange rate with sovereign currency. Ven (Hub Culture) is attempting to move a community currency into the physical world as well, with physical trading 'pavilions'. The Ven is listed on Thomson Reuters' trading screens.

There are common tender initiatives not tied to capacity exchanges or online communities, such as the WOCU<sup>®</sup>, a currency basket derivative of 16 sovereign currencies weighted by the GDP of the top 20 nations. WOCU<sup>®</sup> are used, though not widely, in some commodity transactions. To date, there is no global common tender. Proponents of global common tender often claim that it would not only underpin multilateral reciprocal trade but also provide a unit with less exchange rate volatility against goods and services.

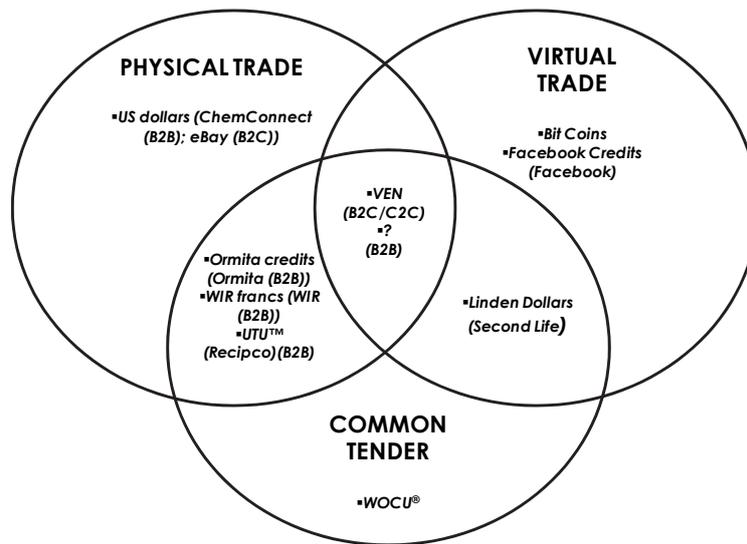
### **1.5.2 Innovative Proposals**

A number of innovative proposals for multilateral reciprocal trade are emerging, offering prospects for international scale and, in some instances, expanding across existing exchanges. IRTA promotes the Universal Currency (UC). The UC is 'a trade exchange for trade exchanges' whose membership comprises 100 trade exchanges. The UC is an attempt to help exchanges trade with each other using a common tender accepted across multiple platforms.

Recipco<sup>™</sup>'s solution comprises a global electronic marketplace – Recipco Capacity Exchange<sup>™</sup>; a common tender – the Universal Trading Unit (UTU<sup>™</sup>); and a member-backed facility – RecipcoClear – which ensures the integrity and liquidity of the UTU<sup>™</sup> with the available capacity of its members. Contrary to most common tender in the existing multilateral reciprocal trade industry, the value of the UTU<sup>™</sup> is not defined by the cash-equivalent value of the goods and services traded in any transaction, but by an algorithm that takes into account weightings of five major sovereign currencies. As trade volume increases and participation expands, it is anticipated that the value of the UTU<sup>™</sup> will be defined by the purchasing power of members of RecipcoClear (the larger global, listed multinationals) and backed by the balance sheets of RecipcoClear members. Recipco<sup>™</sup> claims to offer an innovative solution for capacity management for both high-margin and low-margin producers.

Figure 1.2 illustrates the interactions of various common tenders with physical and virtual trade in both the B2B and business-to-consumer (B2C) segments. A notable gap is a common tender linking B2B physical and virtual trade. It should be noted that most of these tenders are still in their youth.

**Figure 1.2 – Physical trade, virtual trade and common tender**



## 1.6 Capacity exchanges: options, feasibility and potential - towards an 'optimal model'

Multilateral reciprocal trade – where all participants are ultimately both buyers and sellers – could flourish in industries that combine fungible products with low barriers to entry for two reasons: a highly competitive industry is likely to be inclined to pursue new trading channels; and trading fungible products in demand across a range of industries increases the likelihood of participants finding something they need to buy after they have transacted a sale. Incentives for participation on a capacity exchange, in addition to offering a new line of credit, are likely to be influenced by industry margins and the perishable or persistent nature of goods and services.

Liquidity is important. Buyer and suppliers need to interact successfully often enough to give an exchange credibility for return visits. Critical mass has to be reached quickly, so attracting early adopters is fundamental to liquidity. SME participation is easier to secure than that of larger firms. Larger firms have direct access to capital markets. SMEs often have restricted access to traditional finance, i.e. primarily through banking relationships, and can be more open to new forms of credit. Historically, SME-based exchanges have been local or regional, rarely going national and not international.

Listed companies and large multinationals would be ideal early adopters given lower credit risk, name recognition and the potential for fast expansion through their supply chains. In practice, their participation is likely to be conditional on the ability of the exchange to offer goods and services specific to their requirements, and attracting

them may be a slow process due to more complex decision-making structures than those in smaller firms. Governments could use exchanges as procurement channels to support economic development, but in practice their involvement to date has been low. Some local governments have supported capacity exchanges but for national governments, with the exception of Switzerland, the lack of support is unsurprising as they feel that common tenders might detract from sovereign currency.

A capacity exchange could comprise industry-specific members, offering them opportunities for vertical trading. Industry-specific success depends on participation by the industry's dominant players. A cross-industry capacity exchange featuring a wide range of fungible goods and services needed by most businesses would have to address wide-ranging requirements. That said, air travel (seats), hospitality (hotel rooms), telecommunications, logistics, transport, shipping, energy, printing, media and professional services (e.g. accountancy) are widely consumed goods and services that could underpin a cross-industry capacity exchange. A capacity exchange could grow internationally in different ways, including by joining a network of exchanges as a participating member (e.g. Universal Currency), or via a network or franchise (e.g. Ormita) where the exchange acts as the local partner representing the network.

A capacity exchange that is functioning at scale, has achieved critical mass and represents a liquid marketplace is likely to function on a high technology/low people ratio. In contrast, an early stage capacity exchange needs to expend significant efforts educating businesses on the benefits of the value proposition, attracting members and developing business, as well as brokering trades. Heterogeneity in trade leads to complexity, so the larger the ambitions of a capacity exchange the more significant the investment required to standardise contracts in terms of price, quality and specification.

Is there an optimal model for a capacity exchange? Though it is difficult to advocate a single capacity exchange model, three scenarios can be distinguished. First, a few capacity exchange start-ups could emerge and grow regionally. Second, national capacity exchanges, similar to the WIR network in Switzerland could emerge, with sizeable membership, especially of SMEs. This probably requires national government 'fostering'. Third, one to several multilateral capacity exchanges could emerge internationally. One particular challenge internationally seems to be attracting large and listed companies. While there are examples of the first two scenarios, the third has not yet materialised. Some new international capacity exchange initiatives intend to target large multinationals in multiple industries where margin differentials could be best exploited through multilateral reciprocal trade.

### **1.7 Possible benefits and constraints to participation**

A range of socio-economic benefits are put forward by proponents of multilateral reciprocal trade. Economic benefits include improvements in cash flow and working capital availability; increased sales and access to new sales channels; more jobs as a result of improved economic activity; a source of interest free credit; inflation protection; and reduced storage and waste due to a reduction in excess inventory. Wider benefits to society are, of course, linked to improvements in economic

performance and growth, as well as reduced economic volatility. In addition to these, further suggested benefits include the reduction of fraud through transparency; an alternative means of providing venture capital to foster business and innovation; and a more efficient source of in-kind donation capital for the third sector.

Given the lack of consistent data within the existing sector, a quantitative analysis of the asserted economic and social benefits of multilateral reciprocal trade is necessarily limited. Socio-economic benefits are likely to be a function of the trust which participants place in a capacity exchange, the integrity shown by the exchange operators and the exchange's endurance over time, all of which are unknowns. Additionally, benefits accruing from such trade will necessarily be determined by the particular model of capacity exchange pursued. For example, exchanges targeted at SMEs operating at a national level (such as the Swiss WIR) will inevitably have a different impact than an exchange where trade takes place across borders and where the counterparties are listed multinationals with significant market capitalisation.

Table 1.2 outlines possible benefits to the UK – including the potential for job creation and increased sales for participants - that might accrue from three possible capacity exchange options: Small - several UK exchange start-ups; National – a UK capacity exchange (SME-oriented) similar to the WIR and proportional to the UK economy; Multinational - a few multilateral capacity exchanges (based in the UK with benefits diffused globally). It is important not to overstate the benefits that a capacity exchange might bring. The multilateral reciprocal trading system with the most longevity is the Swiss WIR. Yet while the Swiss WIR has been established for 70 years, it still represents just 0.3% of Swiss GDP. Nevertheless, the numbers presented here attempt to give some estimate of the ranges which might be achievable.

The direct jobs created by the exchanges would be small. The benefits for trade participants include increased credit, wider markets (where the benefits are based on inter-membership assumptions) and capacity utilisation (where the benefits are based on less wastage going through to higher margins). Wider job creation among the trade participants is estimated in line with increased turnover for these firms. Currency hedging costs are assumed to decrease when using a common tender internationally that is based on a basket approach, e.g. SDRs, WOCU® or UTU™. In-kind donation effectiveness is a proposed benefit that proved difficult to quantify, as did reduced wastage and storage. Another unquantified benefit is 'soft' investment in new businesses, where participants use spare capacity to help start-ups. Finally, a less volatile, more counter-cyclical economy is tough to value, but some indicative calculations are presented based on a mid-range implied GDP volatility reduction valued using a standard option pricing model.

**Table 1.2 – Summary of benefit estimates**

	<b>Option 1 Small - several UK exchange start-ups</b>	<b>Option 2 National - UK capacity exchange (SME-oriented)</b>	<b>Option 3 Multinational - a few multilateral capacity exchanges based in the UK</b>
<b>Direct benefits</b>			
Job creation through the exchange (total)	25 to 100	70 to 300	200 to 500
Increased credit capacity	£20 million to £164 million to £250 million	£15 billion to £65 billion to £80 billion	£25 billion to £132 billion to £160 billion
Wider markets - increased sales (more competitive & innovative)	£2 million to £16 million to £25 million	£5 billion to £13 billion to £20 billion	£10 billion to £40 billion to £60 billion
Capacity utilisation - higher margins (more competitive & innovative)	£250 million to £1.4 billion to £3 billion	£8 billion to £14 billion to £20 billion	£50 billion to £110 billion to £200 billion
Job creation for participants	100 to 140 to 200	50,000 to 110,000 to 150,000	200,000 to 525,000 to 650,000
Reduced currency hedging costs	nil	nil	£5 million to £18 million to £30 million
<b>Wider benefits</b>			
Improving in-kind donation effectiveness	unlikely	likely, medium & national	likely, low & international
Less volatile, more counter-cyclical economy	nil	£50 million to £300 million to £1 billion	£100 million to £860 million to £2 billion
<b>Sustainability benefits</b>			
Reduced wastage	small	high	high
Reduced storage	nil	small	small

Option 1: Several UK exchange start-ups are established in the UK. Several hundred SMEs trade on these exchanges at some frequency. Bottom, likely and top range calculations are based on sample accounts of similar exchange operations<sup>7</sup> and on the turnover, employment and other economic data of UK SMEs. This option has a large ratio of benefits to investment, although relatively few jobs or directly measurable turnover.

Option 2: A leading national capacity exchange emerges in the UK. Assumptions and calculations are based on an exchange comparable to the Swiss WIR. The middle range calculations are based on the participation of 1 in 5 UK SMEs, taking into account recent UK GDP and relevant economic data for SMEs. If successful, such an exchange could potentially make a tangible contribution to the UK economy and wider society. For a less volatile economy the option inputs centred on assuming UK GDP of £1.336 trillion (2010) reducing its annual volatility by 0.1% from 6.81% to 6.74% on long-term growth rates of 1%. Job creation and benefits are high for the level of investment, principally because small improvements in market access and capacity utilisation have a very high impact.

Option 3: One, but possibly several, multilateral capacity exchanges, based in the UK, operating internationally, with government 'fostering', principally through active oversight. The proposition draws on three models which have been discussed in this report: an exchange operating at a global scale (Ormita); an innovative proposition aiming to target large multinationals and other listed companies (Recipco™); and a 'trade exchange of trade exchanges' using a single common tender across multiple membership bases (Universal Currency). If similar exchanges were successfully established with headquarters in the UK, benefits could potentially be substantial, although many of these would be diffused globally. For a less volatile global economy the option inputs centred on assuming G8 GDP of £22.13 trillion (2010 estimate) reducing its annual volatility by 0.1% from 1.75% to 1.74% on long-term growth rates of 3.79%. This result does not scale linearly with a single nation as the G8 GDP already has lower volatility.

## **1.8 Policy considerations**

Two observations suggest that regulation might help to encourage capacity exchanges: the first is the high incidence of fraud allegations from those in the multilateral reciprocal trade sector today, which could deter potential participants; the second is the increased sensitivity of industry to credit facility stability (ICC, 2008; BIS, 2011). Two basic areas might be suited to regulation – the conduct of business on the exchanges and the issuance of common tender.

Three regulatory models might suit the multilateral reciprocal trade sector. First, self-regulation, where membership of an industry association and adherence to its conduct of business rules reassures traders. Two trade bodies – IRTA and the National Association of Trade Exchanges (NATE) – are attempting to self-regulate through lobbying, professionalization of trading and certification. While they seek to advance best practice, there is no evident regulation around common tender.

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<sup>7</sup> Based on annual reports of existing corporate and retail barter exchanges.

Government regulation is a second option. Trading standards regulation might suffice for the conduct of business on the exchanges, but regulating the issuance of common tender might involve financial regulators. Contrary to most exchanges which are private companies, the Swiss WIR is subject to Federal banking regulation, with oversight on the issuance, supply and credit allocation of WIR francs. Other regulatory frameworks of relevance include electronic commerce regulation and payments regulation. Yet for a nascent industry with uncertain prospects it may be too early for direct government intervention.

A third option is standards market regulation using accreditation and conformity assessment.<sup>8</sup> Used in a number of areas (e.g. shipping, fire safety, airlines, automotives, railways, electricity, food safety and health) this model encourages open standards where development of the standard is a structured, inclusive process involving interested stakeholders. Standards can be developed either alongside an authorised and independent accrediting body for certification agencies such as the United Kingdom Accreditation Service (UKAS); or via industry mutuals such as the Programme for the Endorsement of Forest Certification (PEFC) for sustainable forestry. Accreditors regulate the market and ensure the separation of standards development from the commercial elements of implementation and review. The standards market regulation model is used in finance, e.g. ISO 22222 (personal financial planning) and AS3806 (financial services compliance); various IT standards such as ISO 27000 (information systems security); and by firms which obtain ISO 9000 (quality management) or ISO 14000 (environmental management), though certainly not as widely as in other industries.

Government could 'foster' the nascent capacity exchange industry either by pushing towards formal government regulation or towards developing an ISO standard for common tender, with a view to these being audited by certifications agencies in future. A declaration by a government that it has a structured view on regulation for the industry might attract capacity exchanges and novel common tenders.

### **1.9 Guidance and recommendations to policy makers**

London has long been a centre for diversity in trade and exchange because of its people, business environment, market access, infrastructure and general competitiveness. The breadth and scale of formally recognised trading in London includes foreign exchange, shipping, capital markets, commodity markets and insurance markets. London has been recognised as a place for "fair trade", with a common law system, numerous standards bodies and trained trade and financial professionals. London should be an ideal location for capacity exchanges.

If the scale of benefits described is sufficiently interesting for policy makers, then this research suggests that there are five main areas where policy makers could foster multilateral reciprocal trading structures, as outlined in Table 1.3.

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<sup>8</sup> Declaration: one of the report authors is a non-executive director of United Kingdom Accreditation Service, the UK's national sole accreditation body for certification, testing, inspection and calibration services, effectively the UK regulator.

**Table 1.3 – Policy recommendations**

<b>Policy recommendations</b>	<b>Options</b>	<b>Desired outcomes</b>
<p><b>1. Improve understanding of multilateral reciprocal trade</b></p> <p><b>HIGH importance</b></p>	<p><b>Government monitoring and information disclosure through:</b></p> <ul style="list-style-type: none"> <li>◆ HMRC tax filing;</li> <li>◆ Office of National Statistics;</li> <li>◆ annual survey of capacity exchanges, corporate participants.</li> </ul>	<ul style="list-style-type: none"> <li>◆ further understanding of capacity exchanges, related risks and opportunities;</li> <li>◆ improve data monitoring, consistency and disclosure;</li> <li>◆ monitor evolution of capacity exchanges;</li> <li>◆ monitor impact on wider economy.</li> </ul>
<p><b>2. Regulation – common tender</b></p> <p><b>HIGH importance</b></p>	<p><b>Government regulation options via:</b></p> <ul style="list-style-type: none"> <li>◆ FSA and e-commerce or payment mechanisms;</li> <li>◆ Bank of England and supervision of credit institutions.</li> </ul> <p><b>Standards market regulation options via:</b></p> <ul style="list-style-type: none"> <li>◆ accreditation and third party certification/standard bodies;</li> <li>◆ indemnification via insurance or re-insurance.</li> </ul> <p><b>Self-regulation options via:</b></p> <ul style="list-style-type: none"> <li>◆ industry trade body.</li> </ul>	<ul style="list-style-type: none"> <li>◆ build confidence in the market through government support;</li> <li>◆ prevent fraud (e.g. deficit spending);</li> <li>◆ oversee volume of issuance and backing mechanisms;</li> <li>◆ provide a legal reference for potential users/ members.</li> </ul>
<p><b>3. Regulation – capacity exchange</b></p> <p><b>MEDIUM importance</b></p>	<p><b>Government regulation options via:</b></p> <ul style="list-style-type: none"> <li>◆ FSA and e-commerce or payment mechanisms;</li> <li>◆ Bank of England and supervision of credit institutions;</li> <li>◆ trading standards.</li> </ul> <p><b>Standards market regulation options via:</b></p> <ul style="list-style-type: none"> <li>◆ accreditation and third party certification/standard bodies.</li> </ul> <p><b>Self-regulation options via:</b></p>	<ul style="list-style-type: none"> <li>◆ improve credibility and integrity of the industry;</li> <li>◆ develop standards of business conduct;</li> <li>◆ advise on tax treatment and obligations.</li> </ul>

Policy recommendations	Options	Desired outcomes
<p><b>4. Establish a centre of excellence through an 'office of capacity exchanges'</b></p> <p><b>MEDIUM importance</b></p>	<p>◆ industry trade body.</p> <p><b>Provide support by:</b></p> <ul style="list-style-type: none"> <li>◆ establishing a business network for capacity exchanges;</li> <li>◆ promoting dialogue with relevant government bodies and officials;</li> <li>◆ promoting cooperative indemnity vehicles, e.g. mutual insurance, indemnity insurance;</li> <li>◆ promoting research into the economics and technology of capacity exchanges;</li> <li>◆ encouraging discussion of the emergence of common tender at a time of likely shifts in international monetary systems;</li> <li>◆ developing adequate education programmes for trade and procurement professionals.</li> </ul> <p><b>Provide guidance on key issues including:</b></p> <ul style="list-style-type: none"> <li>◆ insolvency and wind-up arrangements;</li> <li>◆ client asset protection rules;</li> <li>◆ taxation;</li> <li>◆ compliance with anti-money laundering regulations;</li> <li>◆ anti-counterfeiting and grey market problems;</li> <li>◆ credit and Basel III implications;</li> <li>◆ best execution requirements;</li> <li>◆ links with other UK e-commerce initiatives on payment.</li> </ul>	<ul style="list-style-type: none"> <li>◆ build confidence in capacity exchanges;</li> <li>◆ encourage participation;</li> <li>◆ provide reassurance to current and prospective participants;</li> <li>◆ improve visibility and credibility of the industry</li> </ul>
<p><b>5. Integrate capacity exchange hub policies with wider government policies</b></p> <p><b>MEDIUM importance</b></p>	<p><b>Integration with:</b></p> <ul style="list-style-type: none"> <li>◆ procurement in general – all government procurement department functions and agencies;</li> <li>◆ promotion – UK Trade &amp; Investment;</li> <li>◆ innovation and research – BIS;</li> <li>◆ technology – Technology Strategy Board;</li> <li>◆ immigration – Home Office, UK Border Agency, UK Visa Bureau;</li> <li>◆ competition – Office of Fair Trading.</li> </ul>	<ul style="list-style-type: none"> <li>◆ increase attractiveness of capacity exchanges for existing organisations with international operations.</li> </ul>

## 1.10 Conclusion and areas for further research

Multilateral reciprocal trade is an emerging sector that has the potential to create complementary credit systems alongside traditional financial credit. Capacity exchanges are clearly at an early stage of development, with diversity in approaches, participants, industries and scale. Capacity exchanges appear to have the potential to increase trade and growth, and to provide other economic and social benefits. It is clear that such potential is tied to the trust participants place in the exchange model and the common tender, as well as levels of liquidity. If capacity exchanges were formally recognised, a more solid regulatory framework might encourage more rapid development.

Policy makers are generally unfamiliar with multilateral reciprocal trade. This research has identified significant gaps in data and understanding. UK academics consulted as part of this research pointed out that most existing research ignores or misses multilateral reciprocal trade. Equally, export and other economic statistics fail to provide a fair account of existing multilateral reciprocal trade in terms of type, volume, scale and value. These gaps are partly explained by the lack of definition, the variety of multilateral reciprocal trade and the fact that, being 'non-monetary', such trade avoids traditional statistical data acquisition. A barter deal between two corporations might only appear in trade statistics as shipping tonnage. A barter deal between two corporations within a country might not appear in official statistics at all. Suggestions for further research will depend to a great extent on the efforts put into improving data sources for further analysis, particularly in order to model the issuance and performance of common tender, levels of liquidity on a capacity exchange, and counter-cyclical impact that may arise in relation to the mainstream monetary economy. Some useful further research might cover:

- ◆ possible applications of peer-to-peer currencies in B2B environments;
- ◆ systematic data collection approaches on countertrade and multilateral reciprocal trade;
- ◆ behavioural trade decisions and perceptions of multilateral reciprocal trade value;
- ◆ stability and volatility of common tender compared to sovereign currencies under different conditions (e.g. one common tender, multiple sovereign currencies; multiple common tender, multiple sovereign currencies);
- ◆ modelling of socio-economic benefits of multilateral reciprocal trade, especially in relation to economic growth;
- ◆ modelling optimal pricing for capacity exchanges;
- ◆ better dynamic economic models of capacity, trade, credit and money.

