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# **A TECHNOLOGICAL APPROACH TO REFORMING JAPAN'S CONSUMPTION TAX**

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## A TECHNOLOGICAL APPROACH TO REFORMING JAPAN'S CONSUMPTION TAX

Richard T. Ainsworth

Significant change has been forecast for the Japanese Consumption Tax. Revenue needs are pressing, and the Consumption Tax appears to be underutilized. Should the rate be doubled from 5% to 10%, or more? If so, will rate increases necessitate further structural changes – recasting this annual credit-subtraction levy into a European style credit-invoice VAT? These options have not proven to be politically palatable, but they are directions that have been under active consideration.

On October 1, 2013 the Japanese Cabinet Office announced that the Consumption Tax would rise from 5% to 8% effective April 1, 2014. The rate will increase again to 10% on October 1, 2015. Details will be incorporated into the 2014 budget, and the expectation is that the tax increase will be offset by investment incentives. The reforms should be based on the *Tax Reform Proposal to Stimulate Non-governmental Investment* drafted by the Liberal Democratic Party Tax Commission. If this proposal goes forward Japan's Consumption Tax would remain largely unchanged. The suggestions to move toward a European VAT will be rejected.

### PAVING THE WAY: 2008

Recently, Prime Minister Yasuo Fukuda suggested that raising the Consumption Tax might be a policy option. But on November 15, 2007 Consumption Tax changes were ruled out for the fiscal year beginning April 2008. Indeed, the fiscal 2008 tax reform proposals, adopted on December 13, 2007 by the Liberal Democratic Party-New Komeito ruling block, avoids any discussion of the Consumption Tax other than positioning it as the core source of revenue for the country's rising social security costs.

Both the *Japan Times On-Line* and the *Asahi Shimbun On-Line* editions of December 14 drew the same conclusion from this “positioning” – the ruling coalition is “paving the way” for an eventual consumption tax rate hike, they said. Political analysts see the government returning to the assessment offered in the June 17, 2003 mid-term report of the Tax Commission that was presented to Prime Minister Junichiro Koizumi before he left office.

### THE NEED AND THE DILEMMA IDENTIFIED: 2003

Professor Hiromitsu Ishi, Chairman of the Tax Commission, submitted *A Sustainable Tax System for Japan's Aging Society*<sup>1</sup> in 2003. It characterized the Japanese fiscal situation as a “state of crisis ... [brought about by the current system where] only about half of Japan's annual expenditure is covered by tax revenue.”<sup>2</sup>

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<sup>1</sup> TAX COMMISSION, *A SUSTAINABLE TAX SYSTEM FOR JAPAN'S AGING SOCIETY* (Jun. 2003) is available in an “informal English translation” at <http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN019941.pdf>.

<sup>2</sup> *Id.* at 3.

The report emphasized that Japan’s “super-aging” society was making things worse. “[B]y 2015 when the ‘baby boomers’ join the older generations, one in four people will be an elderly person. . . . [T]he population is expected to decline after reaching a peak in 2006.”<sup>3</sup> Thus, the Tax Commission charted a course to bring revenue into balance with expenditure “at the earliest time possible in the 2010’s.”<sup>4</sup>

Three very significant Consumption Tax changes were part of the proposals: the rate should double;<sup>5</sup> multiple rates should be employed;<sup>6</sup> and the “bookkeeping method” of accounting should be abandoned and replaced with the significantly more complex “invoice method” that is used in Europe.<sup>7</sup>

These are dramatic proposals. They have a cascading logic. Revenue needs drive the primary change (the rate increase). However, the inherent regressivity of the Consumption Tax drives the second (the adoption of multiple rates). The third change (the use of an invoice method of accounting) is the inevitable consequence of multiple rates.

Unlike in the U.S. where the retail sales tax can be raised without changing the structure of the tax, a significant rate increase in the Japanese context is not that simple. All consumption taxes tend to be regressive, and when mitigation measures are needed they come through narrowing the base. The traditional approach is to either apply an exemption or a reduced rate *to a category of goods or services* – something that is heavily consumed by the poor.

This is a “rough justice” approach. Mitigation by exempting or reducing the rate *for everyone* on the purchase of necessities (because it is assumed that the poor spend proportionally more on them) is overly broad. A better approach (and one that is closer to the traditional Japanese vision of things) is to identify individuals in need (not the goods they most frequently purchase) and then devise a method for granting surgical relief to these individuals alone. It is a person-in-need (as opposed to a product-needed) approach to relief.

This is a much more complex (but far more accurate and effective) method for resolving regressivity. It is doubtful that it could be widely applied without technology. But modern technology can make this happen. This is technology that is already in place and tested in Japan. There are two requirements: (1) IDs with digital biometric identifiers. These IDs will need to be distributed to people in need. The IDs will need to be embedded with digital exemption certificates; (2) certified tax calculation software (equipped with biometric scanners) will need to be installed at point of sale (POS) terminals (electronic cash registers). The scanners will need to read the IDs and tax software will need to process the exemptions.

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<sup>3</sup> *Id.* at 4.

<sup>4</sup> *Id.* at 3.

<sup>5</sup> A SUSTAINABLE TAX SYSTEM FOR JAPAN’S AGING SOCIETY *supra* note 1 at 9.

<sup>6</sup> *Id.* at 9.

<sup>7</sup> *Id.* at 9.

Japan not only has the technology in place to do this, it is moving in exactly this direction in tobacco sales where biometric digital IDs will be used to verify the age of consumers. Why not then, use this same technology to verify an individual's status as a "person-in-need-of-tax-relief?" If Japan decided to take this path with the Consumption Tax it could resolve the policy dilemma at the heart of the rate increase – Japan could institute a sizeable rate increase that would (a) not burden the poor, (b) not require multiple rates, and (c) not require a European-style VAT.

#### A WAY FORWARD

This paper suggests that Japan's way forward, if it is intending to significantly raise the Consumption Tax rate, is to make the administration of the tax more technology-intensive. Technology will allow selective zero-rating of transactions.

An individual-based evaluation of exemption entitlement – limited as appropriate in quantity or value terms – will be required. For example, elderly individuals (over a certain age perhaps) could be allowed to purchase rice free of Consumption Tax. This exemption could be limited by value, quantity or income criteria. The evaluation process can be demanding or not, depending on the scope of the relief desired. For example, particular goods or services could be specifically associated with an individual's entitlement profile in a very granular measure of tax relief. Alternately, relief could be granted broadly to classes of individuals based on broad income measures.

This paper briefly considers Japan's current approach to granting tax relief under the Consumption Tax, and then presents the digital solution (certified transaction tax systems, smart cards with biometric identifiers and digital exemption certificates).

#### JAPAN'S TRADITIONAL APPROACH TO CONSUMPTION TAX RELIEF

Under present law, Japan goes to great lengths to identify specific individuals-in-need of Consumption Tax relief and tries hard to target relief to only to these individuals. It resists broad or universal exemptions that permit all consumers to benefit when to do so would be to provide tax relief to large numbers of people who are outside the target group.

The Japanese exemptions are listed in thirteen discrete categories in Appendix I of the Consumption Tax law.<sup>8</sup> The exemptions are of two basic types: universal exemptions (the first five, as well as the eighth, ninth and tenth), and surgical (the remaining five).

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<sup>8</sup> JAPAN'S REVISED CONSUMPTION TAX LAW (SHOUHIZEIHO), LAW NO. 108, 1988, and APPENDIXES by approving the changes contained in LAW NO. 49, 2000; CABINET ORDER (SHOUHIZEIHO SEKOURI) NO. 360, 1988 (most recent amendment, ORDER NO. 147, 2000 available at: <http://law.e-gov.go.jp/cgi-bin/idxsearch.cgi>. (in Japanese). For an English translation of the Consumption Tax law based on Law No. 108, 1988 by approving changes contained in Law No. 49, 2000, see *Consumption Tax Law*, tr. Vickie L. Beyer, 2000 WTD 247-20 (December 22, 2000). For a translation of the appendixes to Japan's revised consumption tax law, Law No. 108 see *Translation of Exemptions to Japan's Revised Consumption Tax Law*, tr. Vickie L. Beyer, 2000 WTD 247-21 (Dec. 22, 2000). For a translation of the final regulations, Cabinet Order No. 360, 1988 (most recent amendment, Order No. 147, 2000) see *An Order for the Enforcement of the Consumption Tax Law*, tr. Vickie L. Beyer, 2001 WTD 36-24 (Feb. 20, 2001).

The initial five exemptions respond to theoretical or administrative concerns that are common to all broad-based consumption taxes. The list has not been added-to nor has it been significantly modified since the adoption of the law. Included are exemptions for the loan of or the transfer of land;<sup>9</sup> the transfer of negotiable securities;<sup>10</sup> interest paid on loans, government or corporate bonds, and insurance premiums;<sup>11</sup> postage or certificate stamps and gift certificates;<sup>12</sup> and most government services provided either by national or local public entities.<sup>13</sup> Similar exemptions can be found in almost every VAT. None of these exemptions are designed to mitigate regressivity. They do not provide tax relief to individuals-in-need – they simply make the tax work.

The remaining universal exemptions were added to the law with the 1991 amendments (Law No. 73, 1991). They are relatively minor, and respond to situations where the statute did not need to discriminate among beneficiaries, because the nature of the exempt item itself defined the target group. In other words they are universally drafted, but surgical in effect. These exemptions deal with transfers of goods (not services) associated with midwifery;<sup>14</sup> burial and cremation expenses;<sup>15</sup> and transfers or lease of goods for use by the physically handicapped that are further itemized in cabinet orders.<sup>16</sup>

The final five exemptions are quintessentially Japanese. They have a classic individual-in-need, or surgical design. They are for medical treatment,<sup>17</sup> home and social welfare services,<sup>18</sup> educational services,<sup>19</sup> educational texts,<sup>20</sup> and rentals of dwellings.<sup>21</sup> Each is the product of adjustments, modifications, and refinements through the years. Each is very precisely drawn, and is born of political, rather than theoretical or administrative necessity. In each instance the care with which the exemptions are drafted displays a thought process that is primarily concerned with identifying a class of people-in-need, and then associating with them certain goods and services that should be exempt

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<sup>9</sup> Vickie L. Beyer, tr., *Translation of Exemptions to Japan's Revised Consumption Tax Law*, *supra* note 8, at Appendix I(1).

<sup>10</sup> *Id.* at Appendix I(2).

<sup>11</sup> *Id.* at Appendix I(3).

<sup>12</sup> *Id.* at Appendix I(4). With respect to the taxation of stamps, it was determined that the stamp tax was a more effective mechanism for imposing tax in this area (Barry M. Freiman, *Comment: The Japanese Consumption Tax: Value-Added Model or Administrative Nightmare?* 40 AM. U. L. REV. 1265, 1281 n.130 (1991)).

<sup>13</sup> *Id.* at Appendix I(5).

<sup>14</sup> *Id.* at Appendix I(8).

<sup>15</sup> *Id.* at Appendix I(9).

<sup>16</sup> *Id.* at Appendix I(10); The Enforcement Ordinance of the Consumption Tax Law (*Shouhizeihou Sekourei*) 14-4 lists the following goods: artificial arms and legs, safety sticks for the blinds, artificial eyes, Braille point writers, artificial larynxes, wheel chairs and other goods that the Minister of Health, Labor and Welfare may designate as the goods that have special traits, structures and functions for the use of physically handicapped people, but only after consultation with the Minister of Finance.

<sup>17</sup> *Id.* at Appendix I(6).

<sup>18</sup> *Id.* at Appendix I(7).

<sup>19</sup> *Id.* at Appendix I(11).

<sup>20</sup> *Id.* at Appendix I(12).

<sup>21</sup> *Id.* at Appendix I(13).

for members of that group. This is a process designed to disqualify individuals (based on their status) who would be engaged in similar or identical transactions.

*Medical treatment exemption.* A series of exemptions under Appendix I (6)(a) and (b) exempt *goods and services* provided in a medical treatment context. The exemption broadly includes all goods and services provided in a medical or hospitalization context, but narrows the exemption only to individuals whose medical treatment is “based on the provisions of” one of the following laws: the Health Insurance Law (No. 70, 1922); the People’s Health Insurance Law (No. 192, 1958); the Seamen’s Health Insurance Law (No. 73, 1939); the National Civil Servants Mutual Aid Association Law (No. 128, 1958); the Local Civil Servants Mutual Aid Association Law (No. 152, 1962); the Private School Employees Mutual Aid Law (No. 245, 1953) or the Elderly Act (No. 80, 1982).<sup>22</sup>

Further medical exemptions are found under Appendix I (6)(c), (d), (e) and (f).

Appendix I (c) exempts only medical *services*, and narrows the scope of the exemption to individuals whose medical treatment is “based on the provisions” of the Disabled Persons Welfare Law (No. 183, 1950); the Law Concerning Mental Health and the Welfare of the Mentally Disabled (No. 123, 1950) the Daily Life Protection Law (No. 144, 1950); the Law Concerning Support for the Victims of the Atomic Bombs (no. 117, 1994).<sup>23</sup>

Appendix I (d) and (e) are similar. They exempt medical *treatment* and medical *expenses* for individuals whose qualification is “based on the provisions of” the Law Concerning Indemnification for Environmental Pollution-Related Health Injuries (No. 111, 1971),<sup>24</sup> and the Laborer’s Disaster Indemnification Insurance Act (No. 50, 1947) respectively.

Appendix I (f) exempts medical *treatment* pertaining to payments of damages for losses” under the Automobile Accident Indemnification Guarantee Act (No. 97, 1955).<sup>25</sup>

Thus, medical treatment is not universally exempt under the Consumption Tax. The core limitation on the exemption (which is sometimes further limited to cover only services and not both good and services) relates to individuals who are specified under fourteen other non-tax laws. The overall impact is to tax medical services when they are provided to wealthy individuals and foreigners, or generally to individuals outside the scope of the fourteen specific statutes.

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<sup>22</sup> Vickie L. Beyer, tr., JAPAN’S REVISED CONSUMPTION TAX, , *supra* note 8, at Article 6 as further specified in Appendix I-6(a) & (b).

<sup>23</sup> *Id.* at Article 6 as further specified in Appendix I-6(c).

<sup>24</sup> *Id.* at Article 6 as further specified in Appendix I-6(d).

<sup>25</sup> Vickie L. Beyer, tr., *Translation of Exemptions to Japan’s Revised Consumption Tax Law*, *supra* note 8, at Appendix I-6(f).

A further example of the surgical design of these exemptions can be seen in the operation of the 1994 Amendments (Law No. 56, 1994). This law specifically added “hospitalization meals” to the list of exempt supplies (when provided in the context of medical treatment) but only with respect to medical treatment under Appendix I (6)(a) and (b), and not the medical treatment under Appendix I (6)(c), (d), (e) and (f).

Thus, the operation of the Consumption Tax with respect to food and medical services is very complex, but very precise. Meals, considered outside the medical context, are fully taxable. Medical treatment is also taxable unless the individual receives treatment “based on the provisions of” a law listed in Appendix I (6). In some instances meals provided in the context of exempt medical treatment are also exempt. But in other instances only the medical treatment, not the meals are exempt. Thus, three individuals could rest side-by-side in the same hospital after undergoing the exact same medical procedure by the exact same medical staff, and each could have different tax results when the time came to pay their bills.

Comparatively, the approach of the New Zealand GST is far simpler. Food (within the medical context and outside of it) as well as medical services (in any context at all) is taxable.<sup>26</sup> Similar simplicity is apparent in South Africa, although the tax outcome is different. South Africa exempts all basic foodstuffs,<sup>27</sup> as well as all medical or dental procedures, provided they are insured procedures.<sup>28</sup> Thus, in New Zealand and South Africa it would be unusual for three people hospitalized for the same procedure to have different tax results.

With respect to the exemption of medical treatment and related hospital meals, both the New Zealand and South African GSTs are simpler than the Japanese Consumption Tax. The New Zealand base is simpler and *broader*; the South African base is simpler and *narrower*. The critical difference for this study is that both the New Zealand and South African treatment is universal, whereas the Japanese is surgical. The Japanese statute targets its exemption specifically to individuals-in-need. Japan provides relief from the regressive nature of the Consumption Tax directly (to the individual) rather than indirectly (through the goods and services that individual-in-need are deemed to disproportionately purchase).

*Home care services.* Japanese exemptions for home care services and welfare services are treated in a manner similar to those for medical treatment. Under Appendix I (7)(a), home care services (limited to visiting home care, visiting bath care, and other specified services) are exempt (if they are provided at a residence or an institution), but only if the fees are based on the provisions of the Home Care Insurance Law (No. 123, 1997).<sup>29</sup> Under Appendix I (7)(b), assets transferred by a Social Welfare Service are also

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<sup>26</sup> GOODS & SERVICES TAX ACT §§ 11, 11A AND 11B)(1985) (N.Z.), available at <http://www.ird.govt.nz/library/publications/business/ir375.pdf>.

<sup>27</sup> VAT Act §11(1)(j) and SCHED. 2(B)(1) (S.A.), amended up to and including Taxation Laws Second Amendment Act, 2005 (No. 10 of 2005) (S.A.) available at: <http://www.acts.co.za/vat/index.htm>.

<sup>28</sup> *Id.* at VAT Act §10(21A) (S.A.)

<sup>29</sup> Vickie L. Beyer, tr., *Translation of Exemptions to Japan’s Revised Consumption Tax Law*, *supra* note 8, at Appendix I-7(a).



exempt, but only if provided for in the Social Welfare Services Law (Article 2) and the Rehabilitation Sponsorship Enterprise Law (No. 86, 1995).<sup>30</sup>

Once again, the net effect of these provisions is to distinguish between two groups of individuals, those who have personal circumstances that make them entitled to relief, and those who do not. Wealthy individuals and foreigners are among those who are disqualified from the exemption. If they secure the same home care or welfare-type services, as do the poor and elderly, they do not qualify for exemption from the Consumption Tax.

*Educational services and books for educational purposes.* Two sections of Appendix I deal with education-based exemptions, section (11) deals with educational services, and section (12) deals with books used in educational settings. Section (12) was added with the 1991 Amendments (Law No. 73, 1991). The 1991 Amendments also renumbered section (8) in the original law into section (11), thereby placing both of the education-related exemptions side-by-side. Both sections (11) and (12) identify groups entitled to exemption through references to the School Education Law (Law No. 26, 1947).

Why then, did the 1991 Amendments not simply add “educational texts” to one or more of the pre-existing exemptions for educational services in the same manner as “hospitalization meals” were added to some of the pre-existing exemptions for medical treatment in 1994? The reason has all to do with the particularity with which the Japanese legislature differentiates among the classes of individuals it deems to be in need, and how carefully it associates those classes with the goods or services that it wishes to provide exemption. The answer is simply then, that a judgment has been rendered that the class of individuals who should receive exempt “educational services” is not the same as those who have been deemed entitled to exemption when purchasing “educational texts.” The former class is much larger than the later.

The exemption for educational services covers amounts paid for tuition fees, entrance fees, facility equipment costs, and certain other fees provided for in cabinet orders.<sup>31</sup> Following the familiar pattern, the exemption for educational services does not apply to all schools, and does not apply to all courses of instruction in all schools.

Appendix I (11)(a) references the schools in Article 1 of the School Education Law. These schools are the basic primary, elementary, junior high, and high schools, as well as all colleges whether public or private, which fall under the certification provisions

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<sup>30</sup> *Id.* at Appendix I-6(b).

<sup>31</sup> There is some awkwardness when rendering Japanese into English in this section. For example the statute says at Appendix I (11)(a) “The educational services that a person who establishes a school designated in Article 1 of the School Education Law (Law No. 26, 1949) provides [to his students] at his school [are exempt from the Consumption Tax].” This phraseology is explained by Professor Hiroki Akioka as: “Note: In Japanese laws the phrase of a person who establishes some organization is used as the organization itself. So the item above means that the educational services that a regular school in the law provides to its students at the school are exempt.” E-mail communication, November 13, 2006 from Hiroki Akioka to Richard Ainsworth (on file with author.)

of the School Education Law.<sup>32</sup> Appendix I (11)(b) exempts “high level courses, specialty courses or general courses” provided under Article 82-2 by “Specialty Schools,” a classification that includes all professional schools. Appendix I (11)(c) provides an exemption for “more than one year courses of study” at “miscellaneous schools” under Article 83(1).<sup>33</sup>

When the 1991 Amendments added the exemption for “books for educational purposes” in section (12) the class of individuals-in-need was determined to be less than those attending the schools covered in Article 1 of the School Education Law. The students not entitled to exemption were those attending post-secondary schools. Section (12) defines this class by referencing the following articles of the School Education Law: Article 21(1) – dealing with educational books for Primary Schools; Article 40 – dealing with educational books for Junior High Schools; Article 51 – dealing with educational books for Senior High Schools; Article 51-9 – dealing with educational books for Junior Educational Schools; Article 76 – dealing with educational books for Special Education.<sup>34</sup> Thus, it would be possible for three students to receive tuition bills that included a charge for the same required text, a dictionary for example, and for each to have an entirely different tax results, if one was a high school student, another was a college student, and the third was a student attending a post secondary school educational program that will last less than one year.

*Rentals of dwellings for human habitation.* The exemption provided for the rental of residences in Appendix I (13) was added by the 1991 Amendments (Law No. 73, 1991). Much like the “hospitalization meals” and “books for educational purposes” exemptions considered above, the exemption for rentals of dwellings for human habitation is an adjustment to prior exemptions. In this case it is the exemptions for real estate transactions in Appendix I (1) that are being adjusted. Appendix I (1) provides for an exemption for the “loan or transfer ... of land.”

Prior to the inclusion of section (13) four rules related to the treatment of real estate transactions were derived from the language of Appendix I (1). These rules were: (a) for *sales* of land (only) with or without a building of any kind on the land, the sale is exempt;<sup>35</sup> (b) when a building is *sold* along with the land on which it rests, then the

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<sup>32</sup> This provision would mean that a school operating in Japan, but not under Japanese certification (perhaps a school catering to foreigners as a branch campus of an American college or in some other independent capacity would not qualify for exemption from the Consumption Tax. E-mail communication, November 2, 2006 from Shigero Ino to Richard Ainsworth (on file with author.) A classic example would be a semester abroad program [less than one year] offered by an American school and which was not affiliated with an accredited Japanese school.

<sup>33</sup> The Enforcement Ordinance of the Consumption Tax Law (Shouhizeihou Sekourei) 15 further defines these courses of study as those with provide in excess of 680 “hours of instruction per annum.”

<sup>34</sup> Vickie L. Beyer, tr., *Translation of Exemptions to Japan’s Revised Consumption Tax Law*, *supra* note 8, at Appendix I-12.

<sup>35</sup> Primary Regulation Notice 6-1-1 (specifying not only that the sale of only land, as well as its lease (for more than one month is exempt).

building is taxable (but the sale of the land remains exempt);<sup>36</sup> (c) for *rentals* of land (only) without a building, the rental is exempt (provided the rental is for more than one month);<sup>37</sup> (d) when a building is rented along with the land on which it rests, then both building and land are taxable.<sup>38</sup>

Section (13) refines the last of these rules. It distinguished between rental transactions where a building is rented along with the land, based on whether or not the building is a dwelling for human habitation. Only in cases where the real estate rental is for longer than one month and where it contains a dwelling for human habitation is the transaction exempt from tax.

### A THREATENED TRADITION

There has been no public discussion about the exact contours of the multiple rate structure the 2003 Tax Commission was considering, but we know enough about multiple rates in other systems and the current exemption provisions under the Consumption Tax to consider (hypothetically) the threat that this proposal poses to the traditional Japanese response to regressivity.

*Basic hypothetical facts.* Assume that Japan adopts a standard rate of ten percent for goods and services, with a reduced rate of five percent for some items along with full exemptions for a limited number of other transactions.<sup>39</sup> If global consumption tax patterns can be a guide,<sup>40</sup> one of the goods that Japan might zero-rate or subject to the reduced (5%) rate is food for home consumption.

Following the global pattern Japan would then subject all other food purchases to the standard (10%) rate. Two questions are raised by this hypothetical: (1) Would Japan zero-rate or would it apply the reduced (5%) rate to food for home consumption? (2) If Japan did zero-rate or apply the reduced (5%) rate to food for home consumption, would it do so universally (for everyone) or surgically (only for those deemed to be in need)?

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<sup>36</sup> Vickie L. Beyer, tr., *Translation of Exemptions to Japan's Revised Consumption Tax Law*, *supra* note 8, at Appendix I (1); Vickie L. Beyer, tr. *An Order for the Enforcement of the Consumption Tax Law* (Primary Regulation Notice) *supra* note 8, at 6-1-1.

<sup>37</sup> *Id.* at (Primary Regulation Notice) 6-1-1.

<sup>38</sup> *Id.* at (Primary Regulation Notice) 6-1-5.

<sup>39</sup> There is no indication that a 5% rate will be proposed as a reduced rate by the Tax Commission, nor is there any indication that the Tax Commission is considering capping the standard rate at 10%. These rates have some basis in the fact that the current rate is 5%, and there has been discussion of a maximum rate “in excess of 10%,” but their use in this discussion is purely hypothetical.

<sup>40</sup> RICHARD BIRD & PIERRE-PASCAL GENDRON, VAT REVISITED: A NEW LOOK AT THE VALUE ADDED TAX IN DEVELOPING AND TRANSITIONAL COUNTRIES 94 (2005) *available at*: <http://www.fiscalreform.net/research/pdfs/VATR%20Final%20Report%20181005.pdf> at 94 (indicating that in both VAT and RST “... by far the most common exemption for equity reasons is that of food”); *See, e.g.*, VALUE ADDED TAX ACT 1994, Sched. 8 Group 1 General Item 1 (U.K.) (zero-rating “food of a kind used for human consumption”) *available at* [http://www.opsi.gov.uk/acts/acts1994/Ukpga\\_19940023\\_en\\_1.htm](http://www.opsi.gov.uk/acts/acts1994/Ukpga_19940023_en_1.htm); MASS. GEN. LAWS ch. 64H, §6(h) and MASS. REGS. CODE tit. 64H.6.5(4), § 830 (exempting food products for human consumption unless they are included in a meal sold by a restaurant).

*Analysis – Food for home consumption.* The 2003 Tax Commission seemed to indicate that Japan would apply multiple rates to food,<sup>41</sup> but it also seems apparent that it would recommend that Japan not follow conventional wisdom and zero-rate food for home consumption.

Three observations suggest that the Japanese approach would be to subject food for home consumption to the reduced (5%) rate, and then impose the standard (10%) rate on prepared food. The observations supporting this suggestion are: (1) the *status quo* – food for home consumption is currently subject to tax at 5%, with only the very limited exceptions for “hospitalization meals” under Appendix I (6)(a) and (b); (2) revenue loss – zero-rating food for home consumption would reduce the current revenue stream significantly, maybe by as much as 20%;<sup>42</sup> and (3) political opposition – the elderly would probably oppose an increase in the tax on groceries from five to ten percent.

Given Japan’s revenue needs and the importance of food in the consumption base, the real question for Japan is not whether it would zero-rate some food from the consumption tax base, but whether it would subject all food to a standard (10%) rate? This is the point where the regressivity of the Consumption Tax becomes a serious political issue. The issue is political because, while it is one thing to expect the elderly to accept a continuation of the current (5%) tax on food, it is quite another matter to assume that they will accept a doubling of the tax on groceries – and if the elderly do anything, they eat and vote.

The 2003 Tax Commission was understandably concerned that its recommendations not have an adverse affect on the popular acceptance of the Consumption Tax.<sup>43</sup> The Japanese have not always been receptive to the Consumption Tax. The Shoup Mission’s VAT was rejected in 1954,<sup>44</sup> as was another VAT that was proposed in 1979.<sup>45</sup> Prime Minister Nakasone withdrew a VAT proposal as recently as 1987<sup>46</sup> because of widespread public opposition.

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<sup>41</sup> A SUSTAINABLE TAX SYSTEM FOR JAPAN’S AGING SOCIETY, *supra* note 1, at 9 (describing the need for relief, suggesting that multiple rates would be needed, and specifying one commodity as an example of where one might expect to find multiple rates if their proposals are adopted with the expression “food and others”).

<sup>42</sup> JOHN F. DUE & JOHN L. MIKESSELL, SALES TAXATION: STATE AND LOCAL STRUCTURE AND ADMINISTRATION 74 and 79 (2d ed. 1994) (noting that the exemption for food for home consumption is “... the most expensive ... cost[ing] a state from 20 percent to 25 percent of sales and use tax revenue... [and] is perhaps the largest mistake the states have made in their sales tax structures, ... Larger volumes of expenditure of persons above the lowest income levels are freed from tax for no justification whatsoever”).

<sup>43</sup> A SUSTAINABLE TAX SYSTEM FOR JAPAN’S AGING SOCIETY *supra* note 1, at 4 & 9 (indicating the Tax Commission’s belief that the tax system “by nature” is supposed to “inspire confidence among the people” and that the “[c]onsumption tax has become well accepted by the people as one of the fundamental taxes in the Japanese system, [but that] ... the reliability and transparency of the consumption tax must be improved in view of the importance of this tax in the aging society.”).

<sup>44</sup> Keimei Kaizuka, *The Shoup Tax System and the Postwar Development of the Japanese Economy*, 82 AM. EC. REV. 221, 222 (May 1992).

<sup>45</sup> HIROMITSU ISHI, THE JAPANESE TAX SYSTEM 273 (1989)

<sup>46</sup> *Id.* at 280.

The drafters of the Consumption Tax have always been aware that fairness is needed in the imposition of this tax. When pressed, the traditional Japanese inclination has been to impose a single uniform rate (a “fairness” criteria based in horizontal equities), and then to find a mechanism through which a surgically drafted exemption will relieve just those individuals-in-need (and no more) from the base. This is a “fairness” criteria based in vertical equities. This is exactly how Appendix I (a) and (b) function with respect to hospitalization meals.

Could the “hospitalization meals” solution be applied to the present hypothetical? If all food were to be taxed at the standard (10%) rate and only the poor, elderly or handicapped were allowed to purchase food for home consumption at a reduced (5%) rate, then the following would result: (a) the difficulty of the rate increase would be solved in a traditionally manner (dual “fairness” criteria would be applied with horizontal equities dominant over vertical equities); and (b) a considerable amount of new revenue would be derived from those who were not poor, elderly or handicapped as they paid at the standard (10%) rate whenever they made food purchases of any kind.

There are considerable difficulties in applying the “hospitalization meals” solution. First, the size of the preferred group (maybe upwards of twenty-five percent of the population) is very large. Secondly, the number of locations around the country where such a reduced (5%) rate would need to be applied and enforced is most likely in the hundreds of thousands. This is a difficult solution to implement.

Then again, the difficulties are all administrative (audit and compliance), not conceptual or theoretical. It is one thing to audit (or comply with) an exemption of hospital meals provided to patients whose medical treatment is “based on the provisions of” one of the following laws – the Health Insurance Law (No. 70, 1922); the People’s Health Insurance Law (No. 192, 1958); the Seamen’s Health Insurance Law (No. 73, 1939); the National Civil Servants Mutual Aid Association Law (No. 128, 1958); the Local Civil Servants Mutual Aid Association Law (No. 152, 1962); the Private School Employees Mutual Aid Law (No. 245, 1953) or the Elderly Act (No. 80, 1982) – but it is quite another thing to audit (or comply with) the application of a reduced rate of tax on the purchase of groceries anywhere in the country by only the poor, elderly or handicapped.

Faced with the administrative burden of applying the traditional solution, the 2003 Tax Commission seemed to be contemplating a Consumption Tax proposal that would apply a universal reduced (5%) rate of tax to the purchase of food for home consumption. In doing so, the Japanese tradition of providing surgical relief for regressivity would be abandoned in favor of a European approach to the problem. Rich and poor would equally benefit from the exemption and potential revenue yields would be reduced. Only the restaurant meals segment of the food business would be making significant new revenue contributions.

BIOMETRIC IDs AND CERTIFIED TAX SOFTWARE  
FOR THE JAPANESE CONSUMPTION TAX

If Japan would like to maintain its traditional approach to providing surgical tax relief within the Consumption Tax, but if the scope of this relief needs to be both broader and more complex, then technology offers a way to do this.

Two problems need to be overcome. First, Japan would need to easily, securely and accurately verify the identity of individuals-in-need at hundreds of thousands of retail locations across the country twenty-four hours a day, seven days a week. Secondly, Japan would need to have a simple and inexpensive way to adjust the tax charged (item-by-item) on sales to certain final consumers (qualified individuals making qualified purchases). In addition, the solution would need to integrate seamlessly with the current economy. Multiple and mixed transactions would need to be handled without interruption to normal retail processes. The solution should be virtually invisible to the casual observer.

The technology to solve both of these problems is available today. The first problem – the identity issue – can be solved through biometric identifiers in “smart” ID cards embedded with encrypted zero-rate (or reduced rate) certificates for specific goods or services. Limitations based on volume or monetary values could be included. The second problem – the tax determination issue – can be solved with certified transaction tax software that is installed on site or remotely accessed in the same manner that credit or debit cards operate today. The tax calculation accuracy of this software would need to be certified by the government. Assurances would need to be extended to retail businesses that they would not be liable for tax determination errors, barring fraud.

### 1. “Smart” IDs with Biometric Identifiers – in Japan

National identity cards with biometric identifiers play a central role in present day public and private sector efficiency<sup>47</sup> and security efforts.<sup>48</sup> As these cards become more

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<sup>47</sup> UNITED STATES GENERAL ACCOUNTING OFFICE, ELECTRONIC BENEFITS TRANSFER: USE OF BIOMETRICS TO DETER FRAUD IN THE NATIONWIDE EBT PROGRAM, GAO/OSI-95-20, SEPT. 1995 at 4 (reporting that from June 1991 through July 1994 the Los Angeles County Department of Public Services used fingerprinting of welfare recipients to eliminate 3,000 previously-approved entitlement cases, saving over \$14 million); John D. Woodward, *Biometric Scanning, Law and Policy: Identifying the Concerns – Drafting the Biometric Blueprint*, 59 U. PITT L. REV. 97, 152 (1997) (indicating that the states of Connecticut, Illinois, Massachusetts, New Jersey, New York, Pennsylvania and Texas are using similar fingerprint imaging to prevent welfare fraud).

Globally it is the health care sector is a leader in identifying where smart card efficiency gains can be found – increasing quality and decreasing the cost of care. Both government and private sector institutions have adopted smart card technology. For example, an EU Council Regulation made health care available to citizens temporarily present in another Member State, and this in turn quickly led to the adoption of private sector smart cards containing patient medical data, as well as an EU-wide smart card to facilitate the sharing of services among countries. Commission Regulation 1408/71 of 14 June 1971 on the application of social security schemes to employed persons, to self-employed persons, and to members of their families moving within the community, Article 22(1)(a), 1971 O.J. (L 149) *available at* [http://www.dwp.gov.uk/advisers/docs/lawvols/bluevol/pdf/a9\\_2001.pdf](http://www.dwp.gov.uk/advisers/docs/lawvols/bluevol/pdf/a9_2001.pdf)). *See also* Attila Naszlady & Janos Naszlady, *Patient Health Record on a Smart Card*, 48 INT. J. MED. INFORMATICS 191 (1998) (studying the adoption of smart card technology in Hungary for efficient communication of patient histories and the findings of physical examinations); Administrative Commission on Social Security for Migrant Workers Decision 189 of 18 June 2003 aimed at introducing a European insurance card to replace the forms

and more commonplace, it is time for the tax collector to consider whether or not there is a willingness to use some of the excess functionality of these cards for tax purposes – functionality that would accurately and immediately associate the identified person with a deserved Consumption Tax exemption (or reduced rate).

Security concerns have understandably received heightened attention in the post September 11<sup>th</sup> world, and the capabilities of “smart cards” in this context are precipitating a global convergence of identity information.<sup>49</sup> Privacy concerns are

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necessary for application of Council Regulation (EEC) No 1408/71 and (EEC) No 574/72 as regards access to health care during a temporary stay in a Member State other than the competent State or the State of residence, O.J. (L 276) 1; Administrative Commission on Social Security for Migrant Workers Decision 190 of 18 June 2003 concerning the technical specifications of the European health insurance card, O.J. (L 276) 4.

Outside of the E.U. *see also* Alvin T. S. Chan, *WWW+ Smart Card: Towards a Mobile Health Care Management System* 57 INT. J. MED. INFORMATICS 127 (2000) (presenting a study on extending medical smart card technology through World Wide Web applications as a standard interface tool for accessing medical records contained within smart cards, conducted and implemented in Hong Kong); Benoit A. Aubert & Genevieve Hamel, *Adoption of Smart Cards in the Medical Sector: the Canadian Experience*, 53 SOC. SCI. & MED. 879 (2001) (presenting a Canadian study on the adoption of smart card technology in the medical sector that stresses the need for providing both direct benefits to the user and completeness of information for acceptance by the medical professional).

Similar efforts in the U.S. were advanced under a reform of the U.S. health care system. Although ultimately unsuccessful, the Clinton Health Security Act (H.R. 3600/ S.1757, 103d Cong., 1<sup>st</sup> Sess. (1993)) made the issuance of a Health Security “Smart” Card a key component in the program. The card was intended to identify the holder as a person entitled to health benefits and was designed to permit access to patient medical data through a system of databases, improving the quality of care and minimizing administrative costs. William H. Minor, *Identity Cards and Databases in Health Care: The Need for Federal Privacy Protections*, 28 COLUM. J.L. & SOC. PROBS. 253, 256 (1995).

<sup>48</sup> UNITED STATES GENERAL ACCOUNTING OFFICE, ELECTRONIC GOVERNMENT: AVIATION SECURITY: CHALLENGES IN USING BIOMETRIC TECHNOLOGIES, GAO-04-785T, MAY 19, 2004 at 24 (reporting on progress made in the adaptation of biometric smart card technologies in airport security systems); UNITED STATES GENERAL ACCOUNTING OFFICE, ELECTRONIC GOVERNMENT: PROGRESS IN PROMOTING ADOPTION OF SMART CARD TECHNOLOGY, GAO-03-144, JAN. 2003 at 13-14 (reporting on the progress of 62 U.S. government smart card security and efficiency oriented programs established over the prior two year period); UNITED STATES GENERAL ACCOUNTING OFFICE, TECHNOLOGY ASSESSMENT: USING BIOMETRICS FOR BORDER SECURITY, GAO-03-174, NOV. 2002 at 4-5 (providing an assessment of the seven leading biometric technologies including facial recognition, fingerprint recognition, hand geometry, iris recognition, retina recognition, signature recognition, and speaker recognition and determining that the first four not only are suitable for border security, but have successfully been used in border control pilot projects); UNITED STATES GENERAL ACCOUNTING OFFICE, INFORMATION SECURITY CHALLENGES IN USING BIOMETRICS, GAO-03-1137T, SEPT. 9, 2003 at 4-5 (subcommittee testimony of the Chief Technologist of Applied Research and Methods, Keith A. Rhodes, assessing the costs and benefits of using biometric identifiers in a national border control security system).

<sup>49</sup> Biometric identifiers were added to EU passports and travel documents. Facial image biometrics are required, fingerprint biometrics are optional. Council Regulation (EC) No 2252/2004, 2004 O.J. (L 385) 1, at Art. 1(2). The express reason for the biometric facial image was that, “[t]he facial image is interoperable and can be used in our relations with third countries such as the U.S. However, the fingerprint could be added as an option for Member States who wish to do so, if they want to search their national databases, which would be currently the only possibility for identification.” Commission Proposal for a Council Regulation on standards for security and biometrics in EU citizens’ passports, COM(2004)116 final at 7. On June 2, 2006 the Commission proposed applying biometric identifiers to E.U. visas through the Common Consular Instructions (CCI). In a press release the Commission Vice-President Franco Frattini, Commissioner responsible for freedom, security and justice, declared:

considerable. Nevertheless, both advocates and opponents of national identity smart cards agree that there is little likelihood that this movement will slow down.<sup>50</sup> The best that can be done is to offer protections against mistakes, misuse, and abuse, while we try to extend the social benefits of this highly accurate and immediate form of identification.

*National identity cards – history.* National identity cards have been around for a long time, and have served many purposes. Identity cards were introduced in France in the 1890's and were used primarily to regulate immigration, integration and assimilation. The French cards were seen as a means of preserving the “Frenchness of France.”

Hong Kong made paper national identity cards mandatory in 1949. The Hong Kong cards performed social service functions in addition to providing a measure of national security from “foreign” Chinese nationals. The Hong Kong cards were intended to “... assist measures that might be found necessary for the maintenance of law and order and for the distribution of food or other commodities as a result of prevailing conditions of political and economic unrest (emphasis added).”<sup>51</sup> Hong Kong probably holds the record for the longest continual use of a mandatory national identity card system (among the democratic governments where they are currently in use). Even with its assimilation into the People’s Republic of China, Hong Kong has no intention of discontinuing identity cards. On August 19, 2003 Hong Kong began a transition to “smart” ID cards,<sup>52</sup> a process that is ongoing.<sup>53</sup>

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This Proposal will have a knock on effect: it will facilitate the visa issuing procedure, prevent visa shopping, facilitate checks at external borders and strength the fight against fraud and, within the territory of the Member States, assist in the identification and return of illegal immigrants and the prevention of threats to the internal security of the Member States. ... Common Application Centers will have the advantage of reinforcing and streamlining local consular cooperation between Member States as resources can be pooled and shared, which will be of benefit to both states and visa applicants. One central access point will even ensure that the data protection requirements, to which I attach the greatest importance, are more easily met.

Press Release IP/06/717 (June 2, 2006) available at <http://ec.europa.eu/idabc/en/document/5674/355>

<sup>50</sup> Gwen Wendy Kennedy, *Thumbs Up for Biometric Authentication!* 8 COMP. L. REV. & TECH. J. 379, 379 (2004) (favoring biometric identity cards and indicating that “[t]he only remaining impediment to the large-scale deployment of biometric authentication devices is the perceived threat to privacy.”); Lawrence O. Gostin et al., *Privacy and Security of Personal Information in a New Health Care System*, 270 JAMA 2487, 2487 (1993) (indicating that even though the Clinton Health Security Act was defeated, “[t]he collection and transmission of vast amounts of health information in automated form will occur with or without reform of the health care system.”); Sobel *supra* note **Error! Bookmark not defined.**, at 320 (opposing biometric identity cards but indicating that the movement toward a national identity system in the U.S. had begun and seemed unstoppable long before the terrorist attacks of September 11, 2001).

<sup>51</sup> Hong Kong Special Administrative Region Identity Card Project, *Initial Privacy Impact Assessment Report* at 15 (Nov. 2000) [citing from Speech by Attorney General Moving the First Reading of the Registration of Persons Bill 1949 and Objects and Reasons for the Bill, Hong Kong Legislative Council Hansard, 1949, pp. 225-27] available at <http://www.legco.gov.hk/yr00-01/english/fc/esc/papers/esc27e1.pdf> (last visited Dec. 2, 2007).

<sup>52</sup> LEGISLATIVE COUNCIL PANEL ON SECURITY: POLICY INITIATIVE OF THE SECURITY BUREAU, LC PAPER NO. CB(2)64/05-06(01) at 6 (indicating that by the end of August 2005 an estimated 2.85 million residents had been issued new smart identity cards) available at <http://www.legco.gov.hk> (last visited Aug. 2, 2007).

<sup>53</sup> LEGISLATIVE COUNCIL BRIEF, APPLICATION FOR NEW IDENTITY CARDS (PERSONS BORN IN OR BEFORE 1942, IN 1990 TO 1992 OR 1997 TO 2003) ORDER, SBCR 1/1486/81 (setting out the schedule based on year



*Biometric identifiers – history.* Considered by themselves, biometric identifiers have a longer history than identity cards. Fingerprints pressed in wax were used as far back as the third century B.C. to authenticate written documents. Documents from the Qin Dynasty in China are the oldest extant evidence of the use of biometrics as identifiers (fingerprints in this case). Fingerprints remain among the most reliable of all biometric identifiers, and along with iris, and face recognition are the most easily digitized and incorporated into the memory chips on smart cards.

*National identity cards & biometric identifiers – Contemporary use.* Modern security concerns are digitally merging biometric identification into the traditional ID card – a move from paper to plastic.<sup>54</sup> Before Hong Kong converted to smart identity

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of birth for mandatory smart card replacement for three additional groups of residents) available at <http://www.legco.gov.hk> (last visited Dec. 2, 2007).

<sup>54</sup> Embedding a biometric (fingerprint) on a microchip in a card is an exceptionally easy task. A detailed and technical explanation of the process in the context of a biometrically secure credit card is provided by Jain and Pankanti:

Here's how it would work. When activating your new card, you would load an image of your fingerprint onto the card. To do this, you would press your finger against a sensor in the card—a silicon chip containing an array of micro-capacitor plates. (In large quantities, these fingerprint-sensing chips cost only about \$5 each.) The surface of the skin serves as a second layer of plates for each micro-capacitor, and the air gap acts as the dielectric medium. A small electrical charge is created between the finger surface and the capacitor plates in the chip. The magnitude of the charge depends on the distance between the skin surface and the plates. Because the ridges in the fingerprint pattern are closer to the silicon chip than the valleys, ridges and valleys result in different capacitance values across the matrix of plates. The capacitance values of different plates are measured and converted into pixel intensities to form a digital image of the fingerprint. Next, a microprocessor in the smart card extracts a few specific details, called minutiae, from the digital image of the fingerprint. Minutiae include locations where the ridges end abruptly and locations where two or more ridges merge, or a single ridge branches out into two or more ridges. Typically, in a live-scan fingerprint image of good quality, there are 20 to 70 minutiae; the actual number depends on the size of the sensor surface and the placement of the finger on the sensor. The minutiae information is encrypted and stored, along with the cardholder's identifying information, as a template in the smart card's flash memory.

At the start of a credit card transaction, you would present your smart credit card to a point-of-sale terminal. The terminal would establish secure communications channels between itself and your card via communications chips embedded in the card and with the credit card company's central database via Ethernet. The terminal then would verify that your card has not been reported lost or stolen, by exchanging encrypted information with the card in a predetermined sequence and checking its responses against the credit card database.

Next, you would touch your credit card's fingerprint sensor pad. The matcher, a software program running on the card's microprocessor, would compare the signals from the sensor to the biometric template stored in the card's memory. The matcher would determine the number of corresponding minutiae and calculate a fingerprint similarity result, known as a matching score. Even in ideal situations, not all minutiae from the input and template prints taken from the same finger will match. So the matcher uses what's called a threshold parameter to decide whether a given pair of feature sets belong to the same finger or not. If there's a match, the card sends a digital signature and a time

cards it surveyed similar programs in Finland, Brunei, and Malaysia. Smart cards in Finland are voluntary, whereas those in Brunei and Malaysia are mandatory. Biometric identification systems can be effectively certified, and their performance can be independently validated.<sup>55</sup>

*European Leadership.* Accelerated by the US move to incorporate biometric identifiers in U.S. visas and a U.S. mandate that similar technology be used in foreign passports under the Visa Waiver Program, European governments redoubled existing efforts toward the development of an integrated system of mutually recognized passports and national identity cards, both with embedded biometric identifiers. The push and pull of security and privacy concerns are more than evident in the E.U. debates. The Madrid bombings further underscored the need for immediately accurate national identity cards. At the same time, longstanding concerns over the creation of new centralized databases and the digital integration of pre-existing databanks were heightened as the scope of the privacy threat posed by digital ID's was now global in scope, rather than purely local.<sup>56</sup>

Italy currently leads all European governments in the use of smart card technology for identification. Over 13.1 million cards have been issued as of October 2005. The rest of Europe has issued about 1.8 million smart cards with Estonia (800,000) and Belgium (585,000) falling a distant second and third.

The IDABC benchmarking survey has assessed European adoption of smart card technology for national ID's and government e-services each year for the past five years. The European Commission announced the creation of IDABC on February 22, 2001, and

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stamp to the point-of-sale terminal. The entire matching process could take less than a second, after which the card is accepted or rejected.

Anil K. Jain & Sharathchandra Pankanti, *A Touch of Money*, IEEE SPECTRUM ON-LINE (July 2006) available at <http://www.spectrum.ieee.org/jul06/4123> (last visited Dec. 2, 2007).

<sup>55</sup> Satat Dass, Yongfang Zhu & Anil Jain, *Validating a Biometric Authentication System: Sample Size Requirements*, IEEE TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE (forthcoming 2006) available at [http://biometrics.cse.msu.edu/Publications/GeneralBiometrics/DassZhuJain\\_SampleSize\\_PAMI06.pdf](http://biometrics.cse.msu.edu/Publications/GeneralBiometrics/DassZhuJain_SampleSize_PAMI06.pdf) (last visited Dec. 2, 2007).

<sup>56</sup> The following sequence of events is instructive. (1) On February 18, 2004 the European Commission submitted a draft resolution on standard security features and biometrics in E.U. citizens' passports. In this draft the Commission proposed that passports and other travel documents should include a storage medium with a digital facial image. Although the facial image was mandatory, Member States were allowed to add digital fingerprints into the passports by national law. The draft regulation suggests the fingerprints be stored in a national database. (COM(2004) 116 final, O.J. (C 98) 39). (2) On October 25-26, 2004 the text of the proposal was changed as a result of input from the Justice and Home Affairs Council so that both facial and fingerprint biometrics were incorporated as mandatory features. (COM 15139/2004). (3) The European Parliament's non-binding resolution of the Commission's proposal for a Council regulation was adopted on December 2, 2004 with 471 votes in favor, 118 votes against and 6 abstentions. However, the Parliament rejected both the mandatory inclusion of biometric fingerprints, and the creation of a central database of E.U. passports and travel documents. (4) On December 13, 2004 the Council adopted Regulation (EC) No. 2252/2004 which did not take into account the suggestions of the Parliament. The regulation came into force on January 18, 2005 and envisages the inclusion of digital facial images within 18 months and digitized fingerprints within 36 months after the adoption of technical specifications and standards. (5) Technical specifications and standards were adopted on February 28, 2005. (COM(2005) 409 final).

the Internal Market Council agreed upon the benchmarks and measured functionalities of the survey. On March 23-24, 2001 the Stockholm European Council endorsed the Commission's benchmarking methodology.

The fifth IDABC report issued in May 2006 draws three important conclusions: (1) E.U. adoption of smart ID card technologies is very fast growing. Of the twenty-five E.U. Member States: (a) seven already have national smart card ID's (five are voluntary, two are mandatory); (b) fourteen have smart ID card programs under development; and (c) only four have no announced plans for national smart ID cards. (2) All E.U. countries have web portals. Most allow direct and secure interaction between citizens and government agencies through these portals either with digital signatures contained in smart ID cards or with digital certificates issued by accrediting agencies. (3) Tax administrations have aggressively adapted to smart ID card technological opportunities.

*Japanese "smart" IDs with biometric identifiers.* Japan is a technologically advanced economy with a deep digital penetration. Like the E.U., Japan can adopt digital solutions if it determines that technology offers more efficient solutions to tax problems. Japan is receptive to using biometric IDs for status verification in consumer sales transactions.

Starting in March of 2008 Japan Tobacco will begin to operate vending machines equipped with "smart" card ID recognition systems to prevent teenagers from purchasing tobacco products. Biometric identifiers in the card will be used to confirm that the tobacco purchaser is the adult to whom the card was issued. The program will begin in Kagoshima and Miyazaki, and gradually spread throughout Japan. It is expected that eventually these ID cards will be required to be presented even in the smallest tobacco stores to purchase tobacco products, and that about thirty percent of the Japanese population will carry them.

The cards, called Taspo, will incorporate prepayment functionality, called Pidel, a service currently offered by JCB<sup>57</sup>. By the end of 2008 Japan Tobacco will have installed the "adult identifier" on all of the 620,000 tobacco vending machines in operation in Japan requiring the smoking population (approximately 43% of Japanese males and 12% of Japanese females) to carry the card, if they want to make a purchase.<sup>58</sup>

The figures in the Japan Tobacco story are remarkably close to what would be needed at a minimum for the effective implementation of a "smart" card that would verify the identity of individuals who qualify for consumption tax relief. These cards, the CT-ID, would need to be distributed to the 25% of the Japanese population that is poor,

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<sup>57</sup> JCB stands for Japan Credit Bureau. It is the dominant credit card company in Japan, and has formed business alliances with Discover Card in the US.

<sup>58</sup> *Tabaco yuni senyoudenshimoney/ 08nen dounyu no seijinshikibetsuhanbaiki* (Electric money for Tabacco/ Vending machines with age-check system from 2008) Shikoku Shinbunsha (Shikoku News) Oct. 2006 available at <http://www.shikoku-np.co.jp/national/economy/article.aspx?id=20061019000438> (in Japanese). Translation by Chikara Iida, Master Degree candidate in International Private Law, Ritsumeikan University, Kyoto, Japan. E-mail correspondence on file with authors.)

elderly or handicapped, and would need to be able to interface with terminals at the nearly 445,000 food and beverage retail establishments in Japan. Japan Tobacco expects to have its Taspo card in the hands of nearly 30% of the Japanese population with “adult identifier” and payment functionality in over 620,000 vending machines in 2008. Could the Consumption Tax administration do the same for a CT-ID card?

## 2. Certified Transaction Tax Software– in Japan

“Smart” national IDs are part of a larger context of technological change that is having a powerful affect on consumption tax administration. The consumption tax itself is digitizing. As “smart” national ID technologies merge with digital consumption tax regimes not only will the delivery of tax services be transformed but also the nature of the tax itself will be transformed from a regressive to a progressive levy. This kind of change will come as certificates (zero-rate, or reduced rate entitlements) are embedded in national ID’s, and digital compliance systems are reconfigured to recognize the certificate and act upon it. Technology will exempt or reduce-rate the poor from paying tax on necessities while the wealthy will remain subject to tax on the same purchases.

The speed of these changes in Japan will depend entirely on the degree to which technology has penetrated the tax administration and society at large. The business community is ready for this change now. As the Japan Tobacco example indicates business is ready for exceptionally granular identity functionality with countrywide application in tandem with even small volume, small value, cash or credit purchases.

Business is ready because almost all business information today – including all critical data needed for determining consumption taxes – is digitized.<sup>59</sup> Working with digitizing business data has not been a problem for some time now.

*Certification of transaction tax software today.* Although the OECD has considered and encourages the certification of transaction tax software in VAT, the present reality is that only the members of the Streamlined Sales and Use Tax Agreement are actually certifying software. The SSUTA provides three models for software certification: the certified service provider (CSP);<sup>60</sup> the certified automated system (CAS);<sup>61</sup> and the certified proprietary system (CPS).<sup>62</sup> In 2001 the viability of the CSP

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<sup>59</sup> School of Information Management and Systems at the University of California at Berkeley study titled “*How Much Information.*” (indicating that 93 % of the three billion gigabytes of data generated worldwide (in 1999) was computer generated) available at: <http://www.cni.org/tfms/2000b.fall/handout/How-KSwearingen2000Ftf.pdf> (last visited Dec. 10, 2007); Peter Lyman and Hal R. Varian, *How Much Information? 2003* (School of Information Management and Systems at the University of California at Berkeley, release date October 27, 2003) in the Executive Summary (of the 5 exabytes of new information created in 2002, 95% was stored on magnetic media, mostly hard disks) available at: [http://www.sims.berkeley.edu/research/projects/how-much-info-2003/printable\\_report.pdf](http://www.sims.berkeley.edu/research/projects/how-much-info-2003/printable_report.pdf) .

<sup>60</sup> STREAMLINED SALES AND USE TAX AGREEMENT, at §203, available at: <http://www.streamlinedsalestax.org/Final%20Agreement%20As%20Amended%2011-16-04.pdf>.

<sup>61</sup> *Id.* at § 203.

<sup>62</sup> *Id.* at § 207.

model was successfully tested in a pilot project,<sup>63</sup> and on June 1, 2006 three software companies, Taxware, L.P., Exactor and Avalara, became the first three CSPs. Taxware additionally was certified as a CAS.

Two of the SSUTA certifications, the Certified Automated System (CAS) and the Certified Proprietary System (CPS), allow for the certification of automated systems that are kept in-house.<sup>64</sup> Unlike with the CSP model, relief from liability under a CAS or a CPS model is dependent on the taxpayer properly using the certified system.<sup>65</sup> Under the CSP it is a third party who operates the system remotely and who accepts liability for errors. Questions about liability allocation among all these systems (CSP, CAS and CPS) remain, and even though they are fully operational these certification systems are best considered “works-in-progress” until they are tested for a number of tax cycles.<sup>66</sup>

The SSUTA certification process involves measuring the software against third party standards: (1) the AICPA’s SAS 94<sup>67</sup> and (2) the US- GAO Federal Information Systems Control Audit Manual.<sup>68</sup> In addition, CSP’s and CAS software developers must comply with (3) ISO Number 17799<sup>69</sup> of the International Organization for

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<sup>63</sup> In 2001 four states (Kansas, Michigan, North Carolina, and Wisconsin) participated in a pilot project to test the CSP concept. Three firms applied to participate as CSP’s, (Taxware International, Pitney-Bowes/Vertex, and esalestax), two were certified as CSPs, (Taxware International, Pitney-Bowes/Vertex). The pilot project was successful in establishing the viability of the CSP concept. The Streamlined Sales Tax Project web site indicates: “The pilot project established that the use of a third-party provider was viable. Systems and procedures were established that resulted in the actual collection and remittance of sales and use tax by a vendor on behalf of a retailer. Knowledge and experience was obtained by the participating states and vendors.” See <http://www.streamlinedsalestax.org> (last visited Dec. 2, 2007).

<sup>64</sup> STREAMLINED SALES AND USE TAX AGREEMENT, *supra* note 60 at § 501 (C) and (D).

<sup>65</sup> UNIFORM SALES AND USE TAX ADMINISTRATION ACT (as approved on Dec. 22, 200, and as amended on Jan. 22, 2001) at §§ 9(b) and (c) (for CAS and CPS respectively).

<sup>66</sup> Stephen Moore, *An Uneasy Marriage: Sellers and Certified Service Providers*, 21 J. STATE TAX’N 65, 72 (2003). (“The relationship [between sellers and service providers] is inherently adversarial and each party needs to develop audit strategies for protecting itself from the other party in what may prove to be an unhappy marriage for these partners in commerce. . . . Can CSPs audit sellers to determine whether there is probably cause to believe that a seller has committed fraud or made a material misrepresentation?” Moore asks what would happen if a seller simply provides faulty information to the CSP without, rising to the level of misrepresentation or fraud, but there tax collection was short nevertheless?).

<sup>67</sup> STREAMLINED SALE TAX PROJECT, CERTIFICATION STANDARDS (rev. 5/17-04) available at <http://www.streamlinedsalestax.org/> (provides a detailed application of SAS 94, FISCAM and ISO 17799 to the SSUTA); STREAMLINED SALES AND USE TAX AGREEMENT, *supra* note 60; AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS, PROFESSIONAL STANDARDS, Vol. 1 AU § 319 *The Effect of Information Technology on the Auditor's Consideration of Internal Control in a Financial Statement Audit*, as amending SAS No. 55 *Consideration of Internal Control in a Financial Statement Audit*.

<sup>68</sup> STREAMLINED SALES AND USE TAX AGREEMENT, *supra* note 60; U.S. GOVERNMENT ACCOUNTING OFFICE, ACCOUNTING AND INFORMATION MANAGEMENT DIVISION, FEDERAL INFORMATION SYSTEMS CONTROL AUDIT MANUAL, (FISCAM) Vol. 1 (GAO-AIMD12.19.6) available at <http://www.gao.gov/special.pubs/ai12.19.6.pdf>.

<sup>69</sup> STREAMLINED SALES AND USE TAX AGREEMENT, *supra* note 60; INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, ISO 17799: INFORMATION TECHNOLOGY, SECURITY TECHNIQUES, CODE FOR INFORMATION SECURITY MANAGEMENT (ISO/IEC 17799:2005).

Standardization. A similar set of objective standards for certification is discussed in the OECD materials.<sup>70</sup>

Essentially SSUTA certification is conducted in two steps; (1) an extensive security check of the software system, the developer and the service provider is performed, and then (2) a comprehensive test of tax calculation and return preparation capabilities is carried out by running thousands of hypothetical tax scenarios through the system.

Properly programmed, it is a relatively easy matter for an automated tax calculation system to match up the skew code of a good or service with a specified tax rate to determine the tax due. It is not at all a large leap in technology for a tax calculation system to be programmed to recognize that a different rate should be applied where an exemption (zero-rate, or reduced rate) code is received from a “smart” ID passed during the purchasing process.

From a systems perspective the question presented by the “smart” ID with an embedded exemption (zero-rating or reduced rate) certificate, is no different than the problem that is presented to an automated system when the same item is processed through the system, but in multiple taxing jurisdictions. Different jurisdictions frequently have different rates, exemption requirements, and reporting standards for the same items. Functionally, the poor, elderly, or disabled person qualifying for an exemption is seen by an automated system as simply another taxing jurisdiction with a different set of rates and requirements. Rather than discriminating among geographic jurisdictions, the system in this instance discriminates within the same jurisdiction among purchasers based on a set of codes activated by authorization procedures initiated in encrypted codes embedded in the certificate of a “smart” ID.

Thus, because highly discriminatory, multi-jurisdictional tax calculation systems are certified today under the SSUTA, it is not difficult to imagine that the same type of discrimination function (within the single jurisdiction of Japan) can be certified as equally accurate. This level of automated tax processing only awaits the adoption of certificates of exemption in “smart” IDs. The programming and systems design barriers have already been overcome in software that easily handles in excess of 10,000 retail sales tax jurisdictions in the U.S. as well as the VAT regimes of 170 different countries.

## CONCLUSION

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<sup>70</sup> OECD, ELECTRONIC COMMERCE: FACILITATING COLLECTION OF CONSUMPTION TAXES ON BUSINESS-TO-CONSUMER CROSS-BORDER E-COMMERCE TRANSACTIONS (Feb. 11, 2005) at 17-18 (discussing a range of government “approvals” for tax accounting software and indicating that at one extreme is “accreditation” – an approval process functions simply as a mechanism to “formally identify” software that meets certain criteria of acceptability – while at the other extreme is “certification” – an approval process that designates software as “an officially authorized mechanism to perform specified functions” – reaching a conclusion that the SSUTA the OECD uses the term “certification” in this same manner even though the OECD discussion is broader than that found in SSUTA documents) available at <http://www.oecd.org> (last visited Dec. 2, 2007).

If we begin with the premise that Japan is a technologically advanced economy with a deep digital penetration, then there would seem to be no technological barrier preventing it from adopting the solution offered here. Like the E.U., Japan can adopt technology-intensive solutions if and when it determines that they offer more efficient outcomes. It is a pleasant circumstance indeed when technology not only offers efficiency, but offers efficiency in a manner that preserves long-standing, traditional approaches to a tax policy questions.

To go down this technology road, Japan will need to do three things: (1) establish an identity card system<sup>71</sup> with biometric identifiers and embed “smart” zero-rate or reduced-rate authorization codes; (2) define the classes of citizens who will be authorized for zero-rate or reduced-rate purchases, and associate these qualified purchasers with goods or services they could purchase at each rate,<sup>72</sup> and (3) establish a software certification regime for programs used at the retail sale level.<sup>73</sup> It would be necessary for this software to recognize both the reduced-rate or zero-rate codes and correctly associated them with the goods and services qualified for special treatment for a specific taxpayer. The software would need to calculate the tax and retain an audit file for each transaction.

With this technology in place Japanese policymakers could take one of two paths. Japan could either (1) continue to have a single (higher) rate Consumption Tax, but with a new series of exemptions for the poor, elderly, or handicapped, or it could (2) adopt a multiple rate system where the poor, elderly or handicapped qualified for reduced rates. Either of these solutions can be efficiently implemented and if the rates and qualifications are carefully monitored. Both of these paths preserve Japan’s traditional approach to consumption tax relief.

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<sup>71</sup> There is no need for this ID to be mandatory. Those who qualify for reduced or zero rates would not need to secure an ID card, if they had privacy concerns. Cards could always be secured, but not used if there were selective privacy concerns. However, without a “smart” ID card it would not be possible for an individual to secure a reduced rate of tax. If this result was deemed unfair, or if the National Tax Administration determined that for various reasons (power outages, system failures, etc.) that an alternate (back-up paper) system should be implemented to manage the privacy issue, then this individual might be allowed to make reduced or zero rated purchases in another manner.

<sup>72</sup> It is expected that much of this work would be done by social services agencies. It should also be expected that this program would start out small and expand in scope and granularity as time went on.

<sup>73</sup> There is no need to make use of this software mandatory. In all instances where a retailer decided not to install certified software, the Consumption Tax would be due at the standard rate (10%) for all sales in the same manner as under the present regime. There would, of course, be considerable pressure from customers who qualified for an exempt or reduced rate to have the software installed. Thus, free market pressures and self-interest would facilitate wide acceptance of the software.